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MPhil

INVERTING THE BAD DEBT LADDER:
CREDIT SELF-EFFICACY AND HEALTHIER FINANCIAL STATE

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by

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DECLARATION

I, David Victor Blyth, confirm that the work within this dissertation is my original work (except where citations indicate otherwise) and that none on the work herein has been submitted to another university. I will not allow anyone to copy any part of this dissertation with the intention of passing it off as his or her own work.

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ABSTRACT

Levels of indebtedness amongst South African consumers are increasing year on year and the formal lending system is not structured or incentivised to reverse this. In lieu of fundamental change in regulation and to current institutionalised lending and debt collection practices, the best way to reverse the negative cycle of ever-increasing indebtedness is by shifting control to the consumer themselves. Industry collection mechanisms are functional and blunt, treating any arrear debt as 'bad' and by association all indebted consumers are labelled 'bad' with no recognition of the circumstance an individual might find themselves in. Covid has had a devastating effect on consumer psychology and the ability for individuals and households to meet their financial obligations. A more empathy-led approach to supporting indebted consumers is necessary.

The aim of this study is to establish the most important factors within credit self-efficacy that enable certain consumers to make better credit decisions and reverse the downward, self-reinforcing spiral to greater indebtedness, It has supported the development of a business model aimed at making it attractive and profitable for the lenders to actively support the enablement of consumer capability in relation to credit. Using an online survey, a quota controlled sample of n=874 consumers was achieved, adequately representing the adult population active in the formal South African credit market.

Through the development of a structured equation model using n=794 of the collected data records, the study has found that the typical treatment of the indebted is ineffectual in helping consumers return to a healthier financial state. The perception that consumer desire of material goods alone drives poor credit behaviour and therefore greater levels of indebtedness is unfounded, as is the idea of profligate spending and its impact on credit behaviour. Living a good lifestyle is important to consumers and does affect credit behaviour but this does not translate into a significant effect on financial state. Rather, it is the combination of financial credit self-efficacy, financial confidence and financial management, as composite credit self-efficacy, that has a significant and strong influence on credit behaviour. In turn, credit behaviour as a mediating variable significantly and strongly influences financial state, more so than the direct effect of composite credit self-efficacy. Financial state also has a significant and extremely strong influence on composite credit self-efficacy, proving that a healthier financial

state actually empowers greater consumer self-efficacy in relation to credit and financial matters.

It is therefore incumbent on lenders of credit to have a more sensitive appreciation of consumer context and support consumers along their whole credit journey, by better understanding their personal circumstances, related psychosocial factors and how this affects their level of composite credit self-efficacy and credit behaviour. Future studies should concentrate on how credit self-efficacy can be instilled and tracked from an early age, especially amongst consumers who are new to the credit market, as data suggests that a single event can trigger a life-long journey down a ladder of increasing indebtedness.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AVE	Average Variance Explained
AX	Anxiety
CADS	Consumer Attitudes to Debt
CD	Credit Default
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CLF	Common Latent Factor
CMB	Common Method Bias
CMV	Common Method Variance
CMIN	Chi-squared value
CO	Control
CPP	Credit Payment Profiles
CR	Credit Repayment
CS	Credit Score
CT	Centrality
CU	Credit Usage
D_A	Debt Attitude
DAS	Decision Automated Service
df	Degrees of freedom
EDC	External Debt Collector
EFA	Exploratory Factor Analysis
ESOMAR	European Society for Opinion and Marketing Research
ESP	Extended Spend Profiles
FCAP	Financial Capability
FCON	Financial Confidence
FCSE	Financial Credit Self-efficacy
FDS	Financial Decision Switch
FG	Frugality
FIML	Full imputation maximum likelihood
FMG	Financial Management
FSES	Financial Self-efficacy Scale
FSU	Financial Service User
HP	Happiness
IMP	Impulsivity
GCSE	General Credit Self-efficacy
GFI	Goodness of Fit Index
GDPR	General Data Protection Regulation
GoF	Goodness of Fit
GSES	General Self-efficacy Scale
INF	Influence
KZN	KwaZulu-Natal
LP	Lender Power
LS	Lifestyle
M_A	Money Attitude
MAS	Money Attitudes Scale
MAT	Materialism
ML	Maximum Likelihood
MNG	Manage
MNO	Mobile Network Operator
MR	Morality
MVS	Material Values Scale
NCA	National Credit Act
POPIA	Protection Of Personal Information Act
PP	Power Prestige
RAS	Research Automate Service
RMSEA	Root Mean Square Error of Approximation
RT	Retention
SAMRA	South African Market Research Association
SC	Security
SEM	Structural Equation Modelling
SRMR	Standardized Root Mean Square Residual
SS	Success
SU	Support
VIF	Variance Inflation Factor

1 CHAPTER ONE: INTRODUCTION

1.1 Background

The number of indebted South African consumers who are relying on credit just to continue living has risen astronomically in the past few years with a R33 billion increase in debt in 2020 alone and 38% of all formal loans now deemed to be not in good standing ("Middle-Class South Africans...," 2021). Tracking data shows that 32% of all consumers have fallen behind on a store card payment and 44% have had to borrow money from friends and family (Old Mutual & Peppercorn Research, 2021). This has realised a situation where the majority of South Africans would not make it beyond three months if they lost their income and those not able to make it beyond a month has increased from 12% in 2019 to 20% in 2021 (Old Mutual & Peppercorn Research, 2021). New variables now tracked by the same source show that 30% of consumers have cashed out savings or investments, 38% have fallen behind on household bills and 56% reported overwhelming or high levels of stress (Old Mutual & Peppercorn Research, 2021). The SA Human Rights Commission show that half of the South African consumers with credit active accounts are over-indebted (Roets, 2021). This equates to over 11.6 of the 23.3 million people with 28.6 million active accounts within the formal national credit system[1], whose collective debt is circa R1.9 trillion (Experian, 2020). Delinquency rates sky-rocketed in 2020 due to the effects of the COVID-19 pandemic as can be seen in Figure 1 below. These have since settled down to pre-COVID levels, but the systemic problem remains.

Financial inclusion is a prevailing topic in financial services with most of the institutional lenders including this item as a business objective in their strategic documentation. Unfortunately many of these strategies are measured on the volume of consumers that can be brought into the system, thereby adding to top-line growth rather than addressing the endemic

[1] 'Formal national credit system' means holding one or more of the following: Credit Card, Personal Loan, Vehicle Loan, Home Loan and/or Retail Loan Account

problem of ensuring that these incoming consumers are adequately prepared for the credit journey that awaits them.

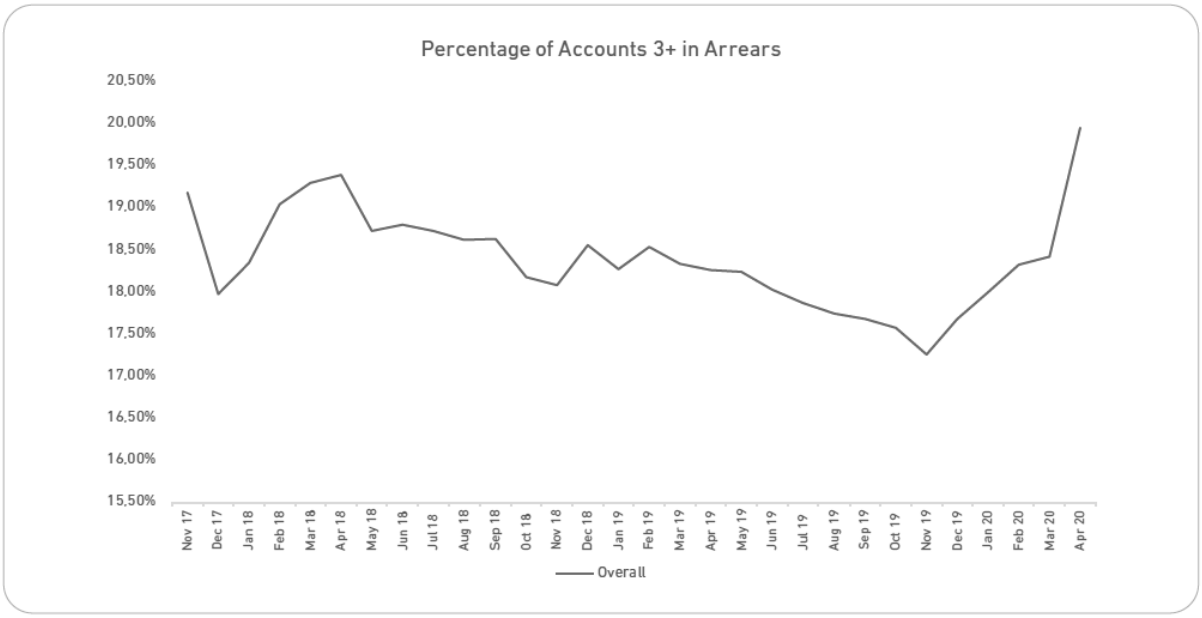


Figure 1 - Consumer Default Index; January-to-April-2020 (Experian, 2020)

A very troubling fact is that the credit active population in South Africa is larger than the labour force and is concentrated in low-income consumers. These consumers have the highest incidence of defaulting (twice more likely than others) and this has been on the rise since 2018 (Eighty20, 2020). A common credit industry mindset incorrectly extrapolates this fact to suggest that a lower income is a predictor of default – this is akin to treating a symptom as the cause. It is critical that consumers are included and have access to credit but how the process of inclusion is managed and how consumers are supported once in the system, has to change. Sadly, it is the increasingly indebted individuals and those who are less prepared who will use the illegal services of a local trusted 'mashonisa' (Krige, 2011) or the amoral micro-credit providers who over-charge already indebted consumers (Bateman, 2019) to secure even more credit. Negative stereotypes about young people not being interested in planning for the future as well as the reality that they are costly to serve, holds institutions back from properly investing in building financial products and engagement strategies that help keep these individuals in a healthy financial state once they've entered the market. With 65% of consumers seeing themselves as financially insecure and not confident that they will achieve their financial goals (Godsall et al., 2017), we have to better understand the factors that lead to consumer indebtedness and not ignore the consumer context in the day-to-day decision-making around consumer lending.

It was nearly 30 years ago that Livingstone and Lunt (1992) identified that attitudinal and psychological factors predict repayment of debt. In fact, psychology has been proven to be more important than economic factors in predicting indebtedness (Furnham, 1984), confirming that social and psychological factors actually correlate to greater levels of indebtedness (Lea et al., 1995a). Existing literature, relating to consumer finances and specifically credit, conflates the above topics, making it very difficult to unravel the nature, relative contribution and influence that each has on levels of consumer indebtedness. Scholars like Hoffmann and McNair (2019) recently described the current literature as "fragmented" (p. 1633) and lacking in comprehensive measures and examination of how psychological characteristics effect financial vulnerability. Rook and Fisher (1995) identify that future research is required to examine the social environment in which these kinds of decisions are made, further supporting the need to assess the Inter-relationship between cognitive, motivational, affective and selective factors.

If "psychology the main driver of what people do" (de Meza et al., 2008, p. 2), then we must appreciate the non-demographic, psychosocial factors driving consumer decision-making in relation to their financial circumstances, as well as the "belief systems and affective processes surrounding credit and consumption" (Richins, 2016, p. 152) It is therefore important that we understand how consumers feel about payments (Prelec, D. Loewenstein, 1998) and that we appreciate the interplay between several psychological factors at play (Hoffmann & McNair, 2019). An inter-disciplinary approach to manage the negative societal effects of poor credit behaviour and resulting indebtedness is definitely required(Liu & Zhang, 2021) – we need to address the cause. Schicks (2014) speaks of a causal chain in certain factors increasing levels of indebtedness and Nyhus and Webley (2001) prove that psychological variables have a role to play beyond economic variables in predicting if debt is temporal and whether or not they can help consumers return to an improved financial state. Over-indebtedness leads to people leaving the financial system when we know that financial inclusion is critical to worldwide economic growth (Noor et al., 2020). The "escape from indebtedness" language used by Mewse et al. is powerful, as are their finding that psychosocial factors predict debt levels, however they also emphasise that little research exists on how consumers can practically be reversed (2010a, p. 1022).

This research aims to fill this gap in literature where previous studies focus on one or a few constructs and the interdependence between them, or mediating effects of them, on credit behaviour or indebtedness. No one study has taken into account all of the possible psycho-social factors that could affect credit behaviour and therefore financial state.

1.2 Problem definition

Paul Slott of the Debt Counselling Association of South Africa states in an interview with EyeWitness News that "there were many consumers who had up to eight loans" (Kassen, 2019, para. 3). This points to the issue of consumers using new debt to service existing debt which can only have a negative outcome. South Africa's history of colonisation and apartheid created a fertile environment for the emergence of an over-indebted population (Bateman, 2019; Schraten, 2020). People were forced to live far away from city centres with limited access to education, basic services, markets and financial services. As a consequence, South Africa's population of 59.62m people (Statistics South Africa, 2020) is now characterised by extremely high levels of social inequality (Francis & Webster, 2019). The stage that was set by this context led to the development of a credit industry of which the structure, systems and processes contradict the intent of the neo-liberal market economy envisaged by the of the newly elected government in 1994 (James, 2017) and instead has created a "fully functioning poverty trap" (Bateman, 2019, p. 79).

Prelec and Lowenstein (1998) explain debt as "a systematic interference between pleasures derived from consumption and the magnitude and timing of payments" (p. 5). While this creative description is accurate, it does not account for those people whose are not driven by the pleasure associated with consumption but rather by the "debt-bondage cycle" (James, 2012, p. 25). With practical requirements for day-to-day necessities in addition to the fulfilment of cultural payment expectations like 'lobola' and 'black tax', and the need to deal with unexpected life shocks, the consumer reality is one of day-to-day survival. Indebtedness has become a negative and self-reinforcing cycle: once in the credit system, the balance of power shifts to the lender, while consumers in the system, have little support to address the situation they find themselves in and become further indebted and therefore poorer as a result (Antoniades, 2018; James, 2014; Tokunaga, 1993).. The "marketisation" and subsequent "institutionalisation" and "financialization" of consumer credit in South Africa has therefore since its formal inception, resulted in an increase in social inequality (Schraten, 2020, p. 2). Once demand for credit is triggered and a contract is closed, you as a consumer are a potential 'bad debt'. You find yourself on the debt ladder – and the direction of travel is a binary outcome of your subsequent credit behaviour – either up or down. The use of the word ladder in the title of this paper is a useful metaphor, not only to illustrate the upward and downward movement of individuals in their levels of indebtedness, but also to represent the contradiction in the supply of credit in South Africa. Bateman (2019) compares the Jeffrey Sachs model of the ladder of development from 'The End of Poverty' to the micro-credit model in South Africa,

which despite its well-intended vision to increase bottom-up growth through entrepreneurship, has instead created consumer entrapment.

It is important to appreciate the rationale for the introduction of credit to the South African market was to support previously disadvantaged consumers in their pursuit of wealth creation through its ability to stimulate entrepreneurship (Bateman, 2019). However, The Banking Association of South Africa, when describing the background to the National Credit Act, highlights on its website that: "the complex nature of credit agreements has rendered many consumers, especially illiterate individuals, vulnerable and often exploited by credit providers" (The Banking Association South Africa, 2008, para. 1). The National Credit Act of 2006, written into law to address this exploitation of consumers, has sadly been ineffectual in delivering on its intent and rather than support the less fortunate consumers in need of a change to their already poor circumstances, it has ended up supporting the rapid growth in the profits of lenders (Schraten, 2020). Therefore, in the provision of credit, the locus of control is almost entirely in the hands of the credit provider and their collection arms, be they owned or outsourced. The collection process is typically void of emotion and understanding of peoples' life circumstances and the real challenges they have in taking control of their own financial destiny (Bar-Gill & Warren, 2008; Bateman, 2019; James, 2014; Schraten, 2020).

Lending practices range from supportive to predatory and depending on the approach employed, they directly or indirectly advantage or disadvantage a consumer's debt journey (James, 2012; Peebles, 2010; Schraten, 2020; Ssebagala, 2014; Tach & Greene, 2014; Thaler & Sunstein, 2008). While many lenders comply with the regulatory requirements to drive financial inclusion in a responsible way, many others contradict this in their credit lending behaviour and their relationship with consumers, leveraging the irrationality and emotions of consumers (Engelberg & Sjöberg, 2006) to trigger demand that is either unnecessary or misplaced (Peebles, 2010). The ethics of a credit provider and the information asymmetry in the system affect the level of control they exert over consumers. The behaviour of the credit provider has the ability to influence consumer psychology, with images and ideas of personal transformation (Richins, 2013). Equal distribution of power is an impossible panacea as it would require wholesale legislative changes that are highly unlikely, even in the long-term.

In lieu of fundamental change to the credit system and in particular the more active monitoring and regulation of more responsible lending practices, consumer self-management is key to a sustainable solution.

1.3 Purpose and significance of the research

This research aimed to establish the most important factors within credit self-efficacy that enable certain consumers to make better credit decisions, reverse the ladder of indebtedness, and move in a positive direction back to a healthier financial state. This critical missing information was used to model the credit recovery journeys of borrowers, as exemplars that inform the development of an improved industry process model that is built on a better understanding of consumers. Regulators will benefit from this research as it will recommend changes to credit provisioning and will reduce information asymmetry in the system through a greater focus on a whole view of the consumers' psychosocial and life circumstances.

Credit providers will benefit from this research in its recommendation for a real-time solution for credit decision-making that combines the structured equation emerging from this research with existing credit bureau variables and lender information. The research aimed to inform the development of a technology platform, as described in Appendix 5 titled Praxis: business model, to deliver a single integrated and automated solution that can predict a consumer's propensity to move upward or downward in their level of indebtedness, prior to their take-up of a credit product. This practical outcome will assist credit providers with the tools to better understand the situations in which consumers find themselves, avoiding the blanket classification of all consumers with credit as 'bad debt', and rather treating them as 'good people' who might possibly be in bad situations. Commercially it is expected that such a solution will help reduce the cost of lender collections by up to 50% and increase the size of the market by 25%.

Additionally and most importantly, the aim of conducting this research was to determine how to ultimately support the ability of consumers to self-manage, through more realistic lending decisions based on a real-time prediction of their individual debt trajectories. This means that both lender and consumer can have a more informed, eye-to-eye relationship that is productive rather than destructive. This promotes a healthier credit system and community and the return of consumers to 'financial goodness' on the ladder of indebtedness.

While an understanding of the needs of stakeholders across the whole credit system, both supply-side and demand-side, is required, it is envisaged that fundamental regulatory change that effects more realistic credit provisioning is unlikely in the medium term. Hence this research focused on the largest gap in information, the consumer demand side. It has supported the development of a business model aimed at reversing the downward, self-reinforcing spiral

to greater indebtedness by examining the relationship between self-efficacy, consumer psychosocial factors, consumer credit behaviours and consumer levels of indebtedness. In finding ways to positively influence consumer psychology and therefore credit behaviour, it is possible to make it attractive and profitable for the lenders to actively support the enablement of consumer capability in relation to credit.

1.4 Research objectives and questions

1.4.1 Research objectives

The following were the aims of this research:

- Examine the effect of credit self-efficacy and its mediating factors on consumer credit behaviours
- Assess the relative influence that cognitive, motivational, affective and selective factors have on credit self-efficacy
- Examine the relationship between consumer credit behaviours and level of consumer indebtedness
- Examine the relationship between credit self-efficacy and its mediating factors on level of consumer indebtedness

1.4.2 Research questions

The following four research questions related to the research objectives above:

Question 1: How does credit self-efficacy and its mediating factors affect consumer credit behaviour?

Question 2: How does cognitive, motivational, affective and selective factors mediate credit self-efficacy's influence on credit behaviour?

Question 3: What is the relationship between consumer credit behaviour and financial state (level of consumer indebtedness)?

Question 4: What is the relationship between credit self-efficacy and financial state (level of consumer indebtedness)?

1.5 Organisation of the study

Chapter One – Introduction

This chapter set the context of the South African consumer credit environment, describing the challenging circumstances in which consumers find themselves. It briefly describes the history that has influenced the creation of the problem that, once in the credit system, consumers face the likely prospect of a downward journey to increasingly greater levels of indebtedness. The chapter then introduces the theoretical background followed by the purpose and significance of this research and the research objectives and related questions. The chapter closes with this section describing the organisation of the study.

Chapter Two – Literature Review

The literature review defines the various concepts used in this paper including a definition of indebtedness, a definition of credit self-efficacy, the nature of the South African credit system and the actors within it. It reviews the available empirical research related to the inputs to credit self-efficacy itself, as well as the contributing psychosocial factors that influence the level of consumer credit self-efficacy. Chapter Two ends on a description of the kinds of credit behaviours that define consumers and introduces a conceptual framework using the preceding theory, that forms the basis of the research study.

Chapter Three – Research Methodology

The design, approach and strategy for the research study are discussed prior to describing, in detail, the research design including sample and sampling, data analysis, measurement instruments and measurement approach. A description of all the variables that were measured during the research is provided along with the analytical framework used to develop the findings. This chapter also describes the approach and outcome of a pilot study which was undertaken a few months prior to the main study. The aim of this pilot study was to assess the viability of the research instrument, to adjust it to reduce the number of variables measured and accommodate for any learnings that would help improve the outcome of the main study. A theoretical model with its related hypotheses for testing is introduced at this point, followed by the criteria and limitations of the study and then ethical considerations which close out Chapter Three.

Chapter Four – Findings and Discussion

This chapter includes both the findings and a discussion of the research outputs. It begins with a review of the sample achieved as well as its demographic breakdown and representation, followed by a description of the steps taken in analysis. The model that was tested is introduced

followed by a review of the descriptive statistics used to identify data inconsistencies and outliers. A description of the measurement checks undertaken, including a test for common method bias (CMB) and exploratory factors analysis of pre-existing scales in the research instrument, is outlined. An explanation of the iterative process of confirmatory factor analysis and reliability testing is provided as well as discriminant analysis across the constructs within the measurement model. A structural model, built through a series of iterative analyses to answer the hypotheses, is then presented. This chapter highlights the reliability and validity of the research output, assess model fit and describes the mediating relationships that exist in the structured equation model. This chapter also contains a discussion of research findings, referencing relevant literature where appropriate, and highlights where theory is confirmed, where the data contributes to theory development and where there are gaps that require further exploration. Chapter Four closes with a summary of the results of the study including Goodness of Fit (GoF) instrumentation and a final path diagram of the resulting structured equation model.

Chapter Five – Conclusions

This chapter closes the paper with a summary of the study, concluding remarks on the findings and policy recommendations including the broader implications of the research as well as suggestions for expanding and improving the industry process model. It also highlights where further research is required to improve future studies, and closes with a short summary statement.

> “In order for the oppressed to be able to wage the struggle for their liberation, they must perceive the reality of oppression not as a closed world from which there is no exit, but as a limiting situation which they can transform.”
>
> (Freire, 2005, p. 49).

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter defines the concepts of indebtedness and self-efficacy describing the four inputs to the latter in relation to the South African credit context. The chapter also provides an overview of the South African credit system and its regulation before introducing a theoretical framework that informed the development of the research design. A review of existing empirical literature is presented, describing how one measures credit self-efficacy and exploring the four mediating psychosocial factors that are the components of credit self-efficacy. The nature of consumer credit behaviours are then discussed and the chapter closes with the introduction of a conceptual framework based on the preceding theoretical inputs.

2.2 Definition of concepts

2.2.1 Definition of consumer indebtedness

Indebtedness is "the condition of owing money" ("Indebtedness," 2021) but this practical description conceals the rich texture of what lies within a consumer's experience with debt and how the state of indebtedness affects them. While there is an anthropological discussion to be had about indebtedness, the concern of this research relates to money, not as the "chief cultural infrastructure that allows us to communicate" (Hart, 2001 as cited by Halperin, 2003, p. 191) but the practical mechanism that underpins consumer payments and related financial state. When we hear the word indebtedness, in this sense, we think about debt as an obligation to pay, to return money that is owed. In fact a debt might not involve the borrowing of money at all but rather the utilisation of a resource or access to something of value: debt in this sense is not planned for, as opposed to credit which is agreed to by both borrower and lender in advance (Lea et al., 1995a). Indebtedness, within the frame of this research, is a computation of the level of obligation a borrower has in order to fulfil a planned repayment of "idiosyncratic money" (Carruthers & Espeland, 1998, pp. 21–22) or credit to the lender. The issuer of money in the world of credit is the credit provider, the receiver of money is the credit borrower. When the borrower's level of indebtedness extends beyond what was planned and agreed, this becomes a default on the credit agreement. With the above in mind, the terms debt, credit and indebtedness will henceforth be used reciprocally within the context of the exchange of monetary value.

2.2.2 Theoretical framework

The world is dynamic and we as consumers are actors who must navigate this overall social ecosystem. Our ability as human beings to manage our way through life and make the right choices which affect us positively or negatively, is largely dependent on our self-efficacy. Self-efficacy is the power we as people have over our individual lives (Bandura, 2006) and it is a critical concept because it reflects our day-to-day existence and the activities we undertake within it (Gist & Mitchell, 1992). It helps us to be resourceful in managing our goals, effort, persistence and recovery (Lown, 2011), resist the temptations that surround us every day (Cowan, 2019) and enables us to be self-directed in how we shape our lives and social structures across personal, behavioural and environmental factors (Bandura, 1997, 2012). The perception of one's individual capability within these factors is called "perceived self-efficacy" which creates belief in one's ability to organise one's efforts and actions through the application of our cognitive minds (Bandura, 1997, pp. 43–45). We thus have the ability to control the choices we make, given our belief about ourselves, without having to continuously reference the mental checklist of our capability (Bandura, 1997). However, it is important to distinguish between self-efficacy and controllability; Sotiropoulos and D'Astous (2013) provide a convincing perspective on the difference, describing self-efficacy as an "internal locus of control" and controllability as "an external locus of control" (p. 183).

Consumer credit self-efficacy is therefore the influence we as people have over our own credit behaviour and therefore level of indebtedness. Bandura's model (Bandura, 1997) describes four inputs to self-efficacy:

- Enactive experiences of mastery
- Vicarious experience
- Verbal persuasion
- Physiological and affective states.

Each of these inputs are discussed below to highlight how the theory related to each might influence consumer credit self-efficacy within a South African context.

2.2.2.1 Enactive experiences of mastery

Simply put, this is the memory we have of our previous successful performances which can help indicate the capability we have at a moment in time. This happens through how we process and reflect on information related to our efficacy and ongoing self-appraisal throughout our lives which in turn raises or reduces the belief we have in our personal efficacy depending on the performances we achieve (Bandura, 1997).

This is a critical conversation in relation to this research, as prior to the amendment of the credit regulation in 1992, South Africa's socio-political context left the majority of South African consumers with no credit management experience. Once opened up, the regulation favoured the credit provider and consumer borrowers who were subsequently trapped in a downward spiral of ever-increasing indebtedness, were seen to be poor performers in relation to their ability to manage credit. This continuous reinforcement of powerlessness and thus perceived incapability had a knock-on effect on the other inputs to self-efficacy mentioned below. Additionally, in itself, it creates a sense of helpless submission, cognitive slavery, biasing and a reduction in consumer self-belief (Graeber, 2011; Peebles, 2010; The World Bank, 2015).

Within the objective of 'financial inclusion', the historic social mechanisms of lending within communities became "formal, interest-bearing and impersonal" (James, 2012, p. 23). In the debates that were held on the Consumer Protection Act 68 of 2008, the Department of Trade and Industry's described consumer indebtedness as the result of a "legacy of systemic dispossession and under investment in education for black South Africans", fundamentally amplifying the imbalance of power (DTI 2004b:11 as cited by Schraten, 2020, p. 103). This, in concert with the positive desire for household progress by South African consumers, after a history of exclusion, created a system where all indebted consumers are considered 'bad debt' and are actively chased by creditors, extending themselves through other loans to cope and are therefore driven "deeper into a hole" (James, 2014, p. 23).

2.2.2.2 Vicarious experience

Comparing oneself to others or modelling one's behaviour on that of others can alter self-efficacy beliefs and can even supersede one's own personal experiences (Bandura, 1997). Whether it be through attention, retention, production or motivation, vicarious experiences have the ability to help us build a motivating picture of success through observation of others and similarly discourage us from pursuing actions that we have seen will result in a bad outcome (Bandura, 1997).

In relation to the South African credit system, very few South Africans will have historically seen or experienced the successful use of credit in creating sustainable individual progress. Rather, the experiences are somewhat the opposite – they will have seen their parents, peers and broader community succumb to the relentless pressure of rising debt, repayment stress and the juggling of creditors to make it through each month. This is discouraging to one's sense of personal efficacy and thus future motivation and is described by Bateman as a "micro debt-trap" (2019, p. 77) and by James as a feeling of "entrapment" (2014, p. 17) fuelled by the desire for upward mobility, competition and envy. The credit propositions themselves amplify this

negative experience, being “rapacious” in their construction (Porteous & Hazelhurst, 2004 as cited by James, 2012, p. 28). Examples of this include the power to deduct overdue monies directly from a consumer’s bank account and the charging of unfairly high interest rates. Fixing this situation requires the collective action of all actors in the system but the solutions that have to date been proposed only serve to divide and create further “credit apartheid” (James, 2012, p. 28).

2.2.2.3 Verbal persuasion

What we hear from others can instil us with confidence or fill us with fear. Maintaining a sense of personal efficacy is made easier when others verbalise their belief in you and your capabilities especially in your developmental years (Bandura, 1997).

Leaders in business who instil confidence speak about the purpose and vision of the company and show through clear objectives and implementation planning how the business will achieve its goals. The majority of South Africans do not benefit from having grown up in households where hope and confirmatory communication in relation to financial goals is heard every other day. Rather they hear of struggle, hardship and despair, creating a paradox that prompts the need for increased access to credit and at the same time, the need to get out from under the burden of credit. In this context, offer based promotions that entice consumers to take-up credit might look to some like ‘financial inclusion’ but in many cases they are completely immoral in their construction. Schraten’s description of the enticing, prize-incentivised, post-Christmas, ‘zero-percent loan’ from African Bank along with its punitive small print as an example of a perfectly constructed version of this immorality (Schraten, 2020).

2.2.2.4 Physiological and affective states

We’re all unique in our ability to ‘listen’ to our physiology and appreciate how our affective state influences our actions based on our perceptual judgement of our capabilities or weaknesses (Bandura, 1997). Our personal perceptions and interpretations of our emotional or physical state can make arousal helpful or unhelpful depending on how our mood in the moment correlates to the mood we were in when we learned new abilities (Bandura, 1997).

The socio-economic structure of the South African market and related physiological and affective state of its consumers, amplifies the challenge in credit usage. If your family is hungry or if your child needs shoes for school and you have no further financial means to support this, then credit becomes a necessity (KLA, personal communication, April 29, 2020). There is also the peer pressure and associated anxiety that comes with being seen to be successful or unsuccessful, in a market where people have been historically excluded. In communities where new success is represented by the acquisition and often flouting of material goods as ‘badge

purchases', the peer pressure involved is heightened. For example, James introduces us to a consumer who was derided by relatives for choosing to "drive an old Toyota rather than buying a Mercedes" (2012, p. 32). A cycle of increasing indebtedness and increasing anxiety follows those that succumb to extending their debt to keep up with appearances and suppress feelings of inadequacy or lack of success (James, 2014). Sadly, "malfunctions of the consumer credit market are attributed to the ununiformed and irrational behaviour of individual borrowers and not to the asymmetry of power inherent in credit relations" (Schraten, 2020, p. 19).

The definition of self-efficacy by Bandura (1997) also describes four contributing and mediating factors to self-efficacy:

- Cognitive factors
- Motivational factors
- Affective factors
- Selective factors.

Each of the above four factors are discussed in detail under the title Empirical Literature in Section 2.4 below as they are used as key components of the theoretical model for this research.

2.3 The South African credit system and its regulation

Prior to its transition into a democracy on 27 April 1994, the South African State completely controlled policy development and under this rule, not all consumers could hold a formal bank account or access credit arrangements. The system of regulation was fragmented and inconsistent and included: The Usury Act of 1968, effectively controlling pricing and limiting access to credit products (Kelly-Louw, 2009; Schraten, 2020); the Sale and Services Matters Act (No. 25 of 1964) protecting those involved in to lay-by agreements (Ssebagala, 2014); the Credit Agreements Act, 75 of 1980 focused on concepts like cooling-off periods for certain types of regulated transactions (Ssebagala, 2014); and the Alienation of Land Act, 68 of 1981 (Kelly-Louw, 2009) that protected consumer interests if the property purchase was a financed arrangement. In the main, the policies supported before democracy were designed for the privileged few and at the advent of democracy, there was a need to unravel the myopic, inwardly focused policies that historically served to limit access to the economy. However, sandwiched in the four year period between the freeing of Nelson Mandela and the inaugural democratic elections is a 1992 change in legislation that has been described in literature as "the quite extraordinary liberalizing of credit provision" (James, 2012, p. 24) The Usury Act of 1968, mentioned above, was amended to remove the cap on interest rates charged on low value

loans despite the fact that the previous decade had already showed a remarkable increase in levels of indebtedness due to pent up demand (Kirsten, 2006).

With the regulatory amendments made in 1992, the micro lending industry took off releasing the upward pressure of latent demand and lending increased rapidly to reach nearly R15 billion in 1999 (Parliamentary Monitoring Group, 2000), fuelled by extraordinary consumer aspiration and peer pressure (James, 2012). The market also saw an increase in aggressive marketing campaigns with many making unsolicited credit offers to people previously disadvantaged by the banking system (James, 2012) and causing first time and middle-income credit users to take on debt beyond their means (Kelly-Louw, 2009). The market was ripe for abuse including the withholding of identity and bank cards (James, 2014) as an exhibition of absolute control. The newly created credit system created an imbalance in power and a systemic problem, with the proliferation of credit availability in conjunction with the streamlining of efficient collections leading to the entrapment of black South Africans (James, 2014). To address this, a number of regulatory improvements were made starting in 1999 through the Micro Finance Regulatory Council (Kelly-Louw, 2009; Ssebagala, 2014) requiring micro-lenders with above cap rates to apply for a certificate to operate, and in 2002 all providers of micro-credit were compelled to sign-up to the National Loans Register (Kirsten, 2006). Despite these initiatives, in a hearing of the Parliamentary Monitoring Group in 2003, it was noted in the minutes for public record that “there had been more than a fifty-four per cent increase in judgements against debtors during the past eight years” (Parliamentary Monitoring Group, 2003, para. 4).

Twelve years into democracy, in June 2006, the outdated legislation of the Usury Act (73 of 1968) and the Credit Agreements Act (75 of 1980) was finally superseded by the National Credit Act (NCA) which was instituted with a mandate of fairness, regulation and recourse in relation to the standards in the granting and marketing of credit, as well as providing management mechanisms for over-indebtedness (The Banking Association South Africa, 2008). This legislation, currently in force, is described by scholars and media as strong and weak at the same time (Ssebagala, 2016) as it promotes the prevention of over-indebtedness but is unable to address the consequences of consumers slipping into a vulnerable state.

Today, 15 years on from the establishment of the NCA, half of all consumers in the formal credit market are three or more months behind in their debt repayments (“SA Consumers in for a Rough Ride in 2020,” 2019). Literature points to the possible reasons for this being that credit regulation typically favours the lender (Bar-Gill & Warren, 2008; James, 2014; Ssebagala, 2016), focusing on ensuring the sustainability of the creditors through claim fulfilment and not on rehabilitating or proactively supporting the consumer and their ability to self-manage

(Ssebagala, 2016). Regulation should be more balanced and recognise the "interdependence and mutually reinforcing character" of both lender and borrower (James, 2012, p. 24) but within the legal bounds of regulation, lenders continue to leverage their data, knowledge and financial resources to drive the take-up of credit, with very limited knowledge of the personal context of consumers. The factors used in determining the viability and risk of the borrower are mostly related to how you have managed your credit payments in the past (ClearScore, 2017) and in general, completely ignore the situational context and psychology of the borrower (Cohen, 2007; Thomas et al., 2005). Recognising this, the South African government instituted The National Credit Amendment Act 7 of 2019, published in Government Gazette 42649 of 19 August 2019. The intent of this Act is to redress the problem of insolvency measures being inaccessible to certain consumers because: previous measures were imbalanced in favour of the benefit of lenders; or the costs involved in these insolvency management measures were prohibitive to over-indebted individuals with insufficient income. The Act recognised that for some consumers it is just not "economically viable for them to afford a debt counsellor and it is therefore an insurmountable challenge for them to manage or improve their financial position" (South African Government, 2019, p. 4). It also addresses "unjustified and unfair discrimination on socio-economic grounds, regulating that all consumers must be afforded protection through fair, transparent, sustainable and responsible processes" (South African Government, 2019, p. 4).

Table 1 below summarises the previously fragmented legislation and the changes made to it over time to deliver the National Credit Act in 2006.

Table 1 - Evolution of the South African credit industry

DATE	REGULATION	PURPOSE AND SCOPE
1964	Sale and Services Matters Act (No. 25 of 1964)	Regulation designed to safeguard those party to lay-by agreements. The legislation disallowed the charging of interest and capped the period of the agreement at 6 months.
1968	The Usury Act of 1968	Primary legislation regulating the industry in relation to charges against credit and necessary disclosure, covering agreements between R10,000 and R500,000.
1980	Credit Agreements Act, 75 of 1980	Introduced the concept of 'cooling-off' into the credit market and prescribed a fair legal process for repossession of goods bought on credit given payment default.
1981	The Alienation of Land Act of 1981	Regulation of the sale of land and protection of those involved in land-based transactions, requiring formal written arrangements and sequencing of registration prior to transfer of any funds. Additional disclosures were also defined so as to protect the purchaser in such agreements.
1992	First Exemption Notice to the Usury Act (GN 3451 of 31 December 1992)	Lending of amount less than R6,000 were excluded from the Usury Act with this legislation and this led to abuses and malpractices by micro-lenders including the withholding of consumer documentation and unfair practices in the collection of outstanding debts.
1999	Micro Finance Regulatory Council and Exemption Notices 1999	Lenders, through this legislation, were allowed to charge uncapped amounts against credit arrangements as long as they were signed up with the Micro Finance

		Regulatory Council (MFRC). Principles for how micro operators should conduct business were also defined in this document.
2002	National Loans Register	All providers of micro-credit were compelled to sign-up to the National Loans Register to better manage the conduct of micro-credit providers.
2005	National Credit Regulations (published in Government Gazette 28619 of 15 March 2006)	Aimed at addressing the significant problems which had arisen in the industry that were not being adequately addressed by previous regulation. Specifically in relation to poor and irresponsible lending practices, excess assignment of debt to some consumers and then limited availability of credit for other consumers. A mandate of fairness, regulation and recourse in relation to the standards in the granting and marketing of credit, as well as providing management mechanisms for over-indebtedness.
2019	The National Credit Amendment Act 7 of 2019 (published in Government Gazette 42649 of 19 August 2019)	To address certain deficiencies in the National Credit Act of 2005, giving greater control and capacity to the National Credit Regulator to support consumers with debt counselling and investigate whether an agreement is reckless.

Source: Candidate developed based on the itemised legislative sources and various online forums and sources including (Eugene, 2007)

As a consequence of the history described, the credit market in South Africa today is made up of both formal and informal sectors. Within the formal sector unsecured loans include credit cards, retail accounts and unsecured credit, while secured loans are made up of mortgages and vehicle asset finance. The formal, legal credit sector was worth R2tn as at the end of 2019 with around 6000 providers registered with the National Credit Regulator and was, at the time, growing at 1.8% quarter on quarter (Wonga, 2017). While the volume of unsecured products far outweighs secured lending, unsecured loans only account for 27.9% of total formal lending. This research focused on the formal, legal market only, where there are 8,361 lenders of formal credit (National Credit Regulator, 2021) but the loan book value is concentrated amongst 30 large-scale providers (B. Dekker, personal communication, April 24, 2020). Beside the lender and the consumer there are other important influencers in the credit system, namely the National Credit Regulator, the National Consumer Tribunal, Credit Bureaux and Debt Counsellors. The two former entities are called “Guards of the Market” as they are government entities but have limited legal power (Schraten, 2020, p. 83).

There are the 11 credit bureaus registered under the National Credit Act, 34 of 2005 that are overseen by the National Credit Regulator and these entities are classified by the Credit Bureau Association (Credit Bureau Association, 2021) into one of three categories: Full members, Intermediate members and Reseller members.

Although the barriers to entry in setting up a credit bureau are relatively low, it is a complex business as described so well by Schraten (2020): “Credit bureaux had to deliver figures that allowed a calculation of the future ability of prospective borrowers to repay a loan, which were compiled from information from the past, and had to be applied by credit providers to finalize a contract in the present” (p. 85). Besides this information asymmetry, the legislation put in

place to help consumers through mechanisms like debt counselling, is limited. Debt counselling was introduced as a part of the National Credit Act (South African Government, 2006) to support over-indebted consumers through debt review services like restructuring advice that is delivered by members of the Debt Counselling Association of South Africa, DCASA (South African Government News Agency, 2020). The influence of debt-counsellors is limited to reactive solutions because the legal framework defined that "over-indebtedness was a pre-condition of reckless lending" (Schraten, 2020, p. 89). Technically therefore, poor lending practices do not affect those that are not over-indebted. Debt counsellors and indeed the legal system therefore have no pre-emptive influence, beyond the removal of unlawful interest and fees on principal amounts, to remove the original credit obligations arising from reckless lending, confirming that the locus of control in the credit system is firmly in the hands of the lender (Schraten, 2014, 2020). Sensitive appreciation of the whole credit system is required; however, in lieu of fundamental regulatory change and therefore lender behaviour, the most effective way to reverse the downward, self-reinforcing spiral to greater indebtedness is through consumer self-efficacy. We need to find ways to positively influence consumer psychology and therefore credit behaviour and make it attractive and profitable for the lenders of credit to actively support the enablement of consumer capability in relation to credit.

In summary, in 1994, South Africa not only opened its voting to the whole population but also a range of previously restricted categories of goods and services. The swell of consumer demand and resulting aspiration for ownership of previously inaccessible items seems positive on the surface and might tick all the boxes that satisfy the broader definition of 'inclusion' but underneath it paradoxically extends the "history of exploitation of South African black people" (James, 2012, p. 21). It opened the door widely for all to access the credit system but once within the system, made it difficult for one to exit, leaving the South African consumer vulnerable to indebtedness, and at the mercy of rapidly improving technologies, misguided influence and, at times, unethical behaviour of lenders (James, 2014).

2.4 Hypothesis development

This study aimed to prove or disprove four hypotheses, including two sub-hypotheses as listed in the theoretical model pictured in Figure 2 and Table 2 below:

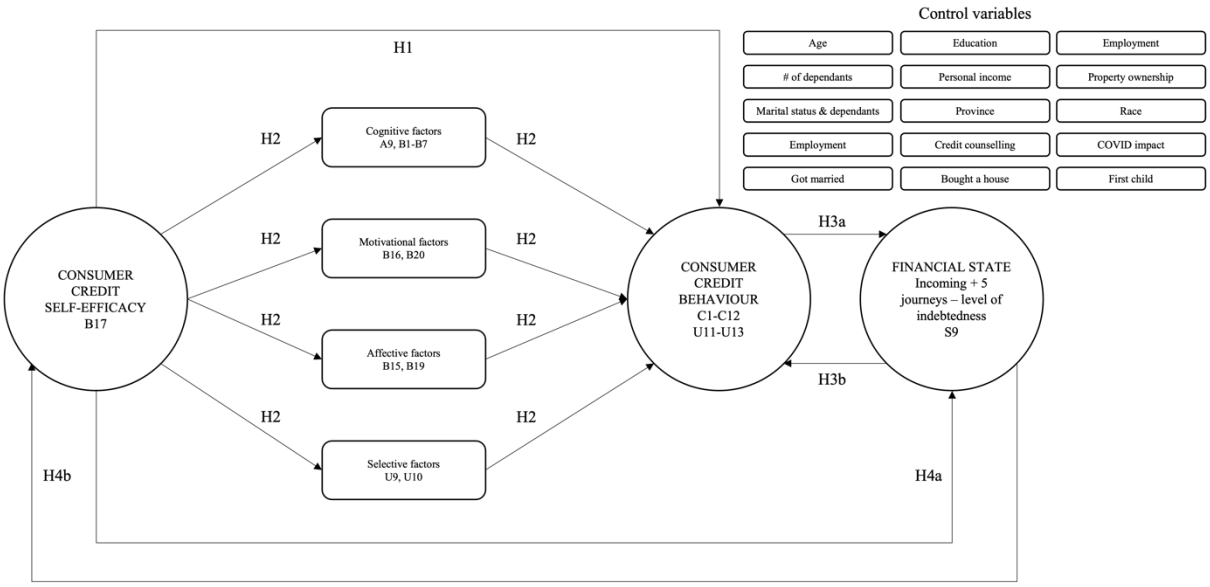


Figure 2 – Theoretical model and hypotheses

A*, B*,C*, U* correspond to question numbers in the research instrument in Appendix 6

Table 2 – Hypotheses for the research study

H#	Hypothesis Description
H1	Credit self-efficacy affects credit behaviour
H2	Cognitive factors, motivational factors, affective factors and selective factors mediate the effect of credit self-efficacy on credit behaviour
H3a	Credit behaviour affects financial state (level of indebtedness)
H3b	Financial state (level of indebtedness) affects credit behaviour
H4a	Credit self-efficacy affects financial state (level of indebtedness)?
H4b	Financial state (level of indebtedness) affects credit self-efficacy?

Hypothesis 1 in the model depicted in Figure 2 above, is that credit self-efficacy has a direct effect on consumer credit behaviour. These hypotheses are based on findings from other studies that the link between the level of consumer debt and the control of self is valid (Bandura, 1997; Celsi et al., 2017; Gathergood, 2012; Pereira & Coelho, 2019) and that those with low levels of this control have more debt (Achtziger et al., 2015).

Hypothesis 2 is that the various psychosocial factors introduced earlier mediate the effect of credit self-efficacy on credit behaviour. This is informed mainly by the writings of Bandura on self-efficacy theory (Bandura, 1977) as well as the financial self-efficacy scale developed by Lown (2011). Many other scholars speak to the importance of understanding psychosocial factors in driving financial behaviour as cited in the above literature review.

Very little literature exists on Hypothesis 3, that Credit Behaviour and Level of Indebtedness have a recursive relationship, and where it does exist, it is qualitative in nature. However, it was useful in highlighting this as an area which requires further exploration and quantification.

Some scholars acknowledge the self-reinforcing cycle of debt in that "the more debt people have, the more likely they are to think about money and to show willingness to use credit cards" (Livingstone & Lunt, 1992, p. 125). Also, Rick et al. (2008) identify the mindset differences between those who spend money freely and those who hold onto their money and how spending behaviour differs depending on emotions experienced in spending moments.

Hypothesis 4 is that a recursive relationship exists between Credit Self-efficacy and Level of Indebtedness and is thus split into two sub-hypotheses: Hypothesis 4a is that credit self-efficacy affects levels of indebtedness and Hypothesis 4b is that the level of indebtedness affects credit self-efficacy in return. Many scholars speak of the damaging, almost drug-like effect that financial state has on consumers' ability to cope and navigate their way through the psychological and physical effects of indebtedness (Tokunaga, 1993).

2.4.1 Mediating factors to self-efficacy and their relationship with credit behaviour

If debt both influences and is influenced by the inter-relationship between psychological and behavioural variables (Lea et al., 1995b) and is a psychological state (Greenberg & Shapiro, 1971), and if attitude to money can be linked to people's ability to integrate socially (Engelberg & Sjöberg, 2006), then we need to understand the various mediating factors and how they can be managed by consumers to exercise better control in moments of credit decision-making. Money has been described as "generalized conditioned reinforcement" (Furnham, 1984, p. 501) and so is incredibly influential in affecting our consumer circumstance. It follows that over-indebtedness should be managed like an addiction because addictions perpetuate self-destruction (Tokunaga, 1993) and so the generative capability of self-efficacy can be critical in managing debt, like one would manage an addiction (Gist & Mitchell, 1992). More than knowledge, self-efficacy is the application of a variety of mental resources and practically learned skills which inform how we set goals and manage our choices and self-control in relation to these goals (Achtziger et al., 2015).

Literature mostly speaks to the mediating factors of self-efficacy without creating a direct link to the information inputs in the Bandura model or the cognitive, motivational, affective and selective mediating factors of self-efficacy (Bandura, 1997). For example, Gathergood (2012) identifies the relationship between financial literacy, self-control and over-indebtedness while talking to the importance of mental and utility skills, recommending that attitudinal, motivational and personal values are important. Other authors identify the inadequacy of financial literacy education in helping consumers (Celsi et al., 2017) which is exacerbated by the fact that as consumers we do not always have all the information we require especially

when we as human beings are not completely rational in our decisions and choices (Bar-Gill & Warren, 2008). There also appears to be a lack of clarity and distinction between definitions and terms used by scholars, for example financial literacy and financial capability as often used interchangeably and when there is a distinct difference between these factors: financial literacy is "what is known" and financial capability is "what is done in context" (Spencer et al., 2015a, p. 11). As control of our financial choices is contextual, specifically credit, we must consider that many credit-based decisions are made in the moment or in moments of need.

While consumer control self-mediates debt (Nyhus & Webley, 2001) and it has been confirmed that those with low levels of this control have more debt (Achtziger et al., 2015), our levels of efficacy vary depending on many mediating psycho-social factors. Lown's (2011) 6-item FSES showed correlations between self-efficacy and consumer financial behaviour and identified recommendations as to how to support those consumers with low self-efficacy in order to improve their financial capability. However, this study did not identify causal factors of low self-efficacy and how these factors could mediate self-efficacy itself. Additionally, Lown's research is based on a sample structure of mostly well-educated, Caucasian (94%) university employees which is not representative of the diversity of a South African population (Lown, 2011).

Aiming to address the shortfall in available research on factors influencing credit self-efficacy, this study identifies the mediating nature of psychosocial factors, and the degree to which credit self-efficacy along with these mediating factors influences consumer credit behaviours and therefore a positive or negative debt journey. To do this effectively, a wide variety of scales and questions were used in the research instrument, and to identify these a more specific review of the literature was undertaken under the headings below:

2.4.1.1 Cognitive mediators

Bandura (1997) captures how our "anticipatory cognitive motivators" affect our performance and that this anticipation is influenced by forethought in relation to our cognised goals and our expectation of the outcome but are also influenced by retrospective reasoning in relation to the perceived cause of our success or failure (p. 126).

The research on the intellectual application of knowledge in relation to money is wide, from basic arithmetic understanding to a detailed understanding of the technical workings of complex financial products. Literature speaks of financial education (Sherraden & Grinstein-Weiss, 2015), financial literacy (Disney & Gathergood, 2013; Limbu & Sato, 2018; Liu & Zhang, 2021), money management (Hoffmann & McNair, 2019) and even "double-entry mental accounting theory" (Prelec, D. Loewenstein, 1998, p. 4). Some scholars acknowledge

the self-reinforcing cycle of debt in that "the more debt people have, the more likely they are to think about money and to show willingness to use credit cards" (Livingstone & Lunt, 1992, p. 125). In this sense it is not poverty itself as a demographic variable but the "psychology of poverty" that affects debt as we are all poor in time and mental capacity and are therefore taxed with everyday decision-making that perpetuates poverty, independent of social class (The World Bank, 2015, p. 81). While they might have the right intentions to support consumer cognitive capability, financial education, literacy programmes credit and debt counselling, as they are currently delivered, do not work to improve money management (Richins, 2016; Schicks, 2014).

The main aims of factors that could act as cognitive mediators in relation to credit self-efficacy include perceived self-efficacy, level of financial literacy, level of education, self-assessment of financial capability and our previous experience with credit and the resulting consequence of those experiences. These concepts are often conflated by scholars but are undoubtedly inter-related as financial literacy improves financial confidence and self-control and curtails risky credit behaviour (Liu & Zhang, 2021).

Financial capability is defined by the UK's Money Advice Service as "a person's ability to manage money well, both day to day and through significant life events, and to handle periods of financial difficulty" (Critical Research, 2018, p. 5). This subjectivity is about personal context, and an appreciation of how one's own sense of self might positively or negatively affect one's credit decisions and behaviour. Some scholars advise that educators should support consumers in understanding their own personality traits to improve their decisions in relation to managing their debt (R. Wang et al., 2017). However, this is more easily said than done as borrowers find themselves in one of many different, and continually changing life-stage circumstances. These different circumstances are identified by various scholars and include personal circumstances like level of affordability or a good or bad credit history (Thomas et al., 2005); psychological state including stress (Ferreira & Scaraboto, 2016; Forlicz & Rólczyński, 2019; Liu & Zhang, 2021) number of credit instruments (Limbu & Sato, 2019) or environmental circumstances that affect self-regulation (Baumeister, 2002). Many have proven that financial capability is the most critical factor in determining a good or bad financial decision because it is a concept that considers both individual as well as other wider influences (Hoelzl & Kapteyn, 2011); the complexity of financial decisions and a consumer's stage of life requires it (Sherraden & Grinstein-Weiss, 2015); and self-control (Gathergood, 2012) and psychological orientation influence it (Shephard et al., 2017). These factors differ from person to person and their influence on self-efficacy, credit behaviour and financial state, often depends on the moment in time in which a consumer considers credit as an option. Kamleitner

et al. speak of these moments as happening before, during and after credit acquisition, and as such identify four psychological perspectives on the use of credit as either a "reflection of the situation", "a reflection of the person", "a cognitive process", or "a social process" (Kamleitner et al., 2012, p. 3). In a study undertaken by Shephard et al. (2017), the inclusion of consumer psychology measures into an assessment of financial capability explained two times the difference in consumer behaviour, relative to the influence of their understanding and views related to spending alone.

2.4.1.2 Motivational mediators

When we set ourselves clear and specific goals that challenge us, this enhances our motivation. We use our own internal control system to enable us to, with forethought, judge our own ability to fulfil specific goals and adjust our actions and reactions accordingly (Bandura, 1997). Literature identifies consumer attitude toward money, goal setting and self-identity as being important factors to consider more than financial knowledge (Rick et al., 2008). Staying out of debt is not a function of economics alone and social and psychological factors have a role to play. The attitude people have toward money is a psychopathological issue (Yamauchi & Templer, 1982) making indebtedness both an "aversive psychological and physiological state" (Greenberg & Shapiro, 1971, p. 290). Rick et al. (2008) speak about the "pain of paying" (p. 767) where impulsive and indulgent behaviours lead to unplanned purchasing and goal misalignment. Celsi et al. (2017) identify that those with debt repayment challenges are poor at setting goals and managing their own self-regulation and will power.

The management of our motivations is important across many different consumer circumstances in relation to financial activities be they big or small decisions (Spencer et al., 2015a). It is the application of a variety of mental resources and practically learned skills as an "important precondition of goal striving which in turn requires self-control" (Achtziger et al., 2015, p. 143).

2.4.1.3 Affective mediators

Affective mediators are the feelings we have in relation to our expectation of reaching or not reaching the material or social outcomes we have set in our minds (Bandura, 1997). Existing literature focuses on four areas in this regard: anxiety, materialism, over-optimism, mood and social standing or image.

When you're anxious about money you buy more compulsively, contradicting the intent of indulgent, brand image driven, consumer spending as an emotional outlet to realise calm – instead, it has the opposite effect, creating new anxiety about financial matters and realises a situation where those in debt are less cool-headed in how they cope (Japutra et al., 2019;

Livingstone & Lunt, 1992; Roberts & Jones, 2001; Tokunaga, 1993). Financial stress creates anxiety which negatively affects credit behaviour when there are low levels of literacy (Liu & Zhang, 2021) and hence there is a self-reinforcing cycle.

Materialism affects debt more than one's ability to manage one's money (Gardarsdóttir & Dittmar, 2012) and is driven by a belief that material goods can improve one's self-identity (Richins, 2016). Consumers show strong emotions in anticipation of the purchase as the desire for a product delivers pleasure greater than the use of the product itself (Richins, 2016) experienced through what Celsi et al. call "temptation episodes" (2017, p. 84).

Social class too has spiral, self-reinforcing characteristics where the level of a consumer's sense of relative self-identity is raised with every new signal of social standing (Roberts & Jones, 2001), becoming a "competitive and comparative process" and driving the associated and incremental rise in desirability of products (Pirog & Roberts, 2007, p. 72). Consumers develop an idea of their "possible selves" and where they fit, relatively speaking, in social standing (Bateman, 2019, p. 7) with the "display of material goods" (Roberts & Jones, 2001, p. 218), confirming the interdependence between social standing and power (Henry, 2005). Consumer attitudes toward material goods are therefore strongly related to social status (Pradhan et al., 2018).

Interestingly, those comfortable in their social standing have less likely to borrow money to acquire goods to prove their worth (Livingstone & Lunt, 1992) but advertisers attempt to disrupt this by creating psychological unease (Cohen, 2007), fuelling credit take-up by driving the affective mind and the disparity between reality and utopia in respect to self-identity (Japutra et al., 2019) and a consumer's relative position in the world (Roberts & Jones, 2001). It has been identified that being middle of the road is better when it comes to indebtedness, as those who are over-optimistic act irrationally (Puri & Robinson, 2007), even making choices which are inappropriate for their needs (Yang et al., 2007), with unrealistic expectations of the future (Spencer et al., 2015a) and an elevated self-esteem (Yang et al., 2007). Although buying more things does not bring happiness (Richins, 2016), consumers continue to spend indulgently as a form of personal entitlement and mood repair (Celsi et al., 2017; Pirog & Roberts, 2007) so as to make them feel better about themselves. Interestingly, Rook and Fisher (1995) identify that going against one's goals or prevailing normative judgement actually stimulates hedonic arousal and increases the likelihood of purchase. Over-optimism is thus closely tied to impulsivity which realises further indebtedness (Ottaviani & Vandone, 2011) as impulsive spenders are more likely to choose products which are inappropriate for their needs (Gathergood, 2012) and their impulsivity pushes them to borrow to unsustainable levels

(Frigerio et al., 2020). Impulsivity and anxiety as a combination of factors can lead to "risky indebtedness" (Abrantes-Braga & Veludo-de-Oliveira, 2020, p. 2223).

The importance of emotion and psychology in determining indebtedness has been noted but there is also a proven correlation between emotional stability and lower money orientation in relation to power, status and prestige as higher levels of emotional intelligence deliver "a greater sense of economic self-efficacy" (Engelberg & Sjöberg, 2006, p. 2027). Credit card holders see money as a means to improved public image (Khandelwal, Kolte , Veer and Sharma, 2022) and so greater balance in self-identity is required to improve self-regulation (Bateman, 2019). Self-regulation in turn plays a central role in "goal setting, self-monitoring, and/or will-power and therefore behaviour change" (Celsi et al., 2017, p. 83). It is suggested by some that mindfulness should therefore be used to promote better use and management of credit (Pereira & Coelho, 2019).

2.4.1.4 Selective process mediators

As consumers we also have a choice as to the environment in which we will end up making decisions and these selections might have short or long-term consequences given that we are products of our environment (Bandura, 1997). Previous research on consumer influence, in this regard, is generally focused on consumers' lack self-control and not on imprudent lending practices (Cohen, 2007). The blame of indebtedness is often attributed to "a failure of self-government" (Marron, 2012, p. 418), and while the link between the level of consumer debt and the control of self is valid (Gathergood, 2012), it is not able to explain different levels of indebtedness (Livingstone & Lunt, 1992). The unfortunate stereotype, misplaced in our times, still prevails where the debtors who are seen as "feckless or unscrupulous people" still prevails (Hartropp et al., 1987 as cited by Livingstone & Lunt, 1992, p. 114).

Many lenders leverage their access to credit bureau data (Thomas et al., 2005), and their related marketing (James, 2012) to trigger psychology-led behaviour in consumers, promising them a better life (Richins, 2016). These lenders have the ability to portray status through their communications (Roberts & Jones, 2001) and thus create an economy of need, leading to "desperate over-indebtedness" where consumers, once in the system, cannot fight the gravity of indebtedness that is so efficiently legislated (Schraten, 2020, p. 172).

Examples of factors that could act as selective process mediators in relation to credit self-efficacy are: the environment in which we choose to do our shopping, the lender relationship we choose based on our brand affinity or relationship or the decision we make to take up a credit offer based on promotional advertising and other such 'in the moment' factors (Khalil & Raza, 2018).

2.4.1.5 Consumer credit behaviours

Literature identifies that self-control does mediate debt (Nyhus & Webley, 2001), those with low levels of self-control have more debt (Achtziger et al., 2015) and psychosocial factors affect levels of debt (Mewse, 2010). Financial literacy improves financial confidence as well as self-control and curtails risky credit behaviour while financial stress negatively affects credit behaviour when there are low levels of literacy (Liu & Zhang, 2021).

Rick et al. identify the mindset differences between "Tightwads" and "Spendthrifts" and that spending behaviour differs depending on emotions experienced in spending moments, as well as at the point of payment (2008, p. 767).

Many scholars include consumer credit behaviour within a broader assessment of money management (Xiao et al., 2006) but a more specific definition and understanding of credit behaviour is proposed in this research. Kamleitner et al. (2007) categorise credit behaviour into three specific phases: processes that occur before a consumer acquires credit, processes at the moment of credit acquisition and processes post credit acquisition–- within their process model they identify eight consumer processes in relation to credit from need, desire, assessment of type of good, decision process on alternative goods or financing, a resulting choice (either abandonment, delay or intention to buy), financing choice, credit decision and then behaviour in the payback period. Understanding consumer segments and their journeys and attitudes in respect to credit is critical for credit providers to appreciate so that they can customise products accordingly (Abrantes-Braga & Veludo-de-Oliveira, 2020).

Table 3 below summarises the empirical literature referenced in the literature review and used as inputs to the construction of the measurement model that follows.

Table 3–- Empirical literature

THEORY	REFERENCES
Measuring Self-efficacy	(Bandura, 2015; Celsi et al., 2017; Gist & Mitchell, 1992; Lown, 2011)
Mediating Factors to Self-efficacy	(Achtziger et al., 2015; Bandura, 2015; Bar-Gill & Warren, 2008; Celsi et al., 2017; Engelberg & Sjöberg, 2006; Furnham, 1984; Gathergood, 2012; Gist & Mitchell, 1992; Greenberg & Shapiro, 1971; Lea et al., 1995b; Lown, 2011; Nyhus & Webley, 2001; Spencer et al., 2015b; Tokunaga, 1993)
Cognitive Factors	(Atlas et al., 2019; Bandura, 2015; Critical Research, 2018; Disney & Gathergood, 2013; Fernandes et al., 2014; Ferreira & Scaraboto, 2016; Forlicz & Rólczyński, 2019; Gardarsdóttir & Dittmar, 2012; Gathergood, 2012; Hoelzl & Kapteyn, 2011; Hoffmann & McNair, 2019; Kamleitner et al., 2012; Limbu & Sato, 2019; Liu & Zhang, 2021; Livingstone & Lunt, 1992; Prelec, D. Loewenstein, 1998; Richins, 2016; Rick et al., 2008; Riitsalu & Murakas, 2019; Schicks, 2014; Sherraden & Grinstein-Weiss, 2015; The World Bank, 2015; Thomas et al., 2005; R. Wang et al., 2017)
Motivational Factors	(Achtziger et al., 2015; Bandura, 2015; Bateman, 2019; Celsi et al., 2017; Greenberg & Shapiro, 1971; Lea et al., 1995b; Livingstone & Lunt, 1992; Richins, 2016; Rick et al., 2008; Spencer et al., 2015b; Yamauchi & Templer, 1982)
Affective Factors	(Abrantes-Braga & Veludo-de-Oliveira, 2020; Bandura, 2015; Bateman, 2019; Celsi et al., 2017; Engelberg & Sjöberg, 2006; Frigerio et al., 2020; Gardarsdóttir & Dittmar, 2012; Gathergood, 2012; Henry, 2005; Japutra et al., 2019; Khandelwal et al., 2022; Liu & Zhang, 2021; Livingstone & Lunt, 1992; Ottaviani & Vandone, 2011; Pirog & Roberts, 2007; Pradhan et al., 2018; Puri & Robinson, 2007; Richins, 2016; Roberts & Jones, 2001; Rook & Fisher, 1995; Tokunaga, 1993; Yamauchi & Templer, 1982; Yang et al., 2007)
Selective Factors	(Bandura, 2015; Cohen, 2007; Gathergood, 2012; James, 2012; Khalil & Raza, 2018; Livingstone & Lunt, 1992; Marron, 2012; Richins, 2016; Roberts & Jones, 2001; Schraten, 2020; Thomas et al., 2005)
Consumer Credit Behaviours	(Abrantes-Braga & Veludo-de-Oliveira, 2020; Achtziger et al., 2015; Critical Research, 2018; Kamleitner & Kirchler, 2007; Liu & Zhang, 2021; Mewse et al., 2010b; Nyhus & Webley, 2001; Rick et al., 2008; Xiao et al., 2006; Yamauchi & Templer, 1982)

2.5 Conclusion of the literature review

While there are many possible avenues within the formal and legal credit system to explore, this research study focused on a detailed appreciation of the demand side and specifically consumer psychology and consumer credit behaviour in relation to their levels of indebtedness or financial state. Literature on the demand-side reveals wide-ranging perspectives on indebtedness. Everyday assumptions that demographic and economic factors are directly associated to a greater propensity to indebtedness have been disproven (Lea et al., 1993; Yamauchi & Templer, 1982). Indebtedness is also unrelated to certain contextual factors within these demographics like the size of one's family, one's position in society or one's level of education (Livingstone & Lunt, 1992). Other sources are also explicit on this topic stating that there is empirical evidence that poor money management is not informed by "deviant values or a culture of poverty particular to poor people" (The World Bank, 2015, p. 81). This contradicts the most obvious assumption people make, that indebtedness is a product of "profligate" household consumption (Cohen, 2007, p. 59), driven by materialism

(Gardarsdóttir & Dittmar, 2012), or the effects of poor money or debt management and a lack of preparation for unexpected shocks (Bridges et al., 2008). Instead, many identify that a highly influential factor affecting indebtedness is a consumer's level of education and financial literacy (Disney & Gathergood, 2013). However, literacy programmes that are meant to support consumers, are criticised for their overly rational nature (Richins, 2016) and their lack of focus on the soft skills that create consumer confidence (Fernandes et al., 2014), and make them impotent in their ability to improve financial capability through behaviour change (Lown, 2011).

Scholarly work in the area of self-efficacy and consumer credit has focused, directly or indirectly, on how self-efficacy is able to influence levels of consumer indebtedness through either: the control and management of emotions and therefore response to temptation (Celsi et al., 2017), values-based judgments (Hoffmann & McNair, 2019), the management of credit abuse as an addiction (Tokunaga, 1993), improved emotional intelligence (Engelberg & Sjöberg, 2006), the removal of behavioural hurdles (Spencer et al., 2015b), the improvement of self-control and management of compulsive buying (Achtziger et al., 2015), the appreciation of personal transformation expectations (Richins, 2016) and the level of personal engagement with active management of indebtedness (Mewse et al., 2010b).

In Wired for imprudence, Spencer et al. identify seven human characteristics that undermine financial capability: "cognitive overload, empathy gaps, optimism and overconfidence, instant gratification, harmful habits, and the influence of social norms" (2015a, p. 4). Flores and Vieira (2014) establish that the values people have in relation to money, their level of materialism and their perception of risk affects their levels of indebtedness.

It was the concern of this research to assess the capability of consumers in relation to their personal, situational and environmental context, to leverage self-efficacy to affect their level of indebtedness positively or negatively. The nature of the relationship between the highly complex interdependent variables within self-efficacy varies in intensity and level of exchange, depending on an individual's life-stage and personal circumstances within it. While some might see these capability characteristics as dials that can be controlled by the consumer, and be turned up and down at will, there is evidence to prove that negative circumstances in relation to monetary capacity are a "cognitive tax" on a consumer's cognitive capacity, leading to poor money management (The World Bank, 2015, p. 81). We need to prevent this "debilitating, downward spiral" by better understanding the self-efficacy and personal behaviour of credit consumers (Tokunaga, 1993, p. 287).

Indebtedness is thus a complex topic, given the number of actors in the credit system and their ability to deploy and leverage the above-mentioned factors to positive or negative effect. The interdependencies between these factors leaves it difficult to determine cause and effect (Livingstone & Lunt, 1992) and therein lies the paradox of credit (referring to credit cards in this case) "as both a stimulus to spending as well as an especially disagreeable form of debt" (Prelec, D. Loewenstein, 1998, p. 23). The nature of credit and the observed increase in levels of consumer indebtedness over time touch firmly on a number of complex issues, including equality, inclusion, and morality. While credit is important in sustainable consumption (Cohen, 2007) the system needs systemic recalibration to ensure that first-time credit agreements do not result in a negative trajectory to greater indebtedness for the aggregate base of consumers.

This research based its views on social cognitive theory (Bandura, 2012) and the psychological power of human agency (Bandura, 2006) as the antidote to the power imbalance in the credit system. It aimed to prove that: at the moment of making a credit decision, consumers can have direct and intentional influence on the outcome of their position on the ladder of indebtedness and therefore their financial state. This requires understanding of how psychosocial factors mediate credit behaviour as a dependent variable but also how credit behaviour then mediates a consumer's level of indebtedness.

> "In the final analysis the value of a psychological theory must also be judged by the power to change people's lives for the better."
> (Bandura, 1997, p. viii)

3 CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research philosophy that is foundational to the research design. The research design is explained with an overview of the sample and sampling methodology, the mechanism of data collection, the measurement variables, constructs and research instrument. The approach and analytical techniques used to measure these variables and constructs is then described in detail including a review of structured equation modelling. A summary of the results of a pilot study undertaken prior to the main fieldwork and the related decisions made are then presented. This chapter closes with a description of the theoretical model, a review of criteria and limitations of the study and finally, ethical considerations.

3.2 Research philosophy

The research philosophy for this study was based on a post-positivist worldview as it is expected that there are factors within the "dynamic construct" (Gist & Mitchell, 1992, p. 184) of self-efficacy that determine positive or negative outcomes in relation to consumer indebtedness. As a deterministic philosophy, it proposes cause and effect (Creswell, 2009) and employs deductive reasoning (Singh, 2007). As such, this research proposes to augment the model of self-efficacy (Bandura, 1977) and the functional properties of perceived self-efficacy (Bandura, 2012), to identify the psychosocial factors that, in their influence of self-regulation of consumer credit behaviour, will invert the bad debt ladder (negative credit journey) and enable consumers to move themselves to a healthier financial state (positive credit journey).

A post-positivist view with deductive reasoning is appropriate, as the identification of direct causal links in this complex social existence, and the related decisions consumers make, is near impossible (Ryan, 2006) or as described by Creswell (2009): "absolute truth can never be found" (p. 7). For the purpose of praxis, however, it is important this research defines quantifiable, credible relationships between factors in order to inform business decision-making (Creswell, 2009).

3.3 Research design

3.3.1 Research location

This research was conducted online with respondents spread geographically across South Africa. The environment is important in that completing the survey required consumers to have internet access, thus favouring more socio-economically well-off city dwellers. The location

of each respondent was captured during the questionnaire screening process as being one of South Africa's nine provinces: Eastern Cape, Free State, Gauteng, KwaZulu-Natal (KZN), Limpopo, Mpumalanga, Northern Cape, North West and Western Cape.

3.3.2 Unit of analysis

As this study dealt with consumer credit self-efficacy and their financial state, the unit of analysis was those who have previously been approved to use credit and are therefore individuals who are consumers of credit. A consumer's use of credit could be a retail store account, a mobile operator contract, a banking product which could encompass both long-term and short-term loans, credit cards, loans from payday loan providers, for example Wonga, and loans from informal lenders for example a 'mashonisa' or a loan from a family member. The literature review in the paper thus focused on the psychology and sociology of the individual (Creswell, 2009).

3.3.3 Refining the unit of analysis

In the screening section at the front end of the questionnaire, a number of other questions were asked to provide more perspective on the unit of analysis. These included demographics like age, gender, personal income, race and province as well as a question as to whether the respondent was the household decision-maker in relation to finances. A further question was also asked to classify the nature of each respondent's credit journey which was then used to define Financial State – this is explained in more detail under Section 3.5 below.

3.3.4 Control variables

Moreover, further definition of the unit of analysis was possible with the inclusion of further questions in the first section of the questionnaire relating to demographics, credit-related activities and life events. The following variables from these additional questions were used as correlated control variables in the structured equation modelling thus helping fulfil the purpose statement of this research by understanding their relationship with the other psychosocial constructs (Creswell, 2009):

- Demographics: age, education, employment, number of dependents, personal income, property ownership, marital status and dependents, province, race, employment
- Credit status: credit counselling and the impact of Covid on credit status
- Life events: got married in past six months, bought a house in the past six months, had a first child in the past six months.

3.4 Research method

The candidate had already undertaken qualitative research out of the bounds of the MPhil programme but this was published in a report (KLA, personal communication, April 29, 2020) which was used to support the definition of the research instrument used in this study.

A quantitative approach was chosen as it was the intent of this study to understand the predictive relationships between psychosocial factors, credit behaviour and financial state. Structured, reliable and valid variables from a large sample were thus needed to ensure an objective perspective on the measurement of the relationships between the psychometric scales to support the intent of building a structured equation model (Hair et al., 2018).

The next section discusses the development of the survey instrument and the operationalisation of the various constructs to be used.

3.5 Survey instrument design

3.5.1 Identifying the constructs to be measured

The overall approach to this study was informed by secondary data analysis undertaken on a comprehensive data set of credit consumers within the South African credit market. This analysis was part of ongoing commercial projects outside of the MPhil programme which stimulated a number of critical and yet to be answered questions. Based on these questions a qualitative study was commissioned and completed in February 2020 (KLA, personal communication, April 29, 2020), also prior to beginning the MPhil programme. This research utilised in-depth interviews and focus groups to understand the feelings, attitudes, drivers and motivations of consumers in relation to credit and revealed the complexity of indebtedness, in that every consumer has their own unique circumstances and story to tell. Undertaking a full literature review as a part of the MPhil programme helped clearly define the research approach needed to answer the difficult questions arising from the qualitative work and helped define the specific constructs contained in the research instrument.

3.5.2 Measuring the identified constructs

The following identified constructs were measured based on the theoretical model depicted in Figure 2 above. It is important to note that a previously completed qualitative study conducted in February 2020 (KLA, personal communication, April 29, 2020) was used as input to guide the selection and development of the measurement constructs, in addition to the literature review contained in this paper. This research involved five in-depth, one-hour interviews, with consumers across five consumer credit segments and four focus groups across two remaining

segments (those more likely to speak in a group environment). This research revealed the language used by consumers in describing their relationship with credit as they expressed their understanding of, and attitude toward, credit and debt as well as their reasons for taking it up, the triggers in their personal debt journeys and their cognitive and emotional reactions to increasing or decreasing levels of indebtedness. This input, combined with the themes, scales and other questions emerging from the above literature review, including the principles of Bandura's self-efficacy model (Bandura, 1977; Bandura, 1997; Bandura, 2006; Bandura, 2015), was used to help structure questionnaire. Selecting the appropriate scales was important to ensure that the research instrument would produce relevant and useful statistical data (Fowler, 2014).

3.5.2.1 Credit self-efficacy

Self-efficacy is measured by asking consumers to predict their own performance (Gist & Mitchell, 1992) in relation to a very domain specific activity (Bandura, 2015) and by assessing the correlation between intention and demonstrated behaviour (Gist & Mitchell, 1992). Respondents provide a predictive assessment of their own capability on a scale that captures a comprehensive "range of challenges" (Bandura, 2015, p. 1031) which are specific to the domain in question, in this case credit. This approach is referenced by a number of other authors, one in relation to the specific theme of consumer temptation and debt management where: "emotion management, goal focus, sense of entitlement, and evoked financial identity" are used (Celsi et al., 2017, p. 92). Another in terms of financial self-efficacy where the author adapted six items from the 10-point General Self-efficacy Scale (GSES) used to measure health self-efficacy, to domain specific language thereby creating the Financial Self-efficacy Scale or FSES (Lown, 2011). These items were measured using a 4-point scale from 'Exactly true' to 'Not at all true'. See question B17 in Appendix 6.

3.5.2.2 Cognitive factors

The 13-item financial literacy scale used by Fernandes et al. (2014) was reviewed as a possible set of questions to include in the design of this research. However, its complicated US-centric language (bonds, stocks, mutual funds, 401k, mortgage) was seen to be potentially alienating and these elements were not used as constructs but rather were included in the research instrument to understand the financial literacy profile of consumers in the sample.

Consumer confidence has been found to be associated with the healthy use of credit (Atlas et al., 2019) and the UK's Money Advice Service, who run a nationally representative survey of

among adults living in the UK, include a number of measures such as financial confidence, in their research instrument (Critical Research, 2018) – therefore, the Consumer Confidence question from this study was included as a possible cognitive mediator (in the main study not the pilot) and was measured on a 5-point Likert scale. See question A9 in Appendix 6.

Two other cognitive mediation scales were constructed by the candidate based on the qualitative research conducted earlier (KLA, personal communication, April 29, 2020), and by referencing other questions related to financial capability, financial enablers, financial inhibitors, and financial well-being that were used in the above UK study (Critical Research, 2018). These inputs informed the scales used for Financial Capability and Financial Management, and both were made up of seven items, with the former using a 5-point Likert scale and the latter a standard 0 to 10 scale to describe the level of ease or difficulty that consumers have in managing their finances. See questions B2 and B7 in Appendix 6.

3.5.2.3 Motivational factors

To assess motivational factors as mediators to credit behaviour, the 29-item Money Attitude Scale (MAS) by Yamauchi and Templer (1982) and the 17-point Consumer Attitudes to Debt scale (CADS) by Lea et al. (1995b) were used in this study. Given the number of items in this question and considering the length of the questionnaire, it was decided to use a 5-point Likert scale for the MAS versus the original 7-point scale. A 7-point Likert scale, reversed per the original study, was used for the CADS. See questions B16 and B20 in Appendix 6.

The study by Yamauchi and Templer (1982) identified four second-order constructs making up the MAS: Power-Prestige, Retention-Time, Anxiety and Distrust. The CADS from Lea et al. (1995b) has a one factor structure.

3.5.2.4 Affective factors

In order to understand how affective factors influence self-efficacy and mediate credit behaviour, the 18-item Material Values Scale (MVS) from Richins (2004) and the 9-item Impulsivity scale from Rook and Fisher (1995) were used, both with a 5-point Likert scale per the original studies. See questions B15 and B19 in Appendix 6.

While anxiety is one of the four main constructs measured within the Money Attitudes Scale (Yamauchi & Templer, 1982), a 7-item candidate developed scale was also included, using a 5-point Likert scale. The items on this scale were drawn indirectly from the variety of literature sources above, as well as actual consumer responses in the qualitative research conducted in February 2020 (KLA, personal communication, April 29, 2020), covering topics of anxiety, optimism, mood and social image factors. See question B14 in Appendix 6.

The MVS from Richins (2004) is made up of three factors, namely Success, Centrality and Happiness while the Impulsivity scale has a single factor structure.

3.5.2.5 Selective factors

In this research, two questions were included under Selective Factors: one has a series of statements relating to the power and influence of the lender in the credit sign-up process, as well as a series of statements relating to the perceived influence of certain actions on one's credit score. These items were created based on consultation with experts in the credit industry and do not come from an existing academic source or an established scale (B. Dekker, personal communication, April 24, 2020).

The first scale, called Credit Score (CS), was included as it was seen to be important in the moment when credit is under consideration (hence being a selective factor). A 5-item question was developed and measured using a 5-point Likert scale and including questions like: 'Having different kinds of credit will improve your credit score'. See question U9 in the Appendix 6.

A 6-item question called Lender Power was also introduced given the influence that credit providers have in the moment of credit take-up or consideration. This question was also measured using a 5-point Likert scale and included questions like: 'You have been offered more credit than what you could afford'. See question U10 in the Appendix 6.

3.5.2.6 Credit behaviours

The Money Advice Service in the UK asks some very specific questions relating to credit behaviour in their study, including frequency of use, the handling of monthly repayment obligations, the importance of a credit rating, the extent of the burden in keeping up with repayment commitments, the incidence of consumers seeking advice and the handling of unexpected bills (Critical Research, 2018). Questions related to these behaviour topics were included in the research instrument for profiling purposes only.

In relation to Credit Behaviour, the qualitative research undertaken in February 2020 (KLA, personal communication, April 29, 2020) revealed very emotionally charged language that consumers use in regard to their credit decisions. A candidate developed set of nine bi-polar scales (18-items) across Credit Usage, Credit Repayment and Credit Default was developed using this language. See questions C1, C2 and C3 in Appendix 6.

3.5.2.7 Level of indebtedness (Financial State)

According to Bayan Dekker, a credit expert with some 30 years' experience in this field, consumers can be grouped into one of the six credit segments shown in Figure 3 below (B. Dekker, personal communication, April 24, 2020):

Figure 3 –- Segmentation of the formal South African credit market

The definition of each of the above states is described below:

- Clear: up to date and never missed a payment
- Responsible: missed one or two payments in the last three months for the first time
- Extended: difficulty keeping up to date with most payments and often in arrears
- Distressed: historically struggled to stay out of arrears and now have no plan to pay debts
- Incoming: new to credit having taken up a first credit product within the past six months
- Triumph: was once in the credit system but no longer have any debt.

Figure 4 below illustrates the different debt trajectories that a consumer could follow once they move from Incoming to the next state, depending on their initial credit behaviours, and this movement then attracts a related score from a credit bureau (B. Dekker, personal communication, April 24, 2020).

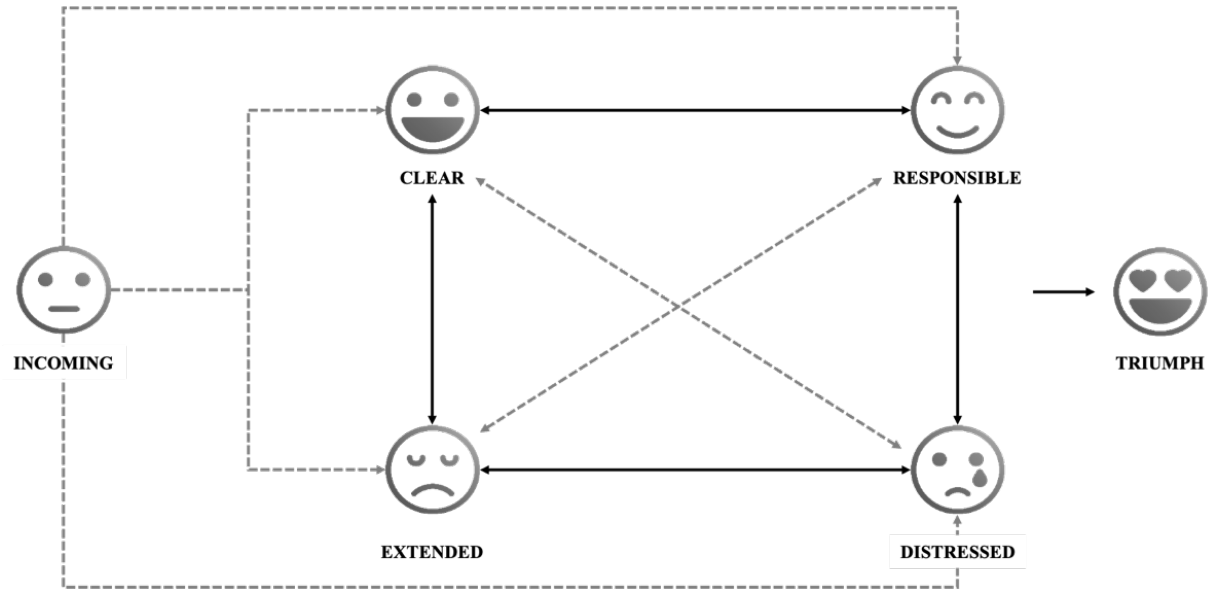


Figure 4–- The 16 Consumer credit journeys

Using the Figure 4 above to map the paths between states, one can identify 16 possible journeys that a consumer could undertake. Triumph describes someone who has left the credit system and no longer has debt and this path is not included in the 16 journeys which are detailed in Table 4 below:

Table 4– The 16 possible credit journeys

Negative Journey	Positive Journey
1. Incoming : Extended	10. Incoming : Clear
2. Incoming : Responsible	11. Responsible : Clear
3. Incoming to Distressed	12. Extended : Clear
4. Clear : Responsible	13. Distressed : Clear
5. Clear : Extended	14. Extended : Responsible
6. Clear : Distressed	15. Distressed : Responsible
7. Responsible : Extended	16. Distressed : Extended
8. Responsible : Distressed	
9. Extended : Distressed	

Respondents were classified into one of the three negative or three positive journeys, highlighted in grey in Table 3 above, by asking them to choose a statement which best suited a description of their credit circumstances. For example: 'I was previously able to keep up to date with payment of all my credit products without missing a payment, however, in the last 3 months, I have for the first time found myself missing one or two payments' was classified as Clear to Responsible. Additionally all consumers who described themselves as new to credit in the last six months were classified as Incoming in the survey analysis. All in all, a total of nine of the 16 journeys are therefore covered in this study. It is estimated by credit experts that the above journeys account for over 70% of all consumer journeys (B. Dekker, personal communication, April 24, 2020). It was necessary to limit the number of journeys in this research to keep the questionnaire and overall sample size manageable from a time to complete, time to analyse and cost per interview perspective. These journeys are therefore used as proxies to represent overall consumer financial state.

3.6 Developing the research instrument

While the literature review helped generate and select the items to measure within the survey instrument, a content analysis was also undertaken by two experienced credit professionals Bayan Dekker and Nick Moore to ensure it covered the type of questions that would be important to the development of the industry in better supporting consumer indebtedness journeys. A team of experienced research professionals, led by Jenni Pennacchini from the research company KLA who were responsible for undertaking the fieldwork, as well as an external academic adviser contracted by KLA (Dr Kerry Chipp), were consulted to review the

survey instrument and refine the questionnaire prior to the pilot test. Language in the questionnaire was phrased in the third person and was checked by a number of editors to ensure that the questions in no way contained leading, socially undesirable or socially desirable language. Attention was also paid to ensuring that the questions did not induce any specific patterns of answers or lead to bias and as additional support to this cause, questions containing lists were rotated (Fowler, 2014; Malhotra & Dash, 2016).

3.6.1 Adapting the questions

Many of the scales utilised were used directly from prior literature, others were adapted to meet the needs and domain of this specific research while a number of new scales were introduced by the candidate.

3.6.2 Order of the questions

The order of the questions in the research instrument was arranged to flow from broad demographics, to a range of psychometric constructs, followed by more specific questions in relation to credit behaviour, credit product usage and lender relationships.

3.6.3 Response format

In the main, Likert scales (both 5-point and 7-point), were utilised to measure the psychometric constructs. The set of questions relating to financial management was measured on a 0 to 10-point scale and credit behaviour was measured on a 10-point bi-polar scale .

A long list of 124 items was identified through the literature review as well as the exploratory qualitative phase undertaken prior to beginning the MPhil programme (KLA, personal communication, April 29, 2020) were used in this research and were categorised into separate constructs as listed in Table 5 below.

Table 5–- Measurement constructs in the final questionnaire

MEASUREMENT
Credit Self-efficacy
FCSE – Financial Credit Self-efficacy adapted from Financial Self-efficacy scale (Lown, 2011)
GCSE – General Credit Self-efficacy adapted from General Self-efficacy scale (Lown, 2011)
Cognitive Factors
FCON – Financial Confidence as used by (Critical Research, 2018)
FCAP – Financial Capability–- candidate designed scale based on (KLA, personal communication, April 29, 2020) Click or tap here to enter text.incorporating learning from referenced sources
FMG – Financial Management–- candidate designed scale based (KLA, personal communication, April 29, 2020) incorporating learning from referenced sources
Motivational Factors
M-A – Money Attitudes–- 29-item Money Attitude Scale (Yamauchi & Templer, 1982)
D-A – Debt Attitudes–- 17-point Consumer Attitudes to Debt scale (Lea et al., 1995b)
Affective Factors

MAT – Materialism–- the 18-item Material Values scale (Richins, 2004)
IMP – Impulsivity–- 9-item Impulsivity scale from (Rook & Fisher, 1995)
ANX–- Anxiety, Over-optimism, Mood and Social Standing based (KLA, personal communication, April 29, 2020) incorporating learning from referenced sources
Selective Factors
LP–- Lender Power–- candidate designed scale based on (KLA, personal communication, April 29, 2020)incorporating learning referenced sources
CS–- Credit Score–- candidate designed scale based on (KLA, personal communication, April 29, 2020) incorporating learning from referenced sources
Credit Behaviours
CU–- Credit Usage–- candidate designed 6-item bi-polar scale based on (KLA, personal communication, April 29, 2020) incorporating learning from referenced sources
CR–- Credit Repayment–- candidate designed 6-item bi-polar scale based on (KLA, personal communication, April 29, 2020) incorporating learning from referenced sources
CD–- Credit Default–- candidate designed 6-item bi-polar scale based on (B. Dekker, personal communication, April 24, 2020). incorporating learning referenced sources
CH – Credit Habits – 4-item scale based on UK Money Advice Service survey (Critical Research, 2018)
Financial State
FS – Financial State–- candidate designed scale based credit journeys using inputs from an on expert interview (B. Dekker, personal communication, April 24, 2020).

3.6.4 Addressing the issues of common method variance (CMV)

Common method bias (CMB) or variance (CMV) is possible where the same method of collection, question format or scales is tested amongst the same sample (Hair et al., 2018). To address this, some of the Likert scales were structured as positive in their direction while others were negative. Some of the item statements within constructs were negatively worded and these, together with the negative scales, were reverse coded after data collection. Tests to check for CMV are explained under Measurement Checks below.

3.7 Ethical considerations

Ethics clearance for undertaking this research was granted on 25th September 2020 by the Commerce Faculty with reference ID 17671816. A third-party commercial research company, Kaufman Levin Associates (Pty) Ltd with company registration number 2006/018321/07 (KLA), undertook the fieldwork for this research. In terms of ethics and controls, KLA is a member of both the South African Market Research Association (SAMRA) and the European Society for Opinion and Marketing Research (ESOMAR) and, as such, adheres to strict quality control processes throughout the research process. KLA were commissioned by Versuro Technologies (Pty) Ltd with company registration number 2018/341049/07 (the funder) in which the author David Victor Blyth with student number BLYDAV003 is a shareholder. Anonymity of the respondents was confirmed, and data was stored securely.

The research instrument requested explicit permission from consumers to provide their South African Identity numbers in order to cross-tabulate these primary research records with their credit bureau records. In order to do this, the data was shared with Versuro Technologies personnel, Versuro Technologies suppliers (under NDA) and a number of credit bureaus (also under NDA). Results in the reporting are at an aggregate, segment or lender level and the real names and identities of individuals are never revealed or shared. Credit records from various credit bureaux were collected in accordance with Section 68 and the permitted purposes as listed in Regulation 18(4) of the National Credit Act 34 of 2005 (the Act) specifically for the purpose of performing forensic investigation/s by the applicant to use the data for lawful and ethical purposes and in accordance with the provisions of the Act. According to the NCA, the author also ensured that the credit records obtained would not prejudice the respondent by leaving a credit enquiry footprint and that there was compliance, prior to the extraction of any credit record, with The National Credit Act, Act 34 0f 2005 ("NCA") to suppress (mask) the identity of respondents when performing an enquiry.

The data collected was less than 1GB in size and is stored on the KLA business servers (with password protection), in a folder on my company laptop (password protected), as well as in a folder on the Versuro Technologies OneDrive (with password protection). Respondents were incentivised and compensated per the existing KLA YourView points and rewards system.

3.8 Primary data collection

3.8.1 Pilot testing the questionnaire and constructs

Given the length of the questionnaire and the number of variables within it, and informed by best practice, it was decided to undertake a pilot to test consumer responses, reduce the number of variables where possible and refine the instrument before undertaking the main fieldwork (Reynolds et al., 1993). Refinement of the research instrument involved Item Analysis, Exploratory Factor Analysis (EFA) and Reliability Tests on each of the constructs using Cronbach's Alpha as well as Confirmatory Factor Analysis (CFA) to test Average Variance Explained (AVE) and Composite Reliability (CR) (Creswell, 2009; Netemeyer et al., 2003; Singh, 2007).

3.8.1.1 Pilot sample

The sample achieved was broken down as per Table 6 below:

Table 6–- Pilot study sample breakdown

Pilot sample	%	n
Incoming	9.7%	32
Clear	35.5%	117
Clear – Responsible	26.4%	87
Extended – Responsible	12.1%	40
Responsible–- Extended	6.7%	22
Distressed – Extended	4.2%	14
Extended to Distressed	5.5%	18
Total	100%	330

Even though a panel was used as a recruitment pool, the pilot study revealed some difficulty in signing up respondents from the 'Distressed to Extended', 'Extended to Distressed' and 'Responsible to Extended' journeys. It is assumed that these consumers, being more reserved about sharing information on their personal credit situation and their South African Identity numbers, declined participation. Thirty respondents provided an incorrect ID number. All of the 330 respondents from the pilot study were included in the upfront statistical tests that were undertaken, despite some of the ID numbers not being verified.

3.8.1.2 Pilot insights

Across the Self-efficacy Factors, two constructs emerged, exactly mirroring the findings from Lown (2011). These were subsequently relabelled as Financial Credit Self-efficacy (FCSE) and General Credit Self-efficacy (GCSE). The AVE and CR for each of these constructs were satisfactory as seen in Table 6 below.

The Cognitive Factors loaded into two distinct constructs Financial Capability (FCAP) and Financial Management (FMG). Two items did not load on either of these constructs and these were removed. The AVE and CR for both FCAP and FMG exceeded the minimum criteria.

Table 7 - Pilot study variable and decisions taken; n=330

Construct	Label	124 Items	Description	Alpha	AVE	CR	95 Items	Add 8	20 Items Removed 9 extra items carried over
Self-efficacy	FCSE	6	Financial Credit	0.811	0.518	0.865	6		Retain all
Self-efficacy	GCSE	4	General Credit	0.729	0.553	0.823	4		Retain all
Cognitive	FCAP	7	Financial Capability	0.825	0.539	0.875	6	(1)	Item 4 removed
Cognitive	FMG	7	Financial Management	0.868	0.605	0.901	6	(1)	Item 3 removed
Motivational	M_A_PP	29	Money Attitudes	0.932	0.569	0.929	10		
Motivational	M_A_SC		Money Attitudes	0.871	0.551	0.895	7	(4)	Items 15,18,20,22 removed
Motivational	M_A_RT		Money Attitudes	0.617	0.451	0.804	5		
Motivational	M_A_AX		Money Attitudes	0.605	0.468	0.637	2	1	Carry extra item 16
Motivational	D_A_LS	17	Debt Attitude	0.824	0.523	0.867	6	2	Carry extra items 6 & 9
Motivational	D_A_FG		Debt Attitude	0.677	0.529	0.771	3	(2)	Items 5&7 removed
Motivational	D_A_MR		Debt Attitude	0.504	0.579	0.734	2	2	Items 13 & 14 rephrased
Affective	MAT_HP	18	Materialism	0.706	0.553	0.829	4	1	Carry extra items 3,4,6,11
Affective	MAT_CT		Materialism	0.627	0.458	0.708	3	2 (4)	Items 1,9,10,16 removed
Affective	MAT_SS		Materialism	0.707	0.500	0.745	3	1	
Affective	IMP	9	Impulsivity	0.917	0.633	0.932	8	(1)	Item 8 removed
Affective	MOOD	7	Mood and Optimism	0.502	0.228	0.374	0	(7)	All 7 items removed
Selective	CS	5	Score Manage	0.522	0.439	0.701	3	-	Retain but caution
Selective	CS		Score Influence	0.156	0.280	0.438	2	-	Retain but caution
Selective	LP_SP	6	Lender Support	0.672	0.507	0.802	4	-	Retain but caution
Selective	LP_CT		Lender Control	0.415	0.580	0.734	2	-	Retain but caution
Credit Usage	CU	3	Credit Usage	0.619	0.580	0.802	3	-	Retain but caution
Credit Repay	CR	3	Credit Repayment	0.692	0.619	0.830	3	-	Retain but caution
Credit Default	CD	3	Credit Default	0.579	0.547	0.781	3	-	Retain but caution
New construct	FCON	-	Financial Confidence					4	Added 4 items to main study
New construct	CH	-	Credit Habits					4	Added 4 items to main study
25-1 = 24							95	+8	= 103

Removing MOOD leaves 24 constructs; 9 'extra items' were carried over in case – see explanation under 3.8.13: Pilot decisions taken

Two existing scales were tested separately under Motivational Factors, namely the MAS (Yamauchi & Templer, 1982) and the CADS (Lea et al., 1995b). Items M-A15 and M-A18 on the MAS cross-loaded on two different constructs and were removed (Hair et al., 2018). Four constructs emerged per the findings of Yamauchi and Templer (1982), the strongest being Power-Prestige, (M-A_PP) followed by Security (M-A_SC), Retention (M-A_RT) and Anxiety (M-A_AX). The two former constructs passed the minimum criteria for Cronbach's Alpha, AVE and CV but for the two latter constructs, one performed satisfactorily on CR, and both failed on the minimum criteria for Cronbach's Alpha and AVE. It was however decided to keep these two constructs in the main study to check them within a more representative sample. Items 15, 18, 20 and 22 proved problematic and were removed from the main study although item 16 with a low loading was kept.

The CADS revealed three distinct factors, and the names used by Lea et al. (1995b) to describe these were kept, namely: Lifestyle (D-A_LS), Frugality (D-A_FG) and Morality (D-A_MR). D-A_LS surpassed the minimum criteria on all measures while D-A_FG and D-A_MR both failed the Cronbach's Alpha test but performed well on AVE and CR. It was decided to keep the D-A_FG items to test within a more representative sample in the main survey. While three items loaded on the Morality construct, one namely D-A14, had a factor loading of 0.388 – it was decided to rephrase this statement in the main study from 'I do not like borrowing money' to 'Borrowing money is essential these day'' to make it clearer and to see if it performed better in a larger more representative sample. Despite only two factors remaining in the Morality construct, it tested well on AVE and CR but failed on Cronbach's Alpha. Two other items, D-A5 and D-A7, cross-loaded and these were removed. D-A13 received a high factor loading of 0.768 but was out on its own; it was decided to keep this statement for the main study but rephrase it from 'It is too easy for people to get credit cards' to 'It should be more difficult for people to take out credit'' to make it clearer. Oddly, items 6 and 9 did not load well at all and given the nature of these statements it was decided to keep them in to check their performance in a more representative sample in the main study.

The MVS revealed three clear constructs in Happiness (MAT_HP), Centrality (MAT_CT) and Success (MAT_SS) per the original study (Richins, 2004). MAT_HP and MAT_SS passed on all measures, but MAT_CT failed on AVE and CR. It was decided to keep all three of these and check their performance in the main study with a larger more representative sample. MAT1 cross-loaded and items MAT9, MAT10 and MAT16 also proved problematic and were removed. It was initially thought that the negative scores on these three items were as a result of the need for reverse coding but while the psychometric properties were all negative, the underlying meaning of the statements are not the same – it appears as if they loaded on general consumer confusion. A number of the other statements, namely items 3 and 6 had fairly high negative loadings and it seemed that both of these should belong to the construct of MAT_CT and were thus kept in for the main study. Items 4 and 11 cross-loaded but clearly belonged to either MAT_HP or MAT_SS and thus these were also kept for further analysis.

Within Affective Factors the scale from Rook and Fisher (1995) held together as a composite construct except for item IMP8 which was removed. The remaining eight variables scored highly on Cronbach's Alpha, AVE and CR. The remaining items in this EFA included statements that had been constructed from the qualitative work undertaken in February 2020, (KLA, personal communication, April 29, 2020) to represent Mood, Optimism, Anxiety and Social Standing but they seemed disjointed in their loadings and meaning. After noting that the

intended meaning in these items were already covered off more comprehensively by other scales, all seven of these statements were removed.

The Selective Factors included questions related to the influence of the Lender and a consumer's Credit Score. It was felt that this statement might influence consumers' selective decision-making at the point of purchase or in taking out more credit. The lender-related statements seemed to load under constructs relating to the Support lenders provide at credit sign-up (LP_SP) or whether they leverage their Control to negative effect (LP_CT). The credit score statements loaded under two constructs, namely: how consumers Manage their score (CS_MNG) and how certain personal characteristics might Influence their score (CS_INF).
While a few satisfactory scores were achieved on CR, these constructs performed poorly on all other measures. They were kept in the main study to be checked against the larger sample but were marked for caution. These items could also possibly prove useful for cross-tabulation and profiling of the various credit journeys.

Credit behaviours were also included under the separate labels of Credit Usage, Credit Repayment and Credit Default. Each of these comprises three bi-polar statements on a 10-point scale and they were assessed as possible mediators in the structural modelling to come. All performed poorly on Cronbach's Alpha but well on all other measures.

3.8.1.3 Pilot decisions taken

The above analysis, which is summarised in Table 7 above, led to some specific decisions on which items to retain or discard and reduced the number of measured items from 124 to 95.

After consideration of the above outcomes, it was decided to introduce a new question to the final research instrument related to Financial Confidence (4 items) as well as a construct called Credit Habits (4 items), both from the study undertaken by the UK Money Advice Service (Critical Research, 2018). A further 9 items were questionable and were carried over in the questionnaire just in case they loaded differently in the main study. A total set of 103 key variables were thus taken forward into the main study as shown in Table 6 above (95 items plus 8 new items). A further 9 'extra items' were carried over and incorporated into the final research instrument as their loadings were either very close to the cut-off criteria, confusing in relation to their association with certain constructs or it was felt that they should be given the opportunity to perform within a larger sample, in the main study.

3.8.2 The sample and sampling

Two sets of fieldwork were undertaken. Firstly a pilot with a sample of n=330 respondents and then a main study with a desired sample of n=1050 respondents. The latter was structured to

represent the demographic profile of the South African credit population in terms of age and income per the Table 8 below (Creswell, 2009; Singh, 2007). Both pilot and main study samples were extracted from an existing online research panel called YourView, maintained and administered by a professional research company KLA. The YourView panel comprises 30,000 respondents and was used as it supported the intent to ultimately extend this research into a tracking or possibly even a longitudinal study (Singh, 2007). Respondents were selected from the panel using random probability sampling (Malhotra & Dash, 2016; Singh, 2007) to ensure that all individuals had the same chance of being selected for the survey (Creswell, 2009). The sample was also stratified to secure minimum quotas in each of the credit journeys through respondent screening and quota controls (Creswell, 2009). Importantly, all panel members were already pre-cleared as having internet access via a computer or mobile phone.

Table 8–- Quantitative survey–- desired sample structure n=1050

Sample of 8m consumers from the SA credit database	Credit Bureau: No. of Consumers	%	Total n	Incoming	Clear	Clear to responsible	Extended to responsible	Responsible to extended	Distressed to extended	Extended to distressed
AGE				150	150	150	150	150	150	150
18-27	535,890	7%	71	10	10	10	10	10	10	10
28-35	1,689,101	21%	225	32	32	32	32	32	32	32
36-44	2,096,825	27%	279	40	40	40	40	40	40	40
45-60	2,670,755	34%	355	51	51	51	51	51	51	51
61+	903,214	11%	120	17	17	17	17	17	17	17
TOTAL	7,895,785	100%	1050	150	150	150	150	150	150	150
INCOME (P)										
R3,200-6,399	1,087,883	14%	145	21	21	21	21	21	21	21
R6,400-R8,199	1,191,011	15%	158	23	23	23	23	23	23	23
R8,200-R11,499	1,272,908	16%	169	24	24	24	24	24	24	24
R11,500-R16,999	1,415,947	18%	188	27	27	27	27	27	27	27
R17,000+	2,928,036	37%	389	56	56	56	56	56	56	56
TOTAL	7,895,785	100%	1050	150	150	150	150	150	150	150

P = Personal

To deal with the challenges experienced with some respondents supplying incorrect identity numbers in the pilot study, a publicly available Modulus 11 script was embedded as a redundancy check into the upfront part of the survey to validate ID numbers. This was used instead of a live lookup to avoid connectivity delays and related consumer frustration or exiting of the survey.

3.8.3 Data collection

Data collection for the quantitative surveys (both pilot and main study) was online, although some top-up face-to-face interviews were required to complete the main study sample. Data

was collected via a self-completed questionnaire for the online part of the study with computer-aided personal interviews for the top-up face-to-face interviews. Interview length ranged from 35 to 45 minutes using a structured research instrument containing nine screening questions and 63 closed questions. Invitations were sent to respondents inviting them to participate by clicking on a link to access the online survey and to facilitate greater response, reminder emails were sent after the initial invitation and then as required to drive up response rates. For the face-to-face interviews, these respondents were recruited via mall stops.

The pilot research was undertaken in October 2020 and the findings thereof used to update and refine the final research instrument. The main study was launched in late November 2020 and after confirming some 335 completed questionnaires, response rates reached a point of diminishing return, receiving feedback from prospective respondents that they were unwilling to provide their South African Identity numbers. It appeared as though some respondents were intentionally capturing incorrect identity numbers and these responses were excluded from the final data set. It was decided to enlist the support of a third-party panel and pay a premium to bolster response rates and this achieved a further 378 responses, taking the total up to 713. Still facing the difficulty of achieving minimum sub-samples for each of the credit journeys, further face-to-face interviews were conducted to make up minimum quotas and to allay, through in-person explanation, any fears of a lack of confidentiality in relation to the use of ID numbers. A further 170 interviews were achieved in the second and third weeks of February to close the sample out at 874, short of the desired 1050. A final breakdown of this sample, by income bracket and other criteria, is captured in Chapter 4 of this dissertation.

3.9 Quantitative data analysis approach

In this section the approach to quantitative analysis of the data is described including importation, data inconsistencies, checking of sample size, data screening and the high-level approach to structured equation modelling.

3.9.1 Importing of the data

Data was collected using a data collection platform called Alchemer (Alchemer, 2021). The collected data was exported to SPSS and CSV file formats and then imported into SPSS 27.0 (IBM Corporation) to undertake the statistical analyses. Once in the SPSS environment, the labels for all questions were checked and adjusted where required. Each of the scaled questions were relabelled to map to the constructs mentioned above. For example, question B19 on Impulsivity contains nine statements and each statement was labelled IMP1 to IMP9 to assist with reporting and analysis. Statement 8 within these questions needed to be reverse coded and

this was therefore labelled 'IMP8'. A total of 18 statements across the questionnaire were reverse coded.

3.9.2 Data Inconsistencies

Data was checked for any inconsistencies in responses across the questionnaire. Invalid responses are those where responses within a question or a series of questions contradict one another or if the open-ended capture at the end of a question conflicts or does not represent the closed selection above it or if there is an integrity issue with the answer itself. For example, under Life Events, if a respondent chose 'Started family in last 6 months' and 'Considering starting a family in the next 6 months'. This could be the result of an input error where numbers are transposed in an identity number, or a respondent misread or misunderstood the question. It could, however, be a respondent not wanting to reveal their true identity. In the latter case, the validity of all other responses of that respondent should be questioned.

As it would be used for statistical modelling the main dataset was checked for missing data and also checked for unengaged responses using a simple standard deviation formula across each respondent's answer. Missing data was identified by running frequency tables and identifying system missing data points in the tabulation. If these missing values accounted for less than 10% of the responses within a construct then the missing values were replaced with the variable mean using Full Information Maximum Likelihood (FIML) imputation (Hair et al., 2018). The data file was also checked for missing data by importing into Excel and searching for blank cells. Unengaged responses were also checked in Excel by calculating the standard deviation of answers across each respondent.

3.9.3 Sampling adequacy and checks

In respect to the adequacy of sample size given the extensive number of constructs some with limited number of indicators, Malhotra and Dash (2016) recommend a sample size of more than 400 while Hair et al. (2018) recommend more than 500.

Sampling adequacy and therefore suitability for factor analysis was also checked using the Kaiser–Meyer–Olkin (KMO) and Bartlett's test of sphericity (Hair et al., 2018). This test was undertaken on the n=794 dataset for the 103 key items identified from the pilot study. Results of this test are provided in the next chapter, Chapter 4.

3.9.4 Data screening: Outliers, linearity and non-normality

A number of descriptive statistical analyses were undertaken to get a feel for the data (Singh, 2007), including histograms, boxplots and normal Q-Q plots which were produced using SPSS.

The data and descriptive tests were then scrutinised for their distribution, presence of outliers and any other anomalies. Two levels of skewness standards were used:

- Skewness not more than 3x the standard error of the skewness
- Skewness not more than absolute 2.

Outliers were assessed in terms of Mahala Nobis Distance; any respondent whose multivariable outliers had a less than 0.001 probability was marked for possible exclusion (Hair et al., 2018; Malhotra & Dash, 2016).

3.9.5 Measurement checks

The data was then sent through a series of measurement checks. Firstly, CMB and then a basic factor structure for each variable – an EFA was used for both. Common method bias was of concern as the research instrument was lengthy and many of the questions used similar scales, which could for example result in respondents answering in the same way for every question. The risk of this resulting in variance in the research data, which is then assigned to the of measurement method as opposed to the factors within the model itself, was therefore of concern (MacKenzie & Podsakoff, 2012). To assess this, Harman's test single-factor test was undertaken limiting the number of factors to 1 in an unrotated analysis (Malhotra & Dash, 2016).

Additionally, a Common Latent Factor was added to the final measurement model, with lines drawn into each variable and then each of these lines constrained to 'a' – the regression weights pre and post the addition of the CLF were compared side-by-side and the scores pre-CLF were subtracted from the scores post CLF to assess whether the delta was greater than 0.2 (Gaskin, 2011). A marker variable was also added to the path diagram that included the CLF and its relationship with each item in its construct also being constrained to a. These results were then compared with the post CLF regression weights (Gaskin, 2011). The results of these tests are presented in Chapter 4.

3.10 Rationale for using Structural Equation Modelling (SEM)

Based on a priori specifications, there are 24 constructs requiring measurement in this study and given that the hypotheses describing possible dependent, mediating and recursive relationships between them, the use of Structured Equation Modelling (SEM) was seen as appropriate (Kline, 2015). Ultimately, this study aimed to establish the predictors of movement up and down the ladder of indebtedness but a SEM, in and of itself, is not able to define causality as it uses single point in time, cross-sectional survey data; however, SEM can be a

support to establishing causality as it helps define dependence relationships across constructs (Malhotra & Dash, 2016).

SEM can determine the contribution of each dimension in representing self-efficacy and how well the set of observed variables measuring it, for example the extent to which Financial Confidence contributes to the make-up of Credit Self-efficacy and the extent to which the items measured within the construct of Financial Confidence represent self-efficacy. In this case a dependent variable like Financial Confidence can become an independent variable in another relationship, explaining Credit Behaviour for example as a mediating independent variable (Malhotra & Dash, 2016). The structured equations undertaken then model the relationships across all the constructs, both dependent as well as independent, considering measurement error. This is what distinguishes SEM from factor analysis as the measurement error describes the extent to which the observed variables are not able to describe the latent constructs like Financial Confidence or Credit Self-efficacy or Credit Behaviour (Malhotra & Dash, 2016). The aim is to seek the smallest number of parameters that explain the underlying model which in the case of this research means the most important factors in predicting credit state and credit journey.

3.11 Approach to SEM

SEM helps understand dependent relationships between latent factors, identifying inter-relationships and using the measurement error is able to represent hypotheses about the statistical relationships between factors. There are two types of covariance between error variance, these being “within construct error covariance” and “between-construct error covariance” (Hair et al., 2018, p. 665). This cross-loading is a contradiction to good measurement with the former suggesting that perhaps these items are related to some other yet to be identified construct or in the latter case that these two items are more likely to be related to one another than to the other items within the construct in which they are being measured (Hair et al., 2018).

A two-step approach was taken for the development of the SEM in this study, first specifying a measurement model using CFA to compare covariances and seek the simplest possible structure. The second step involved defining a series of structured equations to compare covariance matrices across each iteration to find which one best defines the relationships described in the theoretical measurement model (Malhotra & Dash, 2016).

3.11.1 Specifying the measurement model

The individual constructs in the measurement model were developed using both existing scales from previous academic research as well as newly constructed scales based on prior qualitative research and expert opinion (B. Dekker and N. Moore, personal communication, October 9, 2020). Content validity was established through a series of iterative reviews including the qualitative opinion of industry and research experts. CFA was undertaken on the main data set (n=653) to understand the relationships between the variables, confirm that the items formed natural constructs and identify second order constructs (Hair et al. 2018; Kline, 2015; Malhotra, 2016). This empirical testing using EFA assessed uni-dimensionality and convergent validity and was undertaken on both the pilot and again on the main data set.

The number of items per construct were kept to a minimum of three wherever possible as recommended by researchers (Hair et al., 2018) and high-level constructs and second-order constructs were identified as part of a reflective measurement model. Latent constructs, e.g. Impulse Management were drawn with single-headed arrows toward the measured items together with a resulting error for each item, representing that the items cannot fully explain the latent construct (Hair et al., 2018).

In specifying the model CFA was used to test the measurement theory and in doing this the indicators and correlations between indicators were set to 1 to free the model for estimation and to create a relative scale for the latent factors (Hair et al., 2018).

To meet the order condition the degrees of freedom for the model being measured must be greater than zero and in meeting rank condition each parameter must be estimated by a unique relationship (Hair et al., 2018). The rule set for construct validity of this model removed the use of any cross-loadings and in addition a three-indicator rule was followed wherever possible to establish rank condition (Hair et al., 2018). A number of second-order 2-factor constructs did emerge during the course of analysis and these were watched closely for reliability

Face validity was established a priori through an iterative review process with industry experts and the research team and nomological validity was tested by assessing if the output of the correlations across the constructs was sensible (Hair et al., 2018).

3.11.2 Evaluating the measurement model

The CFA was run in an iterative fashion, continually checking the statistical relationship structure among all variables, both observed and latent, and highlighting these on a path diagram. The aim of this exercise was to reduce the number of dimensions and find the best fit among the variables in the model, supporting the development of a path diagram for structured

equation modelling (Kline, 2015; Malhotra & Dash, 2016). Testing the integrity of the measurement model and improving model fit involved checking each iteration for composite reliability, convergent and discriminant reliability of each of the constructs. The extraction method used during the CFA was Maximum Likelihood and this was used to assess model fit as it is asymptomatically unbiased and efficient in assuming multivariate normal data (Hair et al., 2018).

3.11.2.1 Convergent validity

Composite Reliability Testing internal consistency involved undertaking a Cronbach Alpha test on all the measurement constructs. Hair et al. (2018) recommend that for there to be reliability within each construct the internal consistency value of the Cronbach Alphas should be greater than or equal to 0.7. This test involved defining "the total amount of true score variance in relation to the total score variance" and was computed as follows (Malhotra, 2016 p. 713): Convergent Validity tests were undertaken to measure the extent to which the indicators of the various constructs converge by testing factor loadings (λ) of each item within each construct. For an indicator to be considered usable, factor loadings were initially cut-off at 0.3 in the EFA and then a limit of 0.4 was applied to these results to better interpret the factor structure and define a final pattern matrix (Hair et al., 2018). During the CFA, minimum factor loadings 0.6 and preferably 0.7 were sought in order to accounts for 50% of the variance of a variable (Hair et al. 2018; Malhotra, 2016). Average Variance Extracted (AVE) was also assessed as a part of Convergent Validity in assessing the level of convergence between factors and the minimum acceptable value was set at 0.5 (Hair et al., 2001; Malhotra, 2016).

The following minimum criteria were set for the analyses as per Table 9:

Table 9 - Minimum criteria for reliability

Measurement	Minimum	Reference
Composite Reliability	0.7	(Kline, 2015; Malhotra & Dash, 2016; Singh, 2007)
Cronbach Alpha	0.7	(Hair et al., 2018; Malhotra & Dash, 2016)
Factor loadings	0.5-0.7	(Hair et al., 2018; Malhotra & Dash, 2016)
Average Variance Explained (AVE)	0.5	(Hair et al., 2018; Malhotra & Dash, 2016)
Discriminant Validity	Discriminant Value>Correlation Value	(Hair et al., 2018; Singh, 2007)

3.11.2.2 Discriminant validity

Discriminant validity was used to ensure the independence of constructs from one another and thus contribute in their own way to the overall model (Kline, 2015; Malhotra & Dash, 2016; Netemeyer et al., 2003). To assess discriminant validity, the "Fornell-Larcker method" described by Hair was used by comparing the square root of the AVE of each latent variable with the correlation scores between it any other latent variable in the model (2018, p. 776).

For there to be discriminant validity, the former should be higher than the latter per Table 8 above and the results of this are shown in Chapter 4. Discriminant validity also requires that each individual item only represents one latent construct and the rule of cross-loading described above also takes care of this requirement.

3.11.3 Measurement model fit

The integrity of the measurement model was assessed to ensure that no ambiguity existed in the definition of relationships between latent constructs by checking the instrumentation provided by AMOS (v26) including the covariances matrix. This helped identify that the model was not under identified and is indicative of the fact that a unique solution can be found through SEM (Hair et al., 2018; Kline, 2015). The goodness-of-fit measures used are Bentler CFI, Goodness of Fit (GoF) and adjusted goodness-of-fit (AGFI). CFI is an incremental fit index where results must be closest to 1.0. The GFI index measures absolute fit to the measurement model whereas the AGFI considers the degrees of freedom within the model (Malhotra & Dash, 2016). The Badness of Fit measures used are Chi-square, SRMR and RMSEA. Chi-square provides "a statistical test of the difference in the covariance matrices" at specific degrees of freedom and as such chi-square has the potential to introduce bias into the model fit as the number of variables in a study increase (Malhotra & Dash, 2016, p. 712). "SRMR is the standardised version of the root mean square residual (RMR)" (Kline, 2015, p. 277) and RMSEA indicates "the difference between actual and predicted covariance" (Malhotra & Dash, 2016, p. 712) – for both, a value of 0 represents perfect model fit. An additional measure, PCLOSE (the p of Close Fit) represents the probability of the model being a close fit and should be less than or equal to 0.05 (Kenny, 2020) .

The measurement model was run 12 times to establish both reliability and validity of the instrumentation. In assessing model fit the absolute fit indices and related criteria described above and shown in Table 10 below were applied and the results of these tests are described in detail in Chapter 4 to follow.

Table 10 - Minimum requirements for model fit statistics

Measurement	Minimum	Reference
CMIN/DF	<3 good	(Hair et al., 2018; Malhotra & Dash, 2016)
P value for the model	>0.05	(Hu & Bentler, 1999; Malhotra & Dash, 2016)
CFI	>0.90 (aim >0.95)	(Hu & Bentler, 1999; Malhotra & Dash, 2016)
GFI	>0.95	(Malhotra & Dash, 2016)
AGFI	>0.80	(Malhotra & Dash, 2016)
SRMR	<0.08	(Hu & Bentler, 1999; Malhotra & Dash, 2016)
RMSEA	<0.05	(Hu & Bentler, 1999; Malhotra & Dash, 2016)
PCLOSE	<=0.05	(Kenny, 2020)

3.11.4 Structural model identification

The unit of analysis for this research was the individual consumer and through structural modelling the aim was to understand "the nature and magnitude of the relationships between constructs" as opposed to only assessing the relationship between constructs in the measurement model (Hair et al., 2018, p. 702). As described above, measurement model testing is undertaken using CFA and adjusted in order to prepare a path diagram that through SEM modelling tests the hypotheses in the theoretical model (Hair et al., 2018).

SPSS AMOS v26 was used for identifying and evaluating the example path diagram where the exogenous constructs have outbound arrows with no inbound arrows and the endogenous constructs have both inbound and outbound arrows (Hair et al., 2018; Singh, 2007). The relationships between exogenous and endogenous and endogenous to endogenous constructs are therefore not reported separately as AMOS does not support this (Hair et al., 2018). All relationships are represented by single-headed arrows to represent the hypothetical causal relationship instead of the correlational ones used in defining the measurement model. Endogenous constructs have single-headed arrows coming into them and include an error-variance as they cannot be fully explained while exogenous constructs have single-headed arrows going out from them. Path co-efficients are annotated on the regression path lines themselves and in the tables while degrees of freedom are represented in the model as df.

The structural model identified in this research is a non-recursive one as it contains feedback loops between Credit Behaviour and Credit Journey (Level of Indebtedness) and between Credit Self-efficacy and Credit Journey. Credit Behaviour, Credit Journey and Credit Self-efficacy are thus hypothesised to be both cause (predictors) and effect (outcomes).

3.11.5 Evaluating the structural model

The fit of the model relative to the theoretical model is tested and the parameters in the path diagram measuring the magnitude and direction of the relationship between constructs are also measured to prove or disprove the hypothetical relationships described in the theoretical model. The first mechanism uses construct validity to assess the model and then the structural theory is tested at every iteration using the coefficient of determination, path coefficients and GoF measures (Hair et al., 2018).

Achieving good fit results in a structured model does not mean that a better model might not exist and therefore the instrumentation is examined at each iterative step to check if other alternative models might work (Hair et al., 2018). At each step certain model constraints are removed to enable new paths to exist and thus the size of new direct and indirect dependent

relationships (as opposed to correlational relationships) is measured each time checking the extent to which each structured model decreases model fit in the newly specified relationships (Hair et al., 2018; Singh, 2007).

Multiple regression was used as the technique for the structured equation modelling, given the existence of many independent variables. Beta values were calculated (partial regression coefficients) showing the impact of the independent variables on the dependent variable and an R squared value was produced as the summary of the collective impacts of all the independent variables (Singh, 2007).

All the constructs in the research instrument were measured on an interval continuous scale, a requirement for regression analysis (Singh, 2007) except for Financial State and hence this construct was recoded to produce a continuous scale representing a positive directional credit journey. Per the data screening exercise undertaken earlier, the distribution of all the variables analysed through regression was normal, a further pre-requisite for regression analysis. Path coefficients are highlighted and GoF instrumentation per the approach described for the measurement model above was also produced for each model and the model was respecified at each step. This post hoc analysis explored possible relationships that were not necessarily specified in the theoretical model and hence the outputs from these produce empirical evidence and not theoretical support (Hair et al., 2018).

A further GoF mechanism was used in the analysis called the Bollen-Stine bootstrap, a method that produces p-values which are compared across a number of generated samples, in this case 2,000 (Kline, 2015). “Each generated sample is drawn from transformed data that assume the perfect model-data correspondence in the model” (Kline, 2015, p. 239).

3.11.6 Diagnosing problems and model re-specification

Confirmatory factor analysis was used during the modelling process to assess the validity and fit of the measurement model and the fit of the structural model. Deviations from the desired reliability and fit instrumentation required iterative modification of the model, its components and the relationships between them to improve the model step by step aiming at finding the least number of variables that explain the most (Hair et al., 2018; Hoyle, 2012; Kline, 2015; Malhotra & Dash, 2016). Besides examining factor loadings and their significance scores, the outputs from AMOS v26 were used to assess reliability of the measurement model according to the reliability thresholds mentioned earlier as well as goodness of fit instrumentation, modification indices and the standardised residual covariance matrix. In the structural modelling, the path estimates between constructs, modification indices and standardised

residual covariance matrices were iteratively reviewed. For the two latter assessments any value above 4.0 was seen as problematic and subject to possible exclusion while for the latter value between 2.5 and 4.0 was carefully assessed as possible issues (Malhotra & Dash, 2016).

3.12 Testing for multi-collinearity

Given the extensive number of scales used in the research instrument, it was expected that some issues of multi-collinearity would be observed. In order to detect this a linear regression was undertaken alternating the various constructs as dependent variables. In the collinearity statistics output, the tolerance values, variance inflation factors (VIF) were reviewed seeking those that were greater than 10 (preferably not greater than 5) which would indicate that that variable is redundant (Hair et al., 2018; Kline, 2015; Malhotra & Dash, 2016).

The collinearity diagnostics were reviewed seeking Eigen values close to zero which is an indication of highly correlated variables. Condition Index values greater than 15 and at worst 30 indicated multi-collinearity and warrants an inspection of the variance proportions to check if two factors present values of greater than 90% (0.9) on the same row of the table
(Hair et al., 2018; IBM, 2021).

3.13 Testing for mediating effects

In order to properly answer the research question and prove the hypotheses in this study, it is necessary to understand the whether there is any intervening influence or causality between the independent variables and the dependent variable and to assess the resulting indirect effects should mediation exist (Hair et al., 2018; Kline, 2015; Rick H Hoyle, 2012).

The various paths between independent variables, potential mediators and the independent variables were assessed for their significance and strength and then the indirect effect calculated by adding the path estimation between the predictor variable and the independent variable with the multiplication of the input path to the mediating variable from the predictor variable with the output path from the mediating variable to the independent variable (Hair et al., 2018). In order to ensure accurate assessment, researchers recommend undertaking bootstrapping (Hair et al., 2018). In AMOS 26, testing for mediation and indirect effects is undertaken automatically using an Estimand function or by manually coding this equation into AMOS for each possible mediating relationship. The candidate used both mechanisms during analysis but the automated output was used for reporting. This was undertaken specifically to answer hypothesis 2 (H2).

3.14 Criteria and limitations

Given the size of the desired sample and the successful achievement of the intended sub-samples, the study was designed to be statistically representative to a 95% confidence level (Fowler, 2014; Kline, 2015; Singh, 2007) to enable cross-tabulation of the data and provide a reliable profile of positive and negative consumer journeys within it. The desired sample of 1050 respondents was not achieved as the final number of respondents was n=874. A decision was taken to ensure, through the additional face-to-face top-up interviews, to achieve minimum sub-samples of 100 for each for the journeys and to forgo the need to achieve minimum sub-samples per credit provider. Data collection therefore fell short of its intent in numbers across the desired stratification of the sample but representivity at a demographic and credit journey level was still achieved, supporting the confidence level mentioned above in reporting across these dimensions (excluding lender-level profiling).

This research is limited by its focus on a South African data set. While this probably has direct relevance to other developing countries, further research will be required to assess its relevance across more developed geographies. There is also some risk that the factors identified as having a predictive influence are insufficient in fully explaining financial state. Given the extent of the questionnaire and the variables within it, there was concern of the risk of CMB. While the data set for this research passed the aforementioned test, it must be noted that future longitudinal studies will need to repeat this test for every survey conducted. Other techniques to avoid CMB and ensure the quality of the data in used in this study and future studies include pre-testing of questions to ensure comprehension, avoiding the inclusion of question that are vague, simplifying language to make it clear and unambiguous, breaking the survey into a few different sections and pages especially on long grid questions (MacKenzie & Podsakoff, 2012). The survey software used also enabled a check to assess how long responders take to complete a survey so as to identify respondents who were ‘speeding’ through answers.

The length of the questionnaire was also a limiting factor. Being a foundational survey an extensive number of questions were included, and this caused timing delays and was possibly the cause of a number of the data inconsistencies identified (which were subsequently removed). There are 16 possible Credit Journeys per Table 3 above and future research should aim to accommodate all of these for a more comprehensive segmentation of the formal credit market. This study covered seven of these journeys although only six were used in the SEM. To be of greater value to ongoing development of the credit industry and to properly support lenders and consumers, further longitudinal work is required as this study is point in time

research and thus is limited in its ability to track and analyse movements across the various credit journeys.

3.14.1 Generalisability

Although an attempt was made to deliver a nationally representative sample, the collection mechanism for this research was online study which naturally favours a more socio-economically well-off audience. This study is therefore limited specifically in relation to its coverage of the informal credit market.

3.14.2 Cross-sectional data

This research was undertaken at a point in time, over the Covid period (November 2019 to February 2020) and thus suffers from the sentiment, mood and behaviours of consumers at the time. While in the future longitudinal research using the outputs of this model would be ideal, it is incredibly expensive and difficult to maintain a consistent panel as a sample over time and while recommended it is probably unrealistic. It is more likely that this issue is most efficiently addressed via ongoing tracking research with representative samples over time.

3.14.3 Self-reported measures

This research used self-reported measures which limits the study in that it is based on perceptions of one's own self. In collecting national identity numbers (with permission) it is possible to cross-validate some of the research data with actual consumer credit behaviour via real transactional data within the credit bureaus. It is recommended that future research considers a panel of consumers who pre-approve the collection of their identify numbers, in a Protection or Personal Information Act (POPIA) and General Data Protection Regulation (GDPR) friendly way. This will help easily connect any primary research data collected to actual transactional data and credit bureaux variables.

3.15 Chapter summary

This chapter outlined the research philosophy and related research design including sampling, data collection and constructs that were measured. The approach to quantitative data analysis was described including an overview of the measurement approach and techniques used in checking sample size, screening of data and checking for common method bias. The chapter also included a detailed description of the statistical procedure used in structured equation modelling. In closing the theoretical model and its related hypotheses to be tested, was introduced followed by the criteria and limitations of the study and finally ethical considerations.

4 CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter details the findings of the research, beginning with the sample achieved and the demographic characteristics of the respondents, the model that was tested is then presented, followed by the various preliminary checks undertaken to ensure the validity and reliability of the data set. The results of the statistical analysis conducted on the measurement model are then presented and discussed prior to introducing the analysis of the structural model. The empirical data emerging from the iterative analysis of the structural model are presented together with related theory and discussion of how the output proves or disproves the research hypotheses. A final resulting structural model is presented as a close to this chapter.

4.1.1 Data screening, cleaning and item checks for normality

In the collection of data for the main study, the functionality of the data collection platform (Alchemer, 2021) as mentioned in Chapter 3 above ensured that respondents could not complete the survey without completing all of the relevant questions and thus no missing data was observed in the uploaded file. These inconsistencies were identified and flagged individually and a total of 318 inconsistencies were found within the 874 records, as per Table 11 below:

Table 11 - Data inconsistencies

	A No inconsistencies identified	B 1 inconsistency identified	C 2 inconsistencies identified	D 3+ inconsistencies identified	Total
Respondents	621	196	52	5	874
Total Inconsistencies		196	104	18	318
ID_Number_Inconsistent		0	1	0	1
Age_Inconsistent		30	40	2	72
Gender_Inconsistent		0	0	0	0
Default_Inconsistent		0	0	0	0
Employment_Inconsistent		39	9	2	50
Household_Inconsistent		3	1	2	6
Income_Inconsistent		1	3	2	6
Life_Event_Inconsistent		123	47	4	174

On reviewing the above it was decided to exclude the records (n=72) that contained age inconsistencies from further analysis. Age was a closed question in the research instrument with six possible options. An incorrect age could reflect that someone was using another person's ID number to answer the survey or that they intentionally chose the wrong age but were using the correct ID number. It is difficult to prove which is the case but more likely that

it is the former and hence all age inconsistent records were removed as this is common business practice and would be in line with future use of the data and hence external validity.

Additionally, the inconsistent ID number record (n=1) as well as the income inconsistencies records (n=6) and n=1 further record that did not pass face validity were removed bringing the total number of data inconsistencies to n=80. The data set used in the analysis to follow is thus n = 794 (n=874 minus n=80) and the structure of this data set is detailed in Table 12 below.

4.1.2 Identification and treatment outliers

A Mahalanobis distance test was undertaken and n=118 cases were identified as problematic but when re-tested without these cases only led to marginal gains across some scores. These cases were compared with the cases where there were inconsistencies in the data (such as mis-claiming for age) and all of the n = 80 cases mentioned above were included in the n=118 outliers. In comparing the results of the Mahalanobis distance test with the test of age inconsistencies it was decided to exclude cases where there were explicit data inconsistencies per Section 3.4.2 above (n=80). On review n=38 records (118 minus 80) would make little difference to the outcome of any analysis and hence these were retained in the sample.

A further review of the descriptive statistics for each of the constructs using boxplots showed the constructs to outliers were attributed. Fifty-three cases were identified as outliers, 51 of which were mild and two of which were extreme. This can be seen in Figure 8 in Appendix 2.

Once again, on review it was decided that these two extreme outliers would make little difference to the overall analysis and hence were kept in the sample. This is common practice and would be in line with future use of the data and hence external validity.

In Chapter 5 below the reporting references the n=794 sample as it excludes data inconsistencies n = 80 and this is henceforth referred to as the main dataset.

The missing data for CH2_RC, CH3_RC and CH4_RC involved eight records and represented 0.3%, 0.5% and 0.3% of the total responses respectively which is far lower than the minimum 10% (Hair et al., 2018; Malhotra & Dash, 2016). Given this, the missing records were replaced with the mean score for that particular question.

4.1.3 Sampling adequacy

The Kaiser-Meyer-Olkin measure of sampling adequacy was run using the 103 items from the data set of n=794. As seen in Table 12, the KMO was well above the bare minimum 0.5 (Hair et al., 2018; Malhotra & Dash, 2016; Singh, 2007) and even the preferred middle value of 0.7 as it was 0,911. The data also passed Bartlett's test of sphericity with p = 0,000 (Malhotra &

Dash, 2016) and this score together with the high KMO indicates that the correlation between the data can create an identity matrix suitable for factor detection.

Table 12 - KMO Bartlett test – n=794

Kaiser-Meyer-Olkin measure of sampling adequacy.		0.911
Bartlett's test of sphericity	34989.767	41214.031
	5151	6786
	0.000	0.000

4.2 Sample achieved and defining characteristics

The sample achieved for the main study was n= 874, less than the desired n=1050. The full sample structure is in Table 30 in Appendix 1 while the actual sample achieved is shown in Table 13 below.

A number of important observations can be made about the demographic breakdown across the different credit journeys. A good mix of respondents across the different journeys was achieved with Extended to Distressed accounting for 13.70% of the sample, Distressed to Extended 15.50%, Responsible to Extended 14.40%, Extended to Responsible 14.70%, Clear to Responsible 11.70%, Clear 12.20% and Incoming 17.80%.

Over 80% of the sample are between the ages of 28 and 60 and relative to national population statistics it has a slight female skew. Over half the sample is located in the country's economic heartland of Gauteng with KZN and Western Cape contributing 17.8% and 14.2% respectively.

The sample is also more affluent than the national population with 32.9% earning more than R17,000 per month, 19.5% between R11,500 and R17,000, over half earning at least R10,000 per month, 47.5% of the sample earn between R3,199 and R11,500 and those earning less than R3,199 were excluded from the sample.

A total of 35.5% are married with dependent children, while 23.6% are single with dependent children. Single individuals with no children accounted for 18.3% of the sample.

While only 53.5% of the sample is Black, under indexing relative to the national population, this is not of concern considering the number of respondents (n=425). While 32,5% of the sample have successfully completed high school with a matric qualification, 27.2% have a diploma, 14.4% an undergraduate degree and 13% hold a professional certificate.

The majority of respondents (62.5%) are formally employed, 21% are self-employed, 5% are unemployed and 6% of the sample are employed but considering retirement.

While 40.2% of the sample have between three and six dependents, 28.2% have two dependents and 17.3% only one dependent. Interestingly, while 9.4% have no dependents at all, 4.3% have between 6-11 dependents and the latter points to South Africa's historical social structure which has created generational dependence.

Of the respondents, 32.6% own their property outright, 30.6% rent, 21.2% own their homes with the help of a mortgage and 15.6% live rent free. Further, 61.2% of the sample have missed a credit payment in the past three months and 65.5% in the past six months prior to the fieldwork.

Returning to the credit journeys which are mapped left to right in Table 12 per the scale used in the SEM, it is interesting to note that consumers aged 36-60 tend to be in a less healthy financial state (left hand side of the table) than the remainder of the sample while the Incoming (new to credit) segment is logically populated by younger individuals. Once again reflecting historical societal structures, more of the less well-off consumers tend to be female, are more likely than the rest of the sample to live in the less economically viable geographies and be single with dependent children. Those with lower levels of education and those without employment are also more likely than the total sample to be in a less healthy financial state.

Although not significant, more consumers in the negative journeys have been in the credit system for longer and further research is required to explore understand this better. While these demographic profiles are both important and interesting, they are typical of the kind of analysis undertaken by financial service institutions to assess prospective credit card consumers' risk profiles and we should rather give more attention to consumer behaviour (L. Wang et al., 2011).

Descriptive statistics from within this research show that consumers also turn to family and friends to assist in recovering from debt and this type of borrowing is not recorded as formal lending per Figure 5 below. This behaviour was also identified in the qualitative research undertaken in early 2020 (KLA, personal communication, April 29, 2020) and is confirmed by the data below showing that of the 371 individuals who answered >5 on the 10-point bi-polar scale for question CD1 relating to support when in default, 392 out of 555 responses (multiple mentions possible) were allocated to Family and Friends and only 106 to Lenders.

When I find myself in Default: I use other forms of credit to manage ---> I ask for assistance so that I can plan better

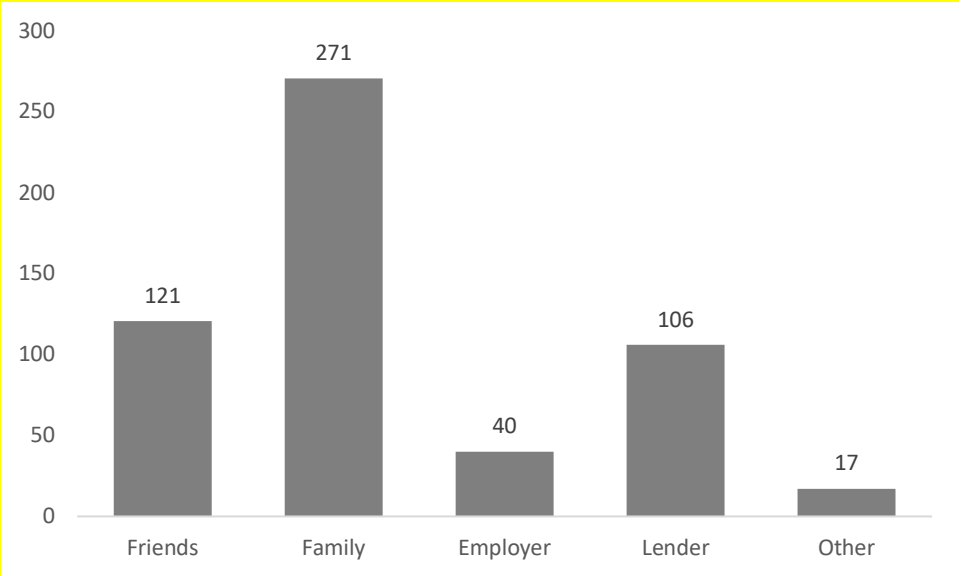


Figure 5 - Sources of support when in credit default; n=371; 10-point bi-polar scale

Table 13 - Quantitative survey sample structure achieved n=794

	N / % Col	Extended to Distressed	Distressed to Extended	Responsible to Extended	Extended to Responsible	Clear to Responsible	Clear	Incoming	Total
	Percentage Credit Journey	13.70%	15.50%	14.40%	14.70%	11.70%	12.20%	17.80%	100.00%
AGE	Age 18-27	8	10	10	13	5	13	27	86
		7.30%	8.00%	8.80%	11.20%	5.50%	13.40%	19.00%	10.70%
	Age 28-35	19	39	23	43	28	25	68	245
		17.50%	31.90%	20.40%	36.70%	30.10%	25.80%	48.30%	30.90%
	Age 36-44	35	22	28	29	30	27	30	201
		32.20%	17.90%	24.80%	24.80%	32.40%	27.80%	21.20%	25.40%
	Age 45-60	39	40	43	24	23	25	11	205
		35.80%	32.60%	37.80%	20.80%	24.90%	25.70%	7.70%	25.90%
	Age 61 +	8	12	10	8	7	7	5	57
		7.20%	9.70%	9.00%	7.10%	7.70%	7.00%	3.50%	7.30%
	Total	109	123	114	117	93	97	141	794
		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GENDER	Male	41	50	45	59	29	36	95	355
		37.6%	40.7%	39.5%	50.4%	31.2%	37.1%	67.9%	44.8%
	Female	68	73	69	58	64	61	45	438
		62.4%	59.3%	60.5%	49.6%	68.8%	62.9%	32.1%	55.2%
	Total	109	123	114	117	93	97	140	793
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
PROVINCE	Eastern Cape	6	5	8	5	3	4	3	34
		5.5%	4.1%	7.0%	4.3%	3.2%	4.1%	2.1%	4.3%
	Free State	4	6	3	2	4	0	28	47
		3.7%	4.9%	2.6%	1.7%	4.3%	0.0%	19.9%	5.9%
	Gauteng	50	51	56	66	54	52	72	401
		45.9%	41.5%	49.1%	56.4%	58.1%	53.6%	51.1%	50.5%
	KZN	27	35	18	14	19	12	16	141
		24.8%	28.5%	15.8%	12.0%	20.4%	12.4%	11.3%	17.8%
	Limpopo	2	3	1	2	1	2	4	15
		1.8%	2.4%	0.9%	1.7%	1.1%	2.1%	2.8%	1.9%
	Mpumalanga	2	1	3	5	0	4	6	21
		1.8%	0.8%	2.6%	4.3%	0.0%	4.1%	4.3%	2.6%
	Northern Cape	1	0	0	2	0	0	1	4
		0.9%	0.0%	0.0%	1.7%	0.0%	0.0%	0.7%	0.5%
	North West	3	3	1	5	4	1	1	18
		2.8%	2.4%	0.9%	4.3%	4.3%	1.0%	0.7%	2.3%
	Western Cape	14	19	24	16	8	22	10	113
		12.8%	15.4%	21.1%	13.7%	8.6%	22.7%	7.1%	14.2%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	N / % Col	Extended to Distressed	Distressed to Extended	Responsible to Extended	Extended to Responsible	Clear to Responsible	Clear	Incoming	Total
PERSONAL INCOME	R3,200-R6,399	20	30	14	17	13	7	12	113
		18.30%	24.40%	12.30%	14.50%	14.00%	7.20%	8.50%	14.20%
	R6,400-R8,199	12	19	15	19	15	14	35	129
		11.00%	15.40%	13.20%	16.20%	16.10%	14.40%	24.80%	16.20%
	R8,200-R11,499	19	18	16	17	14	11	41	136
		17.40%	14.60%	14.00%	14.50%	15.10%	11.30%	29.10%	17.10%
	R11,500-<R17,000	19	22	24	23	21	22	24	155
		17.40%	17.90%	21.10%	19.70%	22.60%	22.70%	17.00%	19.50%
	R17,000+	39	34	45	41	30	43	29	261
		35.80%	27.60%	39.50%	35.00%	32.30%	44.30%	20.60%	32.90%
	Total	109	123	114	117	93	97	141	794
		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
MARITAL STATUS	Single No Children	12	27	14	23	18	18	33	145
		11.0%	22.0%	12.3%	19.7%	19.4%	18.6%	23.4%	18.3%
	Single With Dependent Children	38	33	29	22	16	26	23	187
		34.9%	26.8%	25.4%	18.8%	17.2%	26.8%	16.3%	23.6%
	Single With Non-Dependent Children	5	5	9	7	5	3	36	70
		4.6%	4.1%	7.9%	6.0%	5.4%	3.1%	25.5%	8.8%
	Married No Children	9	11	15	14	8	10	20	87
		8.3%	8.9%	13.2%	12.0%	8.6%	10.3%	14.2%	11.0%
	Married With Dependent Children	40	42	42	47	44	39	28	282
		36.7%	34.1%	36.8%	40.2%	47.3%	40.2%	19.9%	35.5%
	Married With Non-Dependent Children	5	5	5	4	2	1	1	23
		4.6%	4.1%	4.4%	3.4%	2.2%	1.0%	0.7%	2.9%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
RACE	Black	57	61	53	67	58	48	81	425
		52.3%	49.6%	46.5%	57.3%	62.4%	49.5%	57.4%	53.5%
	White	23	35	42	30	18	30	17	195
		21.1%	28.5%	36.8%	25.6%	19.4%	30.9%	12.1%	24.6%
	Coloured	14	14	11	13	7	8	38	105
		12.8%	11.4%	9.6%	11.1%	7.5%	8.2%	27.0%	13.2%
	Indian/Asian	15	13	8	7	10	11	5	69
		13.8%	10.6%	7.0%	6.0%	10.8%	11.3%	3.5%	8.7%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	N / % Col	Extended to Distressed	Distressed to Extended	Responsible to Extended	Extended to Responsible	Clear to Responsible	Clear	Incoming	Total
EDUCATION	No formal education	0	0	0	0	0	1	0	1
		0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.1%
	School education, never matriculated	6	11	5	4	4	7	2	39
		5.5%	8.9%	4.4%	3.4%	4.3%	7.2%	1.4%	4.9%
	High school (with Matric)	43	56	36	37	28	31	27	258
		39.4%	45.5%	31.6%	31.6%	30.1%	32.0%	19.1%	32.5%
	Professional certificate	18	10	15	24	13	8	15	103
		16.5%	8.1%	13.2%	20.5%	14.0%	8.2%	10.6%	13.0%
	Diploma	28	27	26	24	33	13	65	216
		25.7%	22.0%	22.8%	20.5%	35.5%	13.4%	46.1%	27.2%
	Under-graduate degree	7	11	20	21	9	24	22	114
		6.4%	8.9%	17.5%	17.9%	9.7%	24.7%	15.6%	14.4%
	Post-graduate degree	7	8	12	7	6	13	10	63
		6.4%	6.5%	10.5%	6.0%	6.5%	13.4%	7.1%	7.9%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
EMPLOYMENT	Student	1	2	2	5	1	1	11	23
		0.9%	1.6%	1.8%	4.3%	1.1%	1.0%	7.8%	2.9%
		0.1%	0.3%	0.3%	0.6%	0.1%	0.1%	1.4%	2.9%
	Self Employed	29	34	29	21	22	18	14	167
		26.6%	27.6%	25.4%	17.9%	23.7%	18.6%	9.9%	21.0%
		3.7%	4.3%	3.7%	2.6%	2.8%	2.3%	1.8%	21.0%
	Employed	61	75	63	69	66	67	95	496
		56.0%	61.0%	55.3%	59.0%	71.0%	69.1%	67.4%	62.5%
		7.7%	9.4%	7.9%	8.7%	8.3%	8.4%	12.0%	62.5%
	Employed, Considering Retirement	5	8	5	8	2	7	15	50
		4.6%	6.5%	4.4%	6.8%	2.2%	7.2%	10.6%	6.3%
		0.6%	1.0%	0.6%	1.0%	0.3%	0.9%	1.9%	6.3%
	Retired	3	3	4	4	0	3	1	18
		2.8%	2.4%	3.5%	3.4%	0.0%	3.1%	0.7%	2.3%
		0.4%	0.4%	0.5%	0.5%	0.0%	0.4%	0.1%	2.3%
	Unemployed	10	1	11	10	2	1	5	40
		9.2%	0.8%	9.6%	8.5%	2.2%	1.0%	3.5%	5.0%
		1.3%	0.1%	1.4%	1.3%	0.3%	0.1%	0.6%	5.0%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	N / % Col	Extended to Distressed	Distressed to Extended	Responsible to Extended	Extended to Responsible	Clear to Responsible	Clear	Incoming	Total
DEPENDENTS	1 Dependent	24	23	27	19	13	16	15	137
		22.0%	18.7%	23.7%	16.2%	14.0%	16.5%	10.6%	17.3%
	2 Dependents	28	37	25	33	26	28	47	224
		25.7%	30.1%	21.9%	28.2%	28.0%	28.9%	33.3%	28.2%
	3-<6 Dependents	42	46	39	45	43	39	65	319
		38.5%	37.4%	34.2%	38.5%	46.2%	40.2%	46.1%	40.2%
	6-<11 Dependents	5	4	6	3	3	5	8	34
		4.6%	3.3%	5.3%	2.6%	3.2%	5.2%	5.7%	4.3%
	11+ Dependents	1	1	2	0	0	0	1	5
		0.9%	0.8%	1.8%	0.0%	0.0%	0.0%	0.7%	0.6%
	0 Dependent	9	12	15	17	8	9	5	75
		8.3%	9.8%	13.2%	14.5%	8.6%	9.3%	3.5%	9.4%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
PROPERTY	Own it outright	31	39	28	29	34	45	53	259
		28.4%	31.7%	24.6%	24.8%	36.6%	46.4%	37.6%	32.6%
	Own it with the help of a mortgage or loan	21	14	25	20	21	24	43	168
		19.3%	11.4%	21.9%	17.1%	22.6%	24.7%	30.5%	21.2%
	Rent it	38	44	47	45	23	18	28	243
		34.9%	35.8%	41.2%	38.5%	24.7%	18.6%	19.9%	30.6%
	Live here rent-free	19	26	14	23	15	10	17	124
		17.4%	21.1%	12.3%	19.7%	16.1%	10.3%	12.1%	15.6%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
MISSED CREDIT PAYMENT PAST 3 MONTHS	Yes	100	92	87	74	79	15	39	486
		91.7%	74.8%	76.3%	63.2%	84.9%	15.5%	27.7%	61.2%
	No	9	31	27	43	14	82	102	308
		8.3%	25.2%	23.7%	36.8%	15.1%	84.5%	72.3%	38.8%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
MISSED CREDIT PAYMENT PAST 6 MONTHS	Yes	98	103	94	83	81	17	44	520
		89.9%	83.7%	82.5%	70.9%	87.1%	17.5%	31.2%	65.5%
	Missing Values (1.3)	0	0	0	0	0	0	8	8
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.7%	1.0%
	No	11	20	20	34	12	80	89	266
		10.1%	16.3%	17.5%	29.1%	12.9%	82.5%	63.1%	33.5%
	Total	109	123	114	117	93	97	141	794
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

4.3 Multi-dimensional descriptive statistics and analysis

As mentioned earlier, the SEM was constructed using the main dataset excluding the Incoming segment who have little to no experience with credit. Further descriptive analysis was undertaken on the n=794 based (n=653 + n=141 Incoming) to appreciate a fuller picture of the different credit journeys and consumer attitudes and behaviours within them. Seven key insights emerged from this analysis, and these are described below with the support of Tables 14-20.

Insight 1: Consumer financial literacy levels are generally low

Self-efficacy in relation to credit requires financial literacy in order for a consumer to manage their money well and to develop the confidence required to make certain credit behaviour decisions. Those entering the credit market for the first time are described as Incoming – this being one of the financial states per Table 4 above – and these consumers, due to lower literacy levels could be more susceptible to poor lending practices and/or their own lack of good judgement. There are low levels of literacy across the research sample but this is more pronounced in the Incoming segment (9.7% of the sample) where it sits at 55% per Table 14 below. This suggests that when people enter the credit market, they have very little knowledge and are consequently forced to learn through their own experience.

Table 14 - Financial literacy of consumers; n=794

Financial literacy scoring model	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Financial literacy: Understanding of interest – value after of savings after 1 year (B3)								
Score out of /10	7	4	8	8	7	7	7	7
Financial literacy: Understanding of interest – value after of savings after 5 years (B4)								
Score out of /10	8	7	8	8	7	8	9	8
Financial literacy: Understanding of inflation rate - 3% interest versus 5% inflation (B5)								
Score out of /10	7	6	7	7	7	6	8	7
Financial literacy: Understanding of inflation rate: Owe R3000 on credit card – pay min R30 month. Annual rate of 12% (B6)								
Score out of /10	5	5	5	5	4	5	6	5
Total score/40	26	22	28	28	25	26	29	28
Total %	66%	55%	70%	70%	63%	65%	73%	70%

Source: B3. Suppose you have R100 in a savings account and the guaranteed interest rate is 20% per year. You don't make any further payments into this account, and you don't withdraw any money. How much would be in the account at the end of the first year once the interest payment is made? B4. And how much would you have in this account after five years (remembering there are no fees or tax deductions)?

Insight 2: Credit commitments are a burden for most consumers

The struggle to keep up with payments, highlights gaps in consumer financial planning and self-efficacy in relation to credit. This struggle is more pronounced as consumers move to greater levels of indebtedness as shown in Table 15 below. This suggests that the model shown later in this paper should show that the lower a consumer's financial state the less credit self-efficacy they have. This assumes that an increased 'burden' means that it is more difficult for consumers to manage their finances well.

Table 15 - The burden of credit, by credit journey; n=794

	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Burden of keeping up with credit commitments								
It is a heavy burden	27%	12%	10%	25%	33%	27%	27%	58%
It is somewhat of a burden	49%	61%	38%	51%	49%	53%	54%	30%
It is not a burden at all	23%	24%	51%	22%	18%	20%	18%	10%
Don't know	1%	3%	1%	2%	1%	0%	1%	2%

Source: C7. To what extent do you feel that keeping up with your bills and credit commitments is a burden? Figures shown are percentages.

Insight 3: Consumers generally pay the minimum amount, not full outstanding amounts.

Coping mechanisms vary across consumer credit journeys with those in the Incoming segment and those with greater levels of indebtedness tending to borrow money to pay off debts or borrow from family/friends because they have run out of money or use a credit card or overdraft facility or borrow money to buy food or pay bills per Table 16 below. This provides colour to the credit behaviour construct in the model to follow.

Table 16 - Consumer credit repayment behaviour; n=794

	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Credit/store card payment behavior								
Always pay in full	11%	20%	28%	6%	8%	5%	6%	3%
Usually pay in full	14%	23%	23%	10%	5%	12%	17%	6%
Usually pay something between	30%	27%	24%	37%	27%	33%	38%	23%
Usually pay only the minimum	14%	20%	113%	28%	35%	29%	23%	30%
Always pay only the minimum	20%	9%	12%	19%	25%	20%	17%	38%

Source: C5. How do you generally handle paying your bill each month for your credit/store card(s)? Note: Don't know and prefer not to say are hidden.

Insight 4: The ability to cope with unexpected bills influences levels of distress. Per Table 17 below, 44% of the most indebted consumers could not pay any amount toward an unexpected bill. The majority of other consumers are only able to pay an unexpected bill of up to R3,000. This shows how much tension sits within the ladder of indebtedness – the ability for consumers to be able to recover from an unexpected event or financial shock and retain their financial state is unlikely.

Table 17 - Biggest, unexpected bill that consumers can pay; n=794

	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Preparedness: Biggest, unexpected bill you could pay								
R500	19%	13%	13%	20%	25%	27%	18%	16%
R1,000	19%	13%	26%	26%	14%	25%	23%	12%
R3,000	12%	16%	10%	17%	10%	10%	11%	10%
R5,000	10%	25%	10%	6%	7%	6%	6%	8%
R10,000	8%	13%	8%	6%	4%	6%	9%	6%
R25,000 - R100,000	5%	7%	15%	6%	2%	2%	3%	4%
Don't know	1%	1%	1%	1%	0%	2%	2%	0%
Prefer not to say	2%	1%	7%	1%	3%	3%	2%	1%
I couldn't pay unexpected bill	23%	10%	8%	17%	35%	18%	26%	44%

Source: C12. Imagine you have to pay an unexpected bill within the next seven days from today. What is the biggest bill you could pay, either from money you already have, or money you could easily borrow in a way that you consider affordable?

Insight 5: Deliberate goal setting to reduce debt is an effective coping mechanism. This question is one of the items within Credit Default (CD3) and while it did not survive the final modelling it is important to note the implicit message in the data. Table 18 below shows that the most indebted consumers are less likely to stop and replan or reduce their credit spending activity when faced with a payment default scenario. This affirms that indebtedness is a vicious cycle and a downward spiral.

Table 18 - Coping mechanisms; n=794

	I usually continue the way I have in the past → I stop everything and re-plan my goals	I give up other things so that I can pay for credit → I reduce my use of credit where possible
TOTAL	6.2	6.1
INCOMING	6.7	6.4
CLEAR	7.1	6.6
EXTENDED TO RESPONSIBLE	6.0	5.9
DISTRESSED TO EXTENDED	5.7	5.8
CLEAR TO RESPONSIBLE	6.5	5.8
RESPONSIBLE TO EXTENDED	6.3	6.0
EXTENDED TO DISTRESSED	5.5	5.9

Source: C3b. When I do not have enough to cover my credit repayments …? C3c. 10-point bi-polar scale

Insight 6: Missed credit payments are driven by context and not an unwillingness to pay. Table 19 below shows that there is an increase in falling behind on credit payment in the last six months as consumers move down the ladder of indebtedness. Life events drive credit take-up and are more likely to be one of the reasons for falling behind particularly in the Incoming segment. This confirms the literature that unexpected events and related financial shocks influence credit behaviour negatively and also affirms the point that so called bad-debt consumers are not 'bad' people, but good people in bad situations.

Table 19 - Reason for falling behind; n=794

	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Incidence of falling behind on credit commitments for 3 or more months in the last 6 months								
Yes	65%	31%	18%	71%	84%	87%	82%	90%
Reason for falling behind/missing payments								
My financial situation changed, and I was unable to pay	71%	64%	65%	69%	65%	73%	77%	77%
I used the money to pay for essentials / necessities – groceries	33%	34%	35%	33%	41%	28%	22%	39%
I had an emergency expense that required funds e.g. funeral, medical expenses etc…	26%	32%	41%	18%	29%	27%	19%	28%
I had a major life event e.g. wedding, having a child, etc	9%	25%	12%	7%	8%	7%	10%	6%
I used the money to pay for non-necessities / essentials	4%	9%	6%	4%	5%	5%	1%	4%

Insight 7: The Incoming segment are less aware of the importance of a credit record. Table 20 shows that consumers in the bottom two levels of indebtedness as well as Incoming consumers are far less likely to view building a good credit record as important. Once again, Incoming consumers deserve specific attention and should be monitored by lenders more closely than others.

Table 20 - Importance of building a good credit rating; n=794

	TOTAL	INCOMING	CLEAR	EXTENDED TO RESPONSIBLE	DISTRESSED TO EXTENDED	CLEAR TO RESPONSIBLE	RESPONSIBLE TO EXTENDED	EXTENDED TO DISTRESSED
Importance of building a good credit rating								
Top two box Fairly and Very Important	86	79	92	94	89	96	79	81
Average/5:	4.4	4.1	4.6	4.6	4.5	4.7	4.2	4.4

Source: C6. Is building a good credit rating…?

4.4 Specifying the measurement model through confirmatory factor analysis (CFA)

Data was copied into SPSS AMOS (v26) from SPSS Statistics. Confirmatory factor analysis was undertaken on the main dataset across 103 items and 25 constructs using Maximum Likelihood as the extraction method. Each construct was tested separately and factors with loadings less than 0.5 were supressed leaving a total of 76 items. A series of iterative reviews of the factor loadings, squared multiple correlations, modification indices and the standardised residual covariance matrices were conducted for each CFA analysis. A complete step-by-step of this CFA analysis by construct is contained in Appendix 3.

4.4.1 Testing for common method bias (CMB)

The results of this test shown in Table 21 below confirm that there is no problem with CMB with only 13% of the variance loading on the first factor when running a factor analysis on 76 items.

Table 21- Harman's single factor test n=794

Total Variance Explained						
Factor	Initial Eigenvalues		Extraction Sums of Squared Loadings			
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	10.94	14.395	14.395	9.997	13.154	13.154
2	9.068	11.931	26.326			
3	3.342	4.398	30.724			
4	3.194	4.203	34.927			
5	2.768	3.642	38.569			
6	2.258	2.971	41.541			
7	2.042	2.686	44.227			
8	1.895	2.494	46.721			
9	1.678	2.208	48.928			
10	1.568	2.063	50.992			
11	1.406	1.849	52.841			
12	1.36	1.79	54.631			
13	1.307	1.72	56.35			
14	1.22	1.605	57.955			
15	1.106	1.456	59.411			
16	1.019	1.341	60.752			
17	0.988	1.3	62.052			
18	0.951	1.252	63.304			
19	0.894	1.176	64.48			
20	0.84	1.105	65.585			
21	0.813	1.07	66.655			
22	0.804	1.058	67.713			
23	0.76	1	68.713			

Extraction Method: Maximum Likelihood. No Rotation

4.4.2 CFA on Financial Credit Self-efficacy

The six items from the Financial Self-efficacy scale (Lown, 2011) were run using Maximum Likelihood and five of the items attracted factor loadings of greater than 0.5, four of these loading at greater than 0.6 but none surpassed the 0.7 mark. On iterative review of the standardised regression weights, modification indices and standardised residual covariance matrix only four items survived these, being FCSE1, FCSE 2, FCSE4 and FCSE5. On their own these items did not compute although standardised regression weights for each of the items was between 0.6 and 0.7. It was decided to leave four items in place for further testing using FCSE as a contributing factor to a second order construct.

4.4.3 CFA on General Credit Self-efficacy

The four factors discarded from the Financial Credit Self-efficacy scale (Lown, 2011) were modified for this questionnaire to include the word credit. One factor loaded above 0.7 and the remaining three between 0.5 and 0.6. Only two items survived the modelling with loadings between 0.6 and 0.7; however, with zero degrees of freedom, the model could not be computed. GSCE1_RC and GCSE3_RC were retained to test as a part of a second order construct.

4.4.4 CFA on Cognitive Factors

4.4.4.1 Financial Capability

Financial Capability (FCAP) is a candidate designed scale and originally contained seven items. However, FCAP4 was removed during the pilot analysis and on running the remaining six items, two items loaded above 0.7, one item above 0.6 and the three remaining items above 0.5. FCAP3 was removed after inspection of the standardised residual covariance matrix and the model was rerun with five items resulting in an excellent fit on all instrumentation: FCAP1, FCAP2, FCAP5, FCAP6, FCAP7. With FCAP1 and FCAP 7 loading at 0.55 and 0.510 respectively, these were removed to leave FCAP2, FCAP5 and FCAP6 with loadings of 0.73, 0.75 and 0.66 respectively. Per Table 22, Cronbach Alpha for these three items was 0.751, AVE was 0.510 and Composite Reliability equalled 0.757.

4.4.4.2 Financial Confidence

Financial Confidence (FCON) contained four items (Critical Research, 2018) and three of these loaded above 0.8 and one between 0.6 and 0.7. Only three factors survived, scoring 0.84 for FCON1, 0.83 for FCON4 and 0.79 for FCON2. There were no degrees of freedom in this model and so it could not be used independently and was thus retained for use as a part of a second order construct.

4.4.4.3 Financial Management

Financial Management (FMG), another candidate designed scale, was tested with six items as FCAP3 was removed during the pilot analysis. Two items loaded above 0.8 and the remaining four items above 0.7. The model was tested dropping FMG5 but with zero degrees of freedom it would not run. It was decided to retain three items to test it as a part of a second order construct.

4.4.4.4 Investigating a second order construct – Composite Credit Self-efficacy

All of the above constructs produced outputs with zero DF and so were added together to form a second order construct called Composite Credit Self-efficacy. A content analysis of the questions within FCSE, GCSE, FCON and FMG supported the collation of these constructs.

FCAP was successful as an independent construct but a check was undertaken to see if it too belonged with Composite Credit Self-efficacy. This proved troublesome and so this construct was removed from the second order construct but kept aside as an independent cognitive construct. The model fit was excellent except for CMIN/DF which was acceptable at 3,182. The relationship between CCSE and FCSE was 0.61, with FCON 0.75, with FMG 0.84 and with GCSE = 0.34. The 0.34 score for GCSE was concerning but the regression output information described it as significant. The model was checked without it and CMIN/DF was worse at 4,072 but still acceptable, RMSEA was also acceptable. GCSE was incorporated back into the model and the other instrumentation was reviewed. FCON4 looked problematic in the standardised residual covariance matrix and so it was removed and tested again. CMIN/DF worsened slightly to 3,711 but many modification index issues appeared in relation to FCON as well as a negative error on e15 (related to one of the FMG items). Otherwise there was a vast improvement on the overall modification indices. CMIN/DF was still acceptable and all other fit measures were excellent. FMG1 was now causing some problems on the standardised residual covariance matrix. GCSE was still proving to be an issue and so a number of different permutations were run excluding it, reincorporating it, excluding FCON and then reincorporating it. Along the way, FCSE4 and FCSE5 were dropped as were FMG1 and FMG5. The model fit was excellent despite some remaining concerns with the modification indices and standardised residual covariance matrix. The model below was taken forward as a key component of the initial measurement model.

This second order construct is made up of eight items per Table 22 below with factor loading ranging between 0.67 and 0.85, a Cronbach Alpha of 0.758, an AVE of 0.584 and Composite Reliability of 0.918.

4.4.5 CFA on Motivational Factors

4.4.5.1 Debt lifestyle

In the pilot study, six factors loaded on the Debt Lifestyle construct with these being items 1,2,8,15,16 and 17. In the main study, items 14 loaded instead of item 16 along with the other items. It was therefore decided to add item 16 into the mix and so CFA was undertaken on seven items. Three items were taken forward with loadings of 0.78, 0.72 and 0.61. Cronbach Alpha was 0.742, AVE 0.5 and Composite Reliability 0.748 as shown in Table 22 below.

4.4.5.2 Money Prestige

The model for Money Prestige was run based on the loadings from the pilot with items M_A1, M_A2, M_A3, M_A4, M_A5, M_A6, M_A7, M_A8, M_A9 and item M_A19. Items 1 through 9 mapped directly to the Money Attitude construct of Power–Prestige while item 19 came from the Anxiety construct (Yamauchi & Templer, 1982). Six items survived the modelling and per Table 22 below displayed a Cronbach Alpha of 0.878, an AVE of 0.551 and Composite Reliability of 0.880.

4.4.5.3 Debt Morality, Debt Frugality, Money Security, Money Retention and Money Anxiety

The three-item construct of Debt Morality was discarded as two items failed to load above 0.5. Debt Frugality, Money Security, Money Retention and Money Anxiety all failed to compute independently and on review of the wording of the various items within each, it was decided to test their surviving items as a collective construct called Money Conservation.

Money Anxiety proved to be the outsider and did not support the second order construct. Upon rerunning the model there was an excellent model fit with three constructs and 10 items making up the second order construct of Money Conservation. However, despite scoring 0.901 for Composite Reliability it failed on Cronbach Alpha with a score of 0.659 as well as AVE with a score of 0.483. This construct was therefore discarded.

4.4.6 CFA on Affective Factors

4.4.6.1 Materialism Centrality, Materialism Happiness and Materialism Success

None of these three constructs computed independently and upon inspecting the items that did load within them were tested as a part of a second order construct called Materialism Satisfied. This model failed to run successfully and despite attempts at various permutations, problems like factor loadings in excess of 1 made this model inadmissible and it was therefore discarded.

4.4.6.2 Impulsivity

As per the pilot study, IMP8 failed to load above 0.5 with the other items despite being reverse coded per the recommendation of the literature (Rook & Fisher, 1995). An excellent model fit was achieved with five items loading between 0.63 and 0.83. Cronbach Alpha was 0.880, AVE was 0.595 and Composite Reliability was 0.879 per Table 22 below.

4.4.7 CFA on Selective Factors

4.4.7.1 Credit Score and Lender Power

None of the five items under the construct Credit Score loaded above 0.5 and so this construct was removed in its entirety while Lender Power did not compute as a construct and was therefore also discarded. No selective factor constructs were thus taken forward into structured equation modelling.

4.4.8 CFA on Credit Behaviour

All nine items across Credit Usage, Credit Repayment and Credit Default were run as a single model and this was unsuccessful. When running Credit Usage and Credit Default independently as three factor models they all showed zero degrees of freedom.

A further test was undertaken building Credit Behaviour as a second order construct and keeping Credit Usage, Credit Repayment and Credit Default as separate constructs within it. This performed well after removing CU1 and CD3 with a Cronbach Alpha of 0.787 and Composite Reliability of 0.853. However, AVE was just under the cut-off criteria at 0.456. Removing the lowest loading item CR2 at 0.590 had little effect, improving AVE to 0.473. Despite this, it was decided that being so close to the 0.5 cut-off and it being such an integral part of the theoretical model that this construct should be retained.

A further interesting construct related to credit behaviour was also tested, namely Credit Habits but this was discarded as it did not compute independently.

It was seen to be important to assess a number of additional items related to credit behaviour given that it is integral to the theoretical model. These items included the following:

- CREDIT_USAGE_FREQ: The frequency of credit cards/store cards usage (QC4)
- CREDIT_PAYMENT_CHOICE: Consumer repayment choices (QC5)
- CREDIT_COMMIT: Extent to which people are keeping up credit commitments (QC10)
- CREDIT_MISSED_3MNTHS – if credit repayments have been missed - past 3 months
- CREDIT_MISSED_6MNTHS – if credit repayments have been missed - past 3 months

Only the last two items survived the analysis with the other not clearing the 0.4 factor loading cut-off. These two items are binary Yes/No questions and formed a construct labelled NOT_MISSED_PAYMENT, phrased in the negative as 1 = Yes and 2 = NO. According to the Hair et al. model, estimation that includes binary questions while using Maximum Likelihood is acceptable as "both forms of the coefficients reflect both direction and magnitude of the relationship, but are interpreted differently" (Hair et al., 2018, p. 561). When modelled these items loaded extremely well, both above 0.8, but there were zero degrees of freedom and thus as the model was unidentifiable these items were discarded.

4.4.9 Reliability of the retained items and constructs

A total of 103 items were taken forward from the pilot study into CFA and as mentioned above, a number of constructs attracted loadings from items not on the pilot short-list and a few other constructs were assessed along the way. A summary of the reliability measures for each independent surviving construct is contained in Table 22 below – thirty two items across six constructs remain.

Table 22- Confirmatory factor analysis final output of the measurement model

	Mean	Std Dev	Skewness	Kurtosis	Factor loadings	Cronbach Alpha	Average Variance Explained	Composite Reliability
COMPOSITE CREDIT SELF-EFFICACY (CCSE)						0.758	0.584	0.918
FCSE1	2.03	0.90	.519	-.570	0.71			
FCSE2	2.09	0.91	.426	-.672	0.71			
GCSE1_RC	3.01	0.81	-.540	-.144	0.69			
GCSE3_RC	3.06	0.83	-.595	-.220	0.67			
FCON2	6.93	2.18	-.378	-.374	0.83			
FCON4	6.63	2.39	-.321	-.533	0.79			
FMG2	4.49	2.84	.209	-.975	0.84			
FMG4	4.53	2.72	.121	-.949	0.85			
FINANCIAL CAPABILITY (FCAP)						0.751	0.510	0.757
FCAP2	3.80	0.94	-0.816	0.81	0.73			
FCAP5	3.77	0.87	-0.698	0.6	0.75			
FCAP6	3.48	1.02	-0.601	-0.073	0.66			
MONEY PRESTIGE (MP)						0.878	0.551	0.880
M_A1	3.84	1.18	0.711	-0.638	0.77			
M_A3	3.89	1.12	0.735	-0.539	0.79			
M_A4	3.49	1.23	0.316	-1.069	0.71			
M_A5	2.10	1.22	0.764	-0.687	0.75			
M_A6	3.70	1.16	0.542	-0.697	0.75			
M_A9	3.49	1.29	0.366	-1.088	0.68			
DEBT LIFESTYLE (DL)						0.742	0.50	0.748
D_A1	4.58	1.84	0.171	-1.186	0.78			
D_A2	4.13	1.81	-0.085	-1.155	0.72			
D_A8	4.63	1.94	0.281	-1.211	0.61			
IMPULSIVITY (IMP)						0.880	0.595	0.879
IMP2	3.43	1.19	0.198	-1.07	0.82			

IMP3	3.32	1.22	0.227	-1.022	0.77			
IMP4	3.46	1.20	0.282	-1.025	0.79			
IMP5	3.45	1.23	0.286	-1.049	0.83			
IMP7	3.09	1.15	-0.106	-0.992	0.63			
CREDIT BEHAVIOUR (CB)						0.787	0.456	0.853
CU2	6.18	2.50	-0.246	-0.832	0.69			
CU3	6.96	2.49	-0.699	-0.436	0.69			
CR1	6.55	2.48	-0.364	-0.734	0.77			
CR2	6.45	2.45	-0.348	-0.673	0.59			
CR3	6.58	2.59	-0.379	-0.816	0.63			
CD1	6.18	2.57	-0.246	-0.882	0.65			
CD2	6.25	2.47	-0.279	-0.743	0.69			

4.5 Addressing multi-collinearity

Multi-collinearity diagnostics were assessed using linear regression and no instances were found where the VIF exceeded 5. However, for every iteration except where Financial Capability was made the dependent variable the Condition Index for the 7th dimension was over 15 and the highest value in that row each time was Financial; Capability. Despite there being no other competing value for any of the other variables it was decided to remove Financial Capability as a construct. An example of one of these tables using Financial State as the dependent variable is shown in Table 23 below.

Table 23 - Collinearity diagnostics

			Condition	Variance Proportions					
Model	Dimension	Eigenvalue	Index	(Constant)	CCSE	CB	IMP	DL	MP	FCAP
1	1	6.527	1.000	.00	.00	.00	.00	.00	.00	.00
	2	.199	5.728	.00	.05	.05	.06	.14	.08	.02
	3	.098	8.168	.00	.00	.00	.18	.82	.12	.00
	4	.068	9.802	.04	.23	.00	.25	.00	.45	.04
	5	.048	11.688	.03	.26	.08	.36	.01	.31	.21
	6	.045	12.039	.00	.40	.73	.03	.00	.04	.08
	7	.015	20.604	.92	.07	.14	.12	.02	.00	.66

a. Dependent Variable = FINANCIAL_STATE; CCSE = Composite Credit Self-efficacy; CB = Credit Behaviour; IMP = Impulsivity; DL = Debt Lifestyle; MP = Money Prestige; FCAP = Financial Capability

4.6 Discriminant validity and measurement model fit

Using AMOS v26 each iterative correlation matrix was compared, based on Maximum Likelihood, to the hypothesised correlation matrix to assess its fit. Correlation arrows were drawn between each of the constructs and the measurement model was run and assessed X times and each time, based on changes made in the prior iteration, the modification indices, standardised residual covariance matrix and model fit measures were analysed alongside standardised regression weights, p-value significance scores and a table showing

instrumentation for composite reliability, convergent validity (AVE) and discriminant validity. The evaluation criteria for each of these measurements were explained in Chapter 3 above.

Following the steps taken above, no reliability and validity issues were observed in the model as shown in Table 24 below.

Table 24 - Final measurement model validity – n=794

	CR	AVE	MSV	MaxR(H)	CCSE	IMP	DL	MP	CB
COMPOSITE_CREDIT_SELF_EFFICACY	0,788	0,564	0,368	0,895	**0,751**				
IMPULSIVITY	0,881	0,599	0,412	0,890	0,069	**0,774**			
DEBT_LIFESTYLE	0,714	0,555	0,335	0,714	0,203***	0,459***	**0,745**		
MONEY_PRESTIGE	0,879	0,548	0,412	0,884	0,300***	0,642***	0,579***	**0,740**	
CREDIT_BEHAVIOUR	0,887	0,797	0,368	0,889	0,606***	-0,094*	-0,007	0,071	**0,893**

Significance of Correlations: † p < 0.100 ; * p < 0.050 ; ** p < 0.010 ; *** p < 0.001 (Gaskin et al., 2019; Hu & Bentler, 1999)

GoF was excellent per the model fit instrumentation in Table 25. Specifically, CMIN/df needs to be between 1 and 3 and this model scored 2.142. GFI and AGFI are required to be greater than 0.95 and 0.80 respectively and the scores achieved for this model were 0.947 and 0.936 respectively – GFI was slightly under 0.95 but with rounding up it was deemed excellent and not just acceptable. CFI was excellent at 0.965, well above the cut-off of 0.95 while SRMR for the model was 0.059, below the required 0.08. RMSEA for the model was below the minimum requirement of 0.038 being less than 0.06 and PClose was 1.000 well above 0.05 as the minimum. A measurement model with good fit, where the "specified theoretical structure represents reality as represented by the data" (Hair et al., 2018, p. 635), is of critical importance for it to provide empirical output in the structural equation modelling that follows.

Table 25 - GoF for the measurement model

Measure	Estimate	Threshold	Interpretation
CMIN	576,579	--	--
DF	265,000	--	--
CMIN/DF	2.142	Between 1 and 3	Excellent
GFI	0.947	>0.95	Excellent
AGFI	0.936	>0.80	Excellent
CFI	0,965	>0.95	Excellent
SRMR	0,059	<0.08	Excellent
RMSEA	0,038	<0.06	Excellent
PClose	1,000	>0.05	Excellent

(Gaskin & Lim, 2016; Hu & Bentler, 1999; Malhotra & Dash, 2016).

GFI rounded to 0.95 thus marked as excellent.

4.7 Specifying the structural model

The five endogenous constructs from the final measurement model were used as the base for the initial structural model. In specifying the structural model, all covariances were removed from the measurement model and regression lines were drawn from Composite Credit Self-efficacy into the five endogenous constructs representing one Cognitive factor (Financial Capability), two Motivational factors (Money Prestige and Debt Lifestyle) and one Affective factor (Impulse Management). Regression lines were in turn drawn from these five endogenous constructs as well as from Composite Credit Self-efficacy into Credit Behaviour.
A regression line was drawn from Credit Behaviour into the dependent variable Financial State as well as a return line from Financial State into Credit Behaviour. Regression lines were also drawn from Composite Credit Self-efficacy into Financial State and in return from Financial State into Composite Credit Self-efficacy. This model was therefore non-recursive from the outset. Due to the vicious relationship between Composite Credit Self-efficacy and Financial State as well as between Credit Behaviour and Financial State, covariances were drawn between the error terms for these relationships (Kline, 2015). All regression lines from CCSE into MP, DL, IMP and FCAP as well as CB were constrained to 1. The regression lines from CCSE to FS as well as from CB to FS were also constrained to 1 but the return lines from FS to CCSE and FS to CB were not constrained.

The final items making up Composite Credit Self-efficacy and Credit Behaviour can be viewed in Table 32 in Appendix 4. In order to establish the dependent variable of financial state, the various credit journeys were graded to form a scale from 1 to 7 where 1 is the worst financial state and 7 the best financial state or most positive journey.

The control variables mentioned in section 3.3.3 above, were added to the model and were structured as per the descriptive data in Section 4.2 above. The Covid question was considered important to understand as the fieldwork for this research was undertaken between November 2020 and February 2021 and was asked as follows: To what extent, if at all, would you say your current financial status has been affected by COVID-19? 1 = to a lesser extent and 5 = to a very great extent. A covariance line was drawn between all of the control variables.

4.8 Initial structural model

The results when running the initial structural model were CMIN of 157,539 with 613 degrees of freedom, a p-value of 0.00 and an excellent CMIN/df of 2,492. CFI was acceptable at 0.919 while SRMR, RMSEA and PClose were all excellent at 0.073, 0.043 and 1,000 respectively.

4.9 SEM model fit

Structural modelling was undertaken in SPSS AMOS v28 and using the initial structural model and its regression weights as a base, a series of iterative models were developed and reviewed by assessing the modification indices as well as the standardised regression weights for all specified relationships. The model was developed and finalised over 10 iterations.

Before reviewing the relationships between the main constructs in the model, all insignificant relationships between the control variables and the various constructs were removed. A total of 61 regression lines were removed and the model was rerun.

SRMR dropped from excellent to acceptable, CFI improved to 0.912 but was still only acceptable while all other model fit measures were excellent. Of concern was the loading between Financial State and Composite Credit Self-efficacy of 1.15 which should not be possible. This was left in place while further analysis of model fit, modification indices, and standardised covariance matric was undertaken to see if it resolved itself during this process. Two further control variable regression lines were removed in this iteration as they now presented as insignificant. The Modification Indices in this second model were also reviewed and a number of problems were identified:

- The modification indices Impulsivity on Money Prestige was 163,854
- The modification indices Money Prestige on Impulsivity was 121,779
- The modification indices Money Prestige on Debt Lifestyle was 75,114
- The modification indices Impulsivity on Debt Lifestyle was 55,201
- The modification indices Debt Lifestyle on Impulsivity was 17,552

The standardised residual covariance matrix also revealed some significant issues between these constructs. These constructs clearly needed to belong together and so on review of the item statements within them, a second order construct called Living For Today was added. Regression lines were drawn from this second order construct to Debt Life Style, Money Prestige and Impulsivity and a constrain was placed on the Debt Lifestyle relationship. All the regression lines from the control variables into either Debt Lifestyle, Money Prestige or Impulsivity were redirected to this second order construct. A regression line was drawn from Composite Credit Self Efficacy to Living For Today and was constrained and another was drawn from Living For Today to Credit Behaviour but was unconstrained.

The model was run a third time and in this iteration CFI improved to 0,935 while all other model fit measures were excellent. Six of the new relationships between the control variables

and Living For Today presented as insignificant and these were removed along with the relationship between Education and Financial State which was also now insignificant.
Control variables with no further relationships to constructs in the model were then removed completely. These were Number Of Dependents, Life Event First Child and Marital Status
Running the model a fourth time saw very little change in the model fit instrumentation with all non-constrained relationships presenting as significant. However, the effect of Financial State and Composite Credit Self Efficacy still proved troublesome with a beta of 1,245 and a squared multiple correlation of -0.39 (negative) and the modification indices and standardised residual covariance matrix was inspected in detail.

M_A5 was proving to be a problem in its relationship with FMG4 and Financial State exhibiting a covariance result of greater than 4. It was decided to remove M_5 given that five other items remained in the Money Prestige construct but this had no effect on the model fit.
CR3's relationship with FCON2 was also proving problematic but upon testing the model with one or both of these removed saw only marginal increase in CFI to 0,938 (with both removed). Removing M_A5, D_A1, CR3 or FCON2 was therefore deemed unnecessary. None of these amendments influenced the problematic beta value of Financial State on Composite Credit Self-efficacy.

It was therefore decided to assess whether the control variables, specifically those pointed into Financial State, were having an influence over its relationship with Composite Credit Self Efficacy. Systematically each control was removed and the model tested without it, each time reviewing the model fit instrumentation. The model regressed or remained static on the removal of each of the controls except Gender, Get Married, Race, Property Ownership, and Credit Usage Frequency had a slight effect. Reviewing the beta metrics for all of the control variables revealed that Credit Usage Frequency, Property Ownership, Employment, Race and Credit Counsel Recent were significant but ineffectual and these were thus removed from the model. CFI improved to 0,943 but the model still exhibited the problem between Financial State and Composite Credit Self Efficacy.

FCON2, M-A5 and CD2 appeared to be problematic on the SRCVM. The two former items were removed but removing CD2 would mean losing the Credit Default construct and so this was left in the model. CFI improved to 0.946 but the problem with Financial State and its relationship with composite Credit Self efficacy persisted at 1.25 and a squared multiple correlation of -0.42 (negative).

The model was tested adding and removing various constraints and adding and removing the various controls. With a constraint imposed on the regression line between Composite Credit

Self-efficacy and Financial State and the removal of Age as a control variable into Composite Credit Self-efficacy the model resolved and ran with excellent scores except for CFI with an acceptable score of 0.947. Reviewing the standardised residual covariance matrix one last time saw Gender being removed as it had some high scores over 3 and was seen as somewhat superfluous to the model. Personal income albeit significant at p=0.069 had a negligible influence on Living For Today at -0.068 and was also removed. CFI improved to 0.949 and the remainder on the model fit instrumentation was excellent.

4.10 Discussion of findings

The most important construct in the final SEM model is the second order construct of Composite Credit Self-efficacy which is made up of Financial Credit Self-efficacy (β=0,618, R^2=0.38), Financial Confidence (β=0,690, R^2=0.48) and Financial Management (β=0,930, R^2=0.86). The latter two relationships were significant where $p < 0.001$ but Financial Credit Self-efficacy was constrained in the model and hence its significance was not measured. The items within these four sub-constructs all relate to some level of cognitive capability of the consumer to manage their money or credit in a pre-emptive, pragmatic and predictable way. As detailed in the problem definition in Chapter One, South Africa's history excluded people from the financial system, leaving generations of people with little to no experience with money management or decision-making capability around finances. It makes sense therefore, that the Cognitive constructs within the model and Education as a control variable, positively affect Credit Behaviour.

Only three of the psychosocial constructs used in the research instrument survived the modelling, namely Debt Lifestyle, Money Prestige and Impulsivity. On review of the modification indices and the wording of the items within these constructs, it appeared that they were related and were combined into a second order construct called Living For Today. Living For Today's relationship with Debt Lifestyle (β=0.614, R^2=0.88), Money Prestige (β=0.952, R^2=0.91) and Impulsivity (β=0.671, R^2=0.45) were all extremely strong. The latter two relationships were significant at p=<0.001 but Debt Lifestyle was not measured due to it being a constrained variable. This makes logical sense in a South African context where people previously excluded from the economy have an inherent desire for a better lifestyle and the appeal and prestige associated with certain material possessions is also exaggerated.

Composite Credit Self-efficacy has a significant and moderate relationship with Living For Today (β=0.255, R^2=0.16) which in turn has a somewhat significant but weak relationship with Credit Behaviour (β=-0.117, R^2=0.27). Credit Behaviour is made up of Credit Repayment (β=0.882, R^2=0.78) and Credit Default (β=0.902, R^2=0.81) – both of these constructs were constrained and therefore significance cannot be reported.

Credit Behaviour has a significant (p<0.001) and very strong effect on Financial State (β=0,46 R^2=0.15) while Composite Credit Self-efficacy has a moderate direct effect on Financial State (β=0,193, R^2=0.15) and its significance cannot be established as this regression relationship was constrained. Financial State itself has a somewhat significant (p=0.021) and moderate negative return effect on Credit Behaviour (β=-0.221, R^2=0.27) while it has a significant (p<0.001) and extremely strong effect on Composite Credit Self-efficacy (β=0,914, R^2=-0.01).

The control variables that survived the modelling all had significant relationships with their exogenous variables being p=<0.001. Province (β=-0,163) and Life Event Get Married (β=-0,244) both moderately and negatively affect Living For Today while Credit Status Impact COVID moderately and negatively affects Financial State (β=-0,190). While Age Group's relationship with Financial State is significant, its influence is negligible (β=-0.096). Education and Life Event Buy House both moderately affect Credit Behaviour albeit the former in a positive way (β=-0,178) and the latter in a negative way (β=-0,256). Interestingly, Personal Income did not survive the modelling as a control variable and therefore has no effect on Financial State or Credit Behaviour, contradicting the prevailing sentiment in the lending industry which links increasing levels of indebtedness to decreasing personal income. There are those in the lending industry who question this stereotyping and rather refer to contextual factors and experience with money as being more important (B. Dekker and N. Moore, personal communication, October 9, 2020).

South Africans are already overextended in their debt thereby putting themselves at risk, as the above results show that any surprise event could trigger a negative change in a consumer's credit repayment or default behaviour and therefore ultimately weaken their Financial State. The return effect of Financial State on Composite Credit Self-efficacy is extremely worrying in the South African context as it confirms that the ladder of increasing indebtedness is a negative, self-reinforcing cycle. Broad consumer credit self-efficacy, supporting those taking up credit for the first time, helping people stay clear in their credit behaviour, and reacting quickly when consumer's default for the first time are thus critical focus area for the credit industry to urgently address.

4.11 Answering the research questions

Given the above results the research questions can be answered as follows.

4.11.1 Discussion of Research Question 1

Question 1: How does credit self-efficacy and its mediating factors affect consumer credit behaviour?

Only Living For Today as the combined construct of Motivational (Debt Lifestyle and Money Prestige) and Affective (Impulsivity) factors significantly ($p=<0.001$) but negatively affect Credit Behaviour in a moderate way ($\beta=-0.117$).

Only the Cognitive constructs represented within the second order construct of Composite Credit Self-efficacy directly and significantly ($p<0.001$) affect Credit Behaviour ($\beta=-0.363$) .

Hypothesis 1 (H1) that Credit self-efficacy affects credit behaviours is fully confirmed that Composite Credit Self-efficacy has a significant and strong positive influence on Credit Behaviour.

Consumer confidence as an implicit component of Composite Credit Self-efficacy is associated with the healthy use of credit (Atlas et al., 2019) and while it is subjective in nature, it improves the appreciation of sense of self and therefore could affect credit decisions and behaviour (L. Wang et al., 2011). It is usually in response to a shock event (be it an income shock or a macroeconomic shock) that the extent of borrowing, to pay for necessities or to pay off existing debt is amplified, and that this then directly affects credit behaviour (Bar-Gill & Warren, 2008; Bridges et al., 2008; Gathergood, 2012). The relationship between the two control variables of Education and Life Event Buy House with Credit Behaviour proves this point as both moderately affect Credit Behaviour: Education in a positive way and Life Event Buy House in a negative way ($\beta=-0{,}256$).

4.11.2 Discussion of Research Question 2

Question 2: How does cognitive, motivational, affective and selective factors mediate credit self-efficacy's influence on credit behaviour?

The direct effect of Composite Credit Self-efficacy on Financial State is 0.194 per the standardised regression weights shown in Table 26 below. This relationship was constrained to 1 and thus significance was not measured. Comparing the direct effect to the indirect effects in Table 27 below shows that the serial mediation of Living For Today and Credit Behaviour is not greater than the direct effect of Composite Credit Self-efficacy on Financial State albeit bordering on significant ($p=0.088$). The influence of Credit Behaviour as a mediator of

Composite Credit Self-Efficacy's effect on Financial State is clearly significant and much stronger than Composite Credit Self-efficacy's direct effect on Financial State. The direct effect of Composite Credit Self-efficacy on Credit Behaviour is significant (p,0.001) and strong (β=0.363) while the indirect effect via Living For Today is insignificant (p=0.131) and weak with β=-0.115 (negative).

The constructs of Financial Credit Self-efficacy, Financial Confidence and Financial Management form a composite construct called Composite Credit Self-efficacy and its relationship with Credit Behaviour is not mediated by Cognitive, or Selective factors. One could argue that the entire Composite Credit-Self-efficacy construct is in itself made up of Cognitive factors; however, no additional factors like Financial Capability survived the modelling.

The Motivational factors of Debt Lifestyle and Money Prestige as well as the Affective factor Impulsivity, were combined to form a second order construct called Living For Today whose mediation influence on Credit Behaviour is insignificant (p=0.131) even when controlling for where consumers live (Province) and or whether they were recently married (Life Event Get Married).

The outputs for the final SEM including p values and standardised regression weights are shown in Table 26 below and these results inform the discussion to follow.

Table 26 - SEM – Final structural model – Regression weights

			Estimate	S.E.	C.R.	P	Standardised
LIVING_FOR_TODAY	<---	Province	-0.059	0.014	-4.159	***	-0.163
LIVING_FOR_TODAY	<---	LE_Get_Married	-0.338	0.058	-5.837	***	-0.244
FINANCIAL_STATE	<---	Credit_Status_Impact_COVID	-0.3	0.046	-6.526	***	-0.19
FINANCIAL_STATE	<---	Age_Group	-0.175	0.045	-3.852	***	-0.096
CREDIT_BEHAVIOUR	<---	Education	0.194	0.046	4.248	***	0.178
CREDIT_BEHAVIOUR	<---	LE_Buy_House	-0.581	0.115	-5.074	***	-0.256
DEBT_LIFESTYLE	<---	LIVING_FOR_TODAY	1				0.614
MONEY_PRESTIGE	<---	LIVING_FOR_TODAY	1.039	0.094	11.012	***	0.952
IMPULSIVITY	<---	LIVING_FOR_TODAY	0.787	0.067	11.724	***	0.671
CREDIT_BEHAVIOUR	<---	COMPOSITE_CSE	1.397	0.341	4.093	***	0.363
LIVING_FOR_TODAY	<---	COMPOSITE_CSE	0.535	0.118	4.547	***	0.255
CREDIT_BEHAVIOUR	<---	LIVING_FOR_TODAY	-0.215	0.091	-2.361	0.018	-0.117
FINANCIAL_STATE	<---	COMPOSITE_CSE	1				0.194
CREDIT_BEHAVIOUR	<---	FINANCIAL_STATE	-0.167	0.072	-2.324	0.02	-0.224
FINANCIAL_STATE	<---	CREDIT_BEHAVIOUR	0.616	0.111	5.554	***	0.459
COMPOSITE_CSE	<---	FINANCIAL_STATE	0.176	0.023	7.531	***	0.909

Significance of Correlations: † p < 0.100 ; * p < 0.050 ; ** p < 0.010 ; *** p < 0.001 (Gaskin et al., 2019; Hu & Bentler, 1999)

To test for indirect mediating effects bootstrapping was performed in Amos v28 (2000 iterations) whilst the paths between Composite Credit Self-efficacy and Living For Today, Living For Today and Credit Behaviour and Credit Behaviour and Financial State were labelled A, B and C respectively. The path between Composite Credit Self-efficacy and Credit Behaviour was also changed to D. An Estimand was then run in AMOS using these new path constraints to the effects between these paths. The results of the mediation test for indirect effects are presented in Table 27 below:

Table 27 - Indirect effects – n=794

Indirect Effects	Estimate	Lower	Upper	P
Composite Credit Self-efficacy on Financial State via Living For Today and Credit Behaviour	-0.071	-0.193	-0.003	0.088
Composite Credit Self-efficacy on Financial State via Credit Behaviour	0.861	0.395	1.74	0.004
Composite Credit Self-efficacy on Credit Behaviour via Living For Today	-0.115	-0.314	0.008	0.131

Hypothesis 2 (H2) that Cognitive factors, motivational factors, affective factors and selective factors mediate the effect of credit self-efficacy on credit behaviour is partly confirmed in that Composite Credit Self-efficacy does not significantly influence Credit Behaviour via the mediating effect of Living for Today (a combination of Motivational and Affective factors). There are Cognitive factors housed within Composite Credit Self-efficacy that strongly influence Credit Behaviour directly, significantly.

When comparing the wording of the items within the constructs that make up Composite Credit Self-efficacy per Table 32 in Appendix 4, it is clear that these are measuring a similar thing only with slightly different wording. The concepts of Confidence, Control, Commitment, Management, Preparation and Planning are contained within this second order construct. Self-efficacy and Cognitive factors are therefore very closely inter-related when it comes to money matters. This is supported by theory where Riitsalu and Murakas (2019), in exploring the antecedents of financial well-being, recommend improving consumer confidence and motivating consumers to act as an additional requirement to knowledge or skills development. Financial Capability did not survive the modelling given the results of the multicollinearity tests and it is surmised that this is because of its overlap with the concepts within Composite Credit Self-efficacy. Hoelzl and Kapteyn (2011) describe financial capability as a combination of knowledge and behaviour informed by skills and attitudes and Spencer et al. (2015a) highlight financial capability as “the mobilisation of cognitive and practical skills, and other resources, such as attitudes, motivation and values” from the smallest to the largest financial management decisions (p. 11). Being able to manage one’s way through daily difficulties and navigate the events that disrupt one’s financial state is how Critical Research (2018) describe

financial capability and this maps to the items contained within Composite Credit Self-efficacy in the final SEM model per Table 32 in Appendix 4.

Selective factors did not prove meaningful in the SEM but Affective factors making up the second order construct of Living For Today does have a minor negative influence on Credit Behaviour albeit insignificant. Literature supports this construct as O'Guinn and Faber (1989) relate compulsive buying to financial difficulties. Ottaviani and Vandone (2011) found that impulsivity and debt decisions are related and Livingstone and Lunt (1992) speak of pleasure as one of the factors explaining indebtedness.

Cognitive Factors are implicit within Composite Credit Self-efficacy and these directly and positively affect Credit Behaviour in a significant way, while Motivational, Affective and Selective factors do not. Hypothesis 2 (H2) is thus only partly confirmed.

4.11.3 Discussion of Research Question 3

Question 3: What is the relationship between consumer credit behaviour and financial state (level of consumer indebtedness)?

There is a significant ($p=<0.001$) and strong relationship ($\beta=0.459$) between Credit Behaviour and Financial State (level of consumer indebtedness). Credit Behaviour actually positively and significantly ($p=0.004$) mediates the relationship between Composite Credit Self-efficacy and Financial State ($\beta=0.861$).

Hypothesis 3a (H3a) that Credit behaviour affects level of indebtedness is fully confirmed as Credit Behaviour has a significant ($p<0.001$) and strong positive influence ($\beta=0.459$) on Financial State. It is those who are behave prudently when it comes to credit management and behaviour who are able to improve their position on the ladder of indebtedness and prevent themselves slipping into a worse financial state.

Hypothesis 3b (H3b) is fully confirmed as Financial State has a somewhat significant ($p=0.02$) and moderate negative influence ($\beta=-0.224$) on Credit Behaviour. This is explained in that for consumers to manage their levels of indebtedness they sometimes have to put off paying certain creditors or revolve their credit facilities, playing off certain debt accounts against others to make ends meet and maintain their position on the indebtedness ladder. This emerged as a key theme in the qualitative work undertaken prior to this research (KLA, personal communication, April 29, 2020) and would be classified as negative credit behaviour, hence the negative relationship.

4.11.4 Discussion of Research Question 4

Question 4: What is the relationship between credit self-efficacy and its mediating factors on financial state (level of indebtedness)?

The indirect effect of Living For Today when combined with Credit Behaviour is somewhat significant (p=0.088) but negligible (β=-0.071) in its mediation of Composite Credit Self-efficacy on Financial State.

Hypothesis 4a (H4a) that Credit self-efficacy affects financial state (level of indebtedness) is partly confirmed in that Composite Credit Self-efficacy moderately affects Financial State (β=0.194) even when controlling for age (Age Group) and the impact of Covid (Credit Status Impact Covid). Significance could not be tested as this relationship was constrained in the final model.

This is supported by Bridges et al. (2008) who found that a lack of liquidity or adequate gearing in households reasonably predicts their vulnerability to surprise events that are a result of financial imprudence, income shocks or macroeconomic shocks. Gathergood found that consumers who lack self-control "are more likely to suffer adverse financial shocks" (2012, p. 591) and Achtziger et al. (2015) observed a significant negative effect of a lack of self-control on indebtedness. Experiences during your childhood or your first experiences with money (or credit) or even experiences with shock situations are highly influential in helping consumers improve their self-efficacy (Lea et al., 1995b; Livingstone & Lunt, 1992; Richins, 2016; Tokunaga, 1993). The ability of consumers to lean on learned experience in their memory structures makes them more reflective and self-regulating in their decision-making. Shephard et al. (2017) describe how financial capability behaviour is more likely to be influenced at a younger age and education efforts should be directed at improving "optimism, non-impulsiveness, goal orientation, and locus of control" and Sherraden and Grinstein-Weiss (2015) recommend that fresh thinking is required in how we impart financial management knowledge and skills to young people. Further to this, and applicable to all credit consumers not just the young, Mewse et al. (2010b) highlight that higher self-efficacy predicts greater engagement with creditors and the management of one's personal credit situation which this research data supports.

Hypothesis 4b (H4b) that Financial state (level of indebtedness) affects credit self-efficacy is fully confirmed in that Financial State has a significant (p=<0.001) and extremely strong positive effect on Composite Credit Self-efficacy (β=0.909).

In relation to the return influence of Financial State on Composite Credit Self-efficacy, theory supports the fact that consumers who are more indebted are less able to cope in a calm and considered way when problems arise (Livingstone & Lunt, 1992). The significant and large positive effect that Financial State has on Composite credit Self-efficacy supports this: the better you are at holding onto or improving your Financial State affects your Composite Credit Self-efficacy.

Table 28 summarises the confirmation or rejection of the hypotheses.

Table 28- Confirming or rejecting the hypotheses in the theoretical model

H#	Hypothesis Description	Hypothesis Confirmation or Refection
H1	Credit self-efficacy affects credit behaviour.	Fully confirmed
H2	Cognitive factors, motivational factors, affective factors and selective factors mediate the effect of credit self-efficacy on credit behaviour.	Partly confirmed
H3a	Credit behaviour affects financial state (level of indebtedness).	Fully confirmed
H3b	Financial state (level of indebtedness) affects credit behaviour.	Fully confirmed
H4a	Credit self-efficacy affects financial state (level of indebtedness).	Partly confirmed
H4b	Financial state (level of indebtedness) affects credit self-efficacy.	Fully confirmed

4.12 Final structural model

It is important to note that some issues still presented in the correlation modification indices with scores greater than 10.0. No further results greater than 4 were observed in the standardised residual covariance matrix although FCON 1, FCON4, FMG4, M_A1, M_A6, CR2 and CD2 all presented values above 3.0. The final non-recursive SEM is depicted in Figure 6 below.

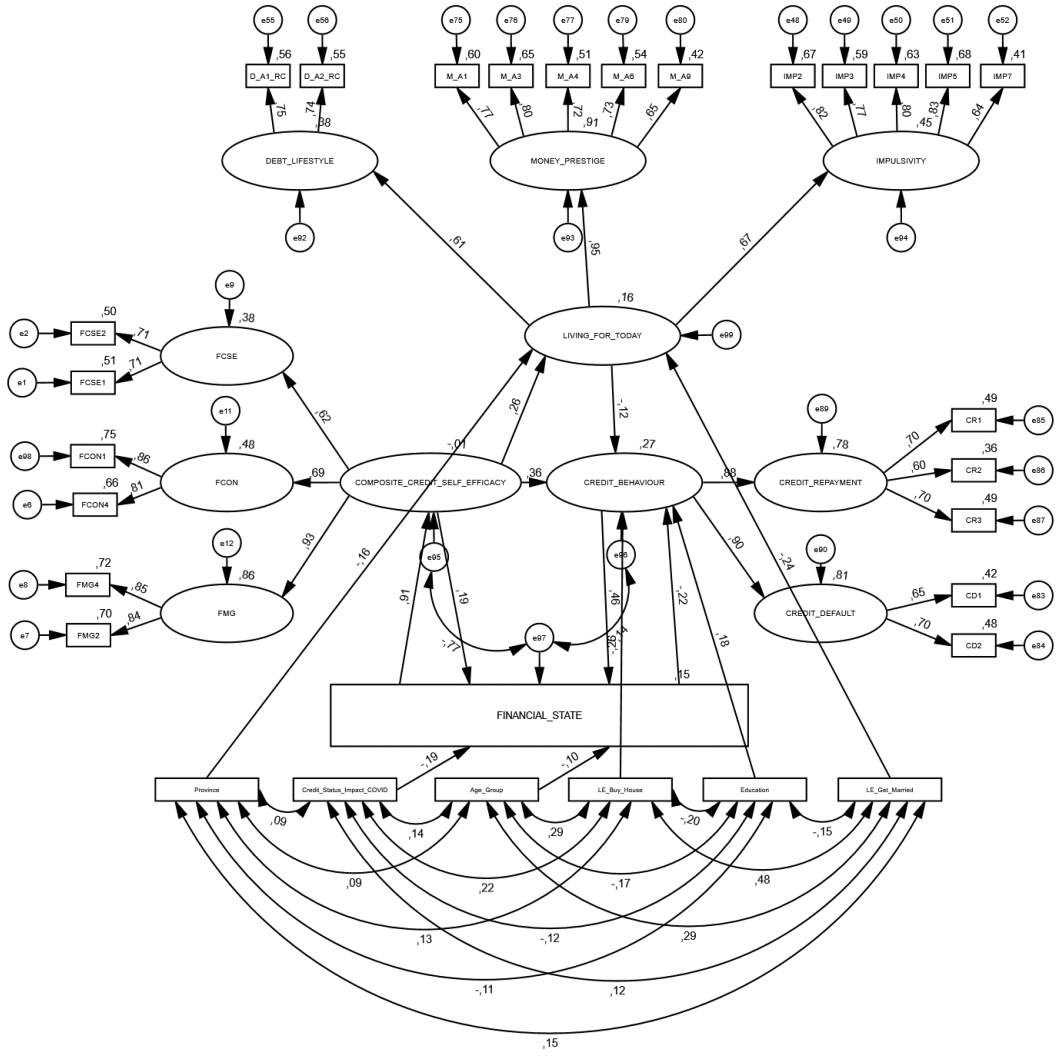


Figure 6 - Final structural model

The GoF instrumentation for this final SEM model is detailed in Table 29 below. The result of this evaluation is that the GoF is excellent all round – CFI was 0.949 and could be deemed acceptable but is classified as excellent at 0.95 (rounded up). R^2 values are moderate to very high across the model except on Composite Credit Self-efficacy where R^2=-0.01. There were no issues with the final standardised residual covariance matrix although the final modification indices did leave a few concerns. Despite this and given the very strong GoF results, the model is deemed a valid model. The research questions and hypotheses are discussed in the Chapter 5, based on the final SEM model and the resulting insight and implications.

Table 29 - GoF for the structural model

Measure	Estimate	Threshold	Interpretation
CMIN	809,059	--	--
DF	381,000	--	--
CMIN/DF	2,124	Between 1 and 3	Excellent
GFI	0.937	>0.95	Excellent
AGFI	0.923	>0.80	Excellent
CFI	0,949	>0.95	Excellent
SRMR	0,057	<0.08	Excellent
RMSEA	0,038	<0.06	Excellent
PClose	1,000	>0.05	Excellent

(Gaskin & Lim, 2016; Hu & Bentler, 1999; Malhotra & Dash, 2016).

CFI rounded to 0.95 thus marked as excellent.

4.13 Additional GoF measure: Bollen-Stine bootstrap

As mentioned in Chapter 3, an additional measure was used to assess model fit. This uses "default ML but with non-parametric bootstrapping" (Kline, 2015, p. 239). The output produced in AMOS, per Figure 7 below, showed a closer fit in 2000 bootstrap samples and an equal or poorer fit in none of the samples. Thus, it fit worse or failed to fit in 0 bootstrap samples and thus testing that the model is accurate (p = 0.000).

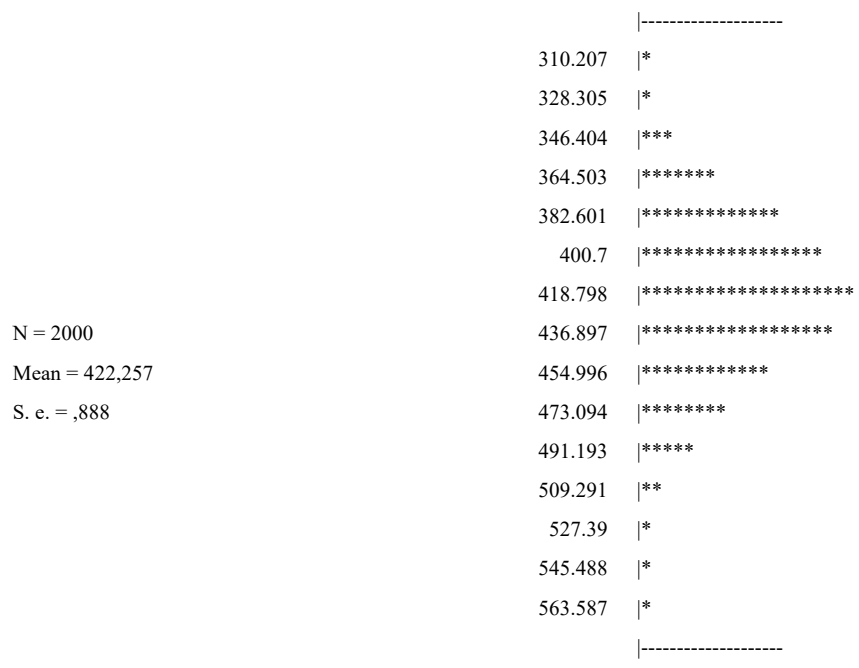


Figure 7 - Bollen-Stine bootstrap output

Tables 32-35 in Appendix 4 contain a complete list of the items in the final SEM model above.

5 CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

Chapter 5 begins with a review of the research journey undertaken for this paper, followed by a discussion of the findings from Chapter 4. Then discussion focuses on answering the research questions posed in Chapter 1 as well as their related hypotheses. The limitations of the study are then presented followed by the contribution that this research makes to both theory and industry. The chapter then closes on recommendations for the credit industry.

5.2 Summary of the study

Research fieldwork was undertaken between November 2020 and February 2021 amongst n=874 South African credit users. A pilot study of n=330 helped refine the research instrument originally constructed through an extensive literature review and prior qualitative research. Exploratory factor analysis on the main data set established that most of the constructs were suitable for statistical modelling, specifically structured equation modelling.

Confirmatory factor analysis was undertaken on all constructs and after iterative updating, a valid and reliable measurement model with excellent model fit was established. Control variables were added to this measurement model which was then used for structural modelling. Iterative improvement of model fit produced a final SEM with excellent model fit instrumentation.

5.3 Conclusions

Literature reveals the deeper meaning to money-related indebtedness speaking of it as a psychological state brought on by an obligation to another (Greenberg, 1980) and an "impersonal arithmetic rationalisation of the immoral" (Graeber, 2011, p. 14). Graeber tells a compelling story about how he wrestled with this statement made by a young lawyer in a casual conversation: "surely one has to pay one's debts", leading him to the insight that by its very nature, debt carries with it a language that portrays "good versus evil" or "hero versus victim" (Graeber, 2011, p. 2). Debt thus holds innate power and this power has made indebtedness central to international politics and the stick of dubious government action across history (Graeber, 2011). In the consumer's world it defines a societal hierarchy (Peebles, 2010) and therefore has the ability to be both good and bad and be employed to help or harm, despite it carrying the reputation of the issuers with it (Carruthers & Espeland, 1998). Both lender and borrower have a reputation, be it assumed or known, and it is from this reputation that each party draws its power. "With great power there must also come - - great responsibility" (Lee

& Ditko, 1962, p. 13) is a proverb popularised by the Spider-Man comic books and in an industry that is growing greater levels of indebtedness (Antoniades, 2018), accountability in managing levels of consumer debt through the responsible use of power is critical.

Credit providers should have empathy and properly support consumer indebtedness given that those that are over-indebted are in difficult and sometime embarrassing circumstances (Tokunaga, 1993). And so, if there is power in money and if credit is a key means of procuring goods and services without the need to carry cash (Cohen, 2007), then it attracts the same influence as money in being a powerful social construct (Soederberg, 2014 as cited in Antoniades, 2018).

Many factors inform consumer context and cognitive factors like financial confidence and better financial management, often directly informed by financial literacy, play a clear role in influencing good financial decision-making and credit behaviour (Liu & Zhang, 2021; Mindra & Moya, 2017; Sabri et al., 2020). Credit self-efficacy and the cability to manage one's finances also has a mediating role in financial well-being (Limbu & Sato, 2019). The model presented in this research confirms these findings from literature and the fact that "financial self-efficacy has a positive effect on financial well-being" (Sabri et al., 2020; Zhao & Zhang, 2020, p. 1621).

Consumers' attitude toward money and the manner in which consumers temper their impulsivity in relation to the desire for more or better, affects the extent to which consumers are prepared for financial shocks (Pradhan et al., 2018; Sabri et al., 2020). In fact, impulsivity has a greater effect on over-indebtedness than the amount of debt held by a consumer and those who battle to manage their impulses are less capable of taking the steps to change this (Frigerio et al., 2020). Literature tells us that impulsivity could result in compulsive buying (Pradhan et al., 2018) and together with risky credit behaviour, this is linked to anxiety and a lack of financial preparedness (Abrantes-Braga & Veludo-de-Oliveira, 2020). An increase in the use of credit also leads to impulse buying and in turn compulsive buying (Khandelwal et al., 2022), creating a negative, vicious cycle.

Organisations involved in the provisioning of credit lean heavily on leveraging their power toward the indebted consumer and their attitude, including the language used, is more often than not patronising where all consumers in debt are viewed as a potential bad debt and the associated image is one of 'bad' people. Credit providers have taken advantage of poor consumer attitudes and behaviours to drive credit usage without the necessary concern for its impacts (Abrantes-Braga & Veludo-de-Oliveira, 2020). The demand side issues relating to personal capability in respect to financial self-efficacy must be solved (Noor et al., 2020) but

lenders need to better understanding consumer segments and their specific and credit journeys, so that the products they take-up are more suited to the consumer's context and situation (Abrantes-Braga & Veludo-de-Oliveira, 2020; Asandimitra & Kautsar, 2019).

Over-indebted consumers are overwhelmingly 'good people in bad situations'. When they took up credit for the first time it was more than likely in good faith, albeit often with naivety. A more balanced approach is therefore required in the provision of credit (Abrantes-Braga & Veludo-de-Oliveira, 2020). Beside changes in policy to better support impulsive individuals (Frigerio et al., 2020), a proactive focus on financial literacy, knowledge and skills to change how consumers use credit, and therefore limit their impulsive and compulsive buying, is required (Khandelwal et al., 2022; Noor et al., 2020). Consumers need this to be better prepared when financial shocks inevitably arrive, prompting a chain of events which could lead to further indebtedness if not managed correctly (Abrantes-Braga & Veludo-de-Oliveira, 2020).

Self-efficacy, where consumers take responsibility for their personal credit behaviour is therefore crucial (Abrantes-Braga & Veludo-de-Oliveira, 2020) and in order to scale up consumer capability through financial literacy, financial management and financial confidence, new and different thinking is required. Lenders cannot be reactive and this development of credit self-efficacy needs to start early on the lives of young people, particularly those starting out in their first jobs. Perhaps considering workplace programmes as recommended by Sabri et al. (2020) is the answer to more rapid financial inclusion and therefore a positive upliftment in people's financial state and their lives overall (Noor et al., 2020).

5.4 Policy recommendations

The credit industry definitely has a blind spot in relation to consumer context and related psychosocial factors. Lenders need to better understand why consumers take out credit in the first place, whether they could they truly afford it at the time and whether they can they afford it now. They need to be able to answer how well equipped consumers are to deal with life's financial ups and downs, how will they respond if they hit financial trouble, what is happening in their lives and how might this affect their future credit journey and how their credit obligations with multiple credit providers influence their ability to manage credit repayment obligations. These questions are typically never asked at the point of credit take-up because this data that could inform the answer to these questions is either not collected or is collected and stored in a disparate fashion that is not available from a single source. Data on the

consumer's context is therefore everywhere and nowhere at the same time. As a result, consumers are becoming more indebted and creditors are spending more to collect less.

A number of key shifts are required in the industry:

Fragmented and incomplete data	--->	Single view of the customer
Customers are just numbers	--->	A very human, empathetic connection
Once-off, transactional conversations	--->	Ongoing dialogue with customers

The shifts described above will enable lenders to see consumers as good people in bad situations rather than all indebted consumers being viewed as 'bad debt'.

Operational tools have over time increased the *efficiency* of the credit system but have reduced the *effectiveness* of lender interactions with consumers and two big questions arise:

- What if lenders could restore 'bad consumers' to financial goodness through a better understanding of their context?
- What if lenders could help prevent customers from getting out of their depth in the first place?

It was identified through the inputs to this research that many consumers take out credit almost immediately after getting a job and receiving their first pay check (KLA, personal communication, April 29, 2020), before they have had a chance to gain financial competence and adequately prepare for unforeseen events. Then, with little to no experience of how to effectively manage their spending and budget appropriately, they spend beyond what they cannot afford. Their slow reaction to being over-indebted and a lack of sufficient coping mechanisms available to them, leaves them in a difficult position from which it is hard to recover. This is further exacerbated by unforeseen events, surprises and financial shocks like retrenchment or a car accident and this combined with low levels of credit self-efficacy can trigger a slide down the indebtedness ladder which is typically associated with a great deal of stress. Despite a willingness to reverse this slide, a lack of financial literacy amongst many consumers combined with a lack of experience and therefore credit self-efficacy makes it very difficult to climb back up the ladder to a healthier financial state.

Relationships between consumers and credit providers actually deteriorate over time as many credit providers are considered to be only interested in sales and collections with little support placed on supporting the consumer credit journey with concrete tools during the course of their credit journey. By far the best approach for all concerned is to stop consumers from slipping down the ladder in the first place and this requires serious review of credit vetting practices,

particularly for Incoming consumers. This could be combined with an 'intensive care' period to help these consumers avoid spending above their means from early-on and to create industry-wide collaborative mechanisms that help all consumers be more personally prepared and capable in handling inevitable life events and shocks. When consumers do strike upon difficult times there is a short window before the situation becomes problematic and consumers then miss payments and begin to amplify their negative credit behaviour (using debt to pay for necessities or for more debt). It is this struggle that keeps consumers from moving upward on the indebtedness ladder and into a healthier financial state. Credit providers need to engage in creative solutions to help consumers address their diminished payment capacity as early as possible, pushing for consumers to catch-up as is current practice, is counterproductive.

Understanding the relationships described in the SEM model can inform credit provider strategies at all stages of the credit cycle to address these two questions. Understanding a consumer's level of Credit Self-efficacy is less important than understanding their current Financial State and how this might then be a critical determinant of whether a life event or shock will push this consumer down the credit ladder or if the consumer will be able to re-group and climb back up the ladder. There is a significant opportunity for credit providers to move consumers up the payment hierarchy and build long-term loyalty by presenting real practical solutions to real consumer problems. This requires that lenders showing empathy in understanding a consumer's Financial State and by taking a long-term view on which surprise events they might be more likely to encounter rather than focusing on short-term movements in the consumer's credit repayment habits.

A coalition of industry lenders working together, using the insights from this research, could halve the cost of lender collections over time, restore and grow the lending market and sustainably ensure a more positive credit provider to consumer relationship. Putting more control into the hands of the consumer, through a better understanding of the consumer is the way forward. The specific recommendations made in this paper, should be accompanied by ongoing tracking research as a collaborative industry effort to measure indebtedness across all consumer credit journeys with the aim of reversing the overall negative cycle of ever-increasing debt.

Recommendation #1: Start with children

Build Financial Preparedness into early childhood development education and develop programmes for new parents to help them impart this cognitive capability to their children at an early age. Spencer (2015) recommends teaching early and then ensuring reinforcement of this learning at key moments in an ongoing way.

Recommendation #2: Educate through simulation

Educate consumers in how to apply knowledge through practical examples and situational narratives that simulate real life decision-making in relation to credit. Spencer (2015) encourages more heuristic and experimental learning so that consumers feel more confident and in control when making real life decisions.

Recommendation #3: Encourage contingency saving

Much effort has been put into messaging that encourages savings, but it is not made clear enough that a lack of savings as a safety net will create a default to escape a downward spiral. Saving for the long term and for near term contingencies is critical to avoid being caught out by life events which cause surprise or shock. More industry effort is required to teach basic budgeting, tracking and management of the mechanics of actual income and expenses including more specific literacy when it comes to interest rates and how they work.

Recommendation #4: Over-communicate in a familial way

Communicate with consumers at every level of the indebtedness ladder as shock events can happen to anyone at any moment and cause a slip in repayments or worse still a default position. Once in this position it is difficult for consumers to recover. Consumers tend to turn to family and friends when indebtedness becomes too much and there is opportunity for lenders to play a more supportive role in rehabilitating over-indebted consumers through family-like support rather than the typical bad debt management techniques.

Recommendation #5: Prioritise focus on Incoming consumers

Incoming consumers are a particular cause for concern. They are 2.4 times as likely to be on government benefits and at least 2 times as likely to be supporting parents or extended family members. Incoming consumers are also 2 to 3 times as likely to be planning a major life event in the next six months (like getting married, having children or buying a house) and this is a significant motivation to take out credit. The financial buffer of Incoming consumers is better than average, but still 41% below Clear consumers. Twenty-five percent of Incoming consumers hit payment difficulties within their first six months of taking up credit once a major life event occurs. They are also 48% more likely to have trouble controlling spending once they have access to credit due to higher materialism and impulsivity scores driven by the need to establish themselves and their lifestyle.

5.5 Avenue for future studies

This research contributes to theory in that previous studies focus on a single construct or a few constructs – typically isolating constructs like cognitive factors, motivational factors, affective

factors and selective factors and measuring these independently of one another and their relationship with Credit Behaviour or Financial State. No study has measured such an extensive range of variables and analysed them as a single model.

Future research can focus on a more composite understanding of the consumer and their circumstances, building on the constructs identified as significant in this study and specifically measuring the interdependence between all of these items. It should also seek alternative factors within the categories that did not emerge as significant in this research, e.g. other Selective factors and other constructs that define credit behaviour in a way that can be mapped to actual transactional data. When undertaking further research it would be recommended to focus on fewer factors with more in-depth analysis around each, re-assessing the influence of the control variables given this focus on a tighter set of key factors. A broader sample, encompassing those with and without access to the internet would also be an important consideration for future studies to present more financially inclusive recommendations and appreciate the influence of technology on credit self-efficacy and a healthier financial state. Broadening the sample to include more rural and town-based audiences, beyond city and major metropolitan areas could also help with a better understanding of the different forms of credit across these geographies. Ultimately a extending this study to examine the supply side could be extremely helpful to fully appreciate the information asymmetry and lender power within the South African context.

5.6 Summary

This chapter presented a discussion of the research findings and used these findings to answer the research questions and confirm or reject the hypotheses. It highlighted the limitations of this study and its contribution to theory and to the credit industry. A number of recommendations for the industry were also made to complete this chapter.

"We all know the language of money,
but the possibilities of its grammar
remain the capacity of a privileged elite."
(Schraten, 2020, p. 183)

REFERENCES

Abrantes-Braga, F. D. M. A., & Veludo-de-Oliveira, T. (2020). Help me, I can't afford it! Antecedents and consequence of risky indebtedness behaviour. *European Journal of Marketing*, *54*(9), 2223–2244. https://doi.org/10.1108/EJM-06-2019-0455

Achtziger, A., Hubert, M., Kenning, P., Raab, G., & Reisch, L. (2015). Debt out of control: The links between self-control, compulsive buying, and real debts. *Journal of Economic Psychology*, *49*, 141–149. https://doi.org/10.1016/j.joep.2015.04.003

Alchemer. (2021). *Enterprise online survey software & tools*. https://www.alchemer.com/

Antoniades, A. (2018). Gazing into the abyss of indebted society: The social power of money and debt. *Political Studies Review*, *16*(4), 279–288. https://doi.org/10.1177/1478929918757135

Asandimitra, N., & Kautsar, A. (2019). The influence of financial information, financial self efficacy, and emotional intelligence to financial management behavior of female lecturer. *Humanities and Social Sciences Reviews*, *7*(6), 1112–1124. https://doi.org/10.18510/hssr.2019.76160

Atlas, S. A., Lu, J., Micu, P. D., & Porto, N. (2019). Financial knowledge, confidence, credit use, and financial satisfaction. *Journal of Financial Counseling and Planning*, *30*(2), 175–190. https://doi.org/10.1891/1052-3073.30.2.175

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1007/978-3-319-75361-4

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman and Company.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, *1*(2), 164–180. https://doi.org/10.1111/j.1745-6916.2006.00011.x

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, *38*(1), 9–44. https://doi.org/10.1177/0149206311410606

Bandura, A. (2015). On deconstructing commentaries regarding alternative theories of self-regulation. *Journal of Management*, *41*(4), 1025–1044. https://doi.org/10.1177/0149206315572826

Bar-Gill, O., & Warren, E. (2008). Making credit safer. *University of Pennsylvania Law Review*, *157*(1), 1–101. https://dash.harvard.edu/handle/1/12967874

Bateman, M. (2019). South Africa's post-apartheid microcredit experiment: Moving from state-enforced to market-enforced exploitation. *Forum for Social Economics*, *48*(1), 69–97. https://doi.org/10.1080/07360932.2015.1056202

Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research*, *28*(4), 670–676. https://doi.org/10.1086/338209

Bridges, S., Disney, R., & Gathergood, J. (2008). *Drivers of over indebtedness*. Report to the Department for Business, Enterprise and Regulatory Reform, Centre for Policy Evaluation, University of Nottingham. https://webarchive.nationalarchives.gov.uk/ukgwa/20090609003228/http://www.berr.gov.uk/files/file49248.pdf

Carruthers, B. G., & Espeland, W. N. (1998). Money, meaning, and morality. *American Behavioral Scientist*, *41*(10), 1384–1408.

Celsi, M. W., Nelson, R. P., Dellande, S., & Gilly, M. C. (2017). Temptation's itch: Mindlessness, acceptance, and mindfulness in a debt management program. *Journal of Business Research*, *77*, 81–94. https://doi.org/10.1016/j.jbusres.2017.03.002

ClearScore. (2017). *What is a credit score?* https://www.clearscore.com/za/learn/credit-score-and-report/what-is-a-credit-score

Cohen, M. J. (2007). Consumer credit, household financial management, and sustainable consumption. *International Journal of Consumer Studies*, *31*(1), 57–65. https://doi.org/10.1111/j.1470-6431.2005.00485.x

Cowan, K. (2019). Anything you can imagine is possible: How imagining can overcome visceral drive states elicited in promotional advertising. *Journal of Business Research*, *120*, 529–538. https://doi.org/10.1016/j.jbusres.2019.04.008

Credit Bureau Association. (2021). *Welcome to the Credit Bureau Association*. https://www.cba.co.za/

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed-method approaches* (3rd ed.). Sage Publications.

Critical Research. (2018). *Money Advice Service financial capability survey: Technical report* (Issue December). https://masassets.blob.core.windows.net/cms/files/000/001/121/original/Financial_Capability_Survey_2018_-_Survey_Technical_Report.pdf

de Meza, D., Irlenbusch, B., & Reyniers, D. (2008). *Financial capability: A behavioural economics perspective* (Issue 69). (Consumer Research Report No. 69) Financial Services Authority. https://www.fca.org.uk/publication/research/fsa-crpr69.pdf

Disney, R., & Gathergood, J. (2013). Financial literacy and consumer credit portfolios. *Journal of Banking and Finance*, *37*(7), 2246–2254. https://doi.org/10.1016/j.jbankfin.2013.01.013

Eighty20. (2020). *Covid and the consumer*. https://www.eighty20.co.za/covid-and-the-consumer/

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

Eugene. (2007, July 22). *How the NCA came about*. The Forum SA. https://www.theforumsa.co.za/forums/showthread.php/1441-HOW-THE-NCA-CAME-ABOUT

Experian. (2020). *A look at the new normal: Experian Consumer Default Index* (Issue June). (Quarter 1). https://www.experian.co.za/content/dam/marketing/emea/soafrica/za/assets/Experian-Consumer-Default-Index-January-to-April-2020.pdf

Fernandes, D., Lynch, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, *60*(8), 1861–1883. https://doi.org/10.1287/mnsc.2013.1849

Ferreira, M. C., & Scaraboto, D. (2016). "My plastic dreams": Towards an extended understanding of materiality and the shaping of consumer identities. *Journal of Business Research*, *69*(1), 191–207. https://doi.org/10.1016/j.jbusres.2015.07.032

Flores, S. A. M., & Vieira, K. M. (2014). Propensity toward indebtedness: An analysis using behavioral factors. *Journal of Behavioral and Experimental Finance*, *3*, 1–10. https://doi.org/10.1016/j.jbef.2014.05.001

Forlicz, M., & Rólczyński, T. (2019). Overdue debt and selected personality traits – a research based on international surveys. *Journal of International Studies*, *12*(3), 198–211. https://doi.org/10.14254/2071-8330.2019/12-3/16

Fowler, F. J. (2014). *Survey research methods* (5th ed.). Sage Publications.

Freire, P. (2005). Pedagogy of the oppressed. In *Pedagogy of the oppressed*. (Translated by M. B. Ramos, 30th Anniversary Edition). Continuum International Publishing.

Frigerio, M., Ottaviani, C., & Vandone, D. (2020). A meta-analytic investigation of consumer over-indebtedness: The role of impulsivity. *International Journal of Consumer Studies*, *44*(4), 328–342. https://doi.org/10.1111/ijcs.12570

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

Gardarsdóttir, R. B., & Dittmar, H. (2012). The relationship of materialism to debt and financial well-being: The case of Iceland's perceived prosperity. *Journal of Economic Psychology*, *33*(3), 471–481. https://doi.org/10.1016/j.joep.2011.12.008

Gaskin, J. (2011). *Common method bias*. [Video]. https://www.youtube.com/watch?v=w7zZCBlRXog

Gaskin, J., James, M., & Lim, J. (2019). *Master validity tool*. http://statwiki.gaskination.com/index.php?title=CFA#Validity_and_Reliability

Gaskin, J., & Lim, J. (2016). *Model fit measures*. http://statwiki.gaskination.com/index.php?title=CFA#Metrics

Gathergood, J. (2012). Self-control, financial literacy and consumer over-indebtedness. *Journal of Economic Psychology*, *33*(3), 590–602. https://doi.org/10.1016/j.joep.2011.11.006

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, *17*(2), 183–211. https://doi.org/10.5465/amr.1992.4279530

Godsall, J., Jain, A., Javanmardian, K., Nauck, F., Ray, S., & Yang, S. (2017). *Unlocking the next horizon of growth in the life insurance industry*. McKinsey. https://www.mckinsey.com/industries/financial-services/our-insights/unlocking-the-next-horizon-of-growth-in-the-life-insurance-industry

Graeber, D. (2011). *Debt: The first 5,000 years*. Melville House Publishing.

Greenberg, M. S. (1980). A theory of indebtedness. In K. J. Gergen (Ed.), *Social exchange* (pp. 3–26). Plenum Press. https://doi.org/10.1007/978-1-4613-3087-5_1

Greenberg, M. S., & Shapiro, S. P. (1971). Indebtedness: An adverse aspect of asking for and receiving help. *Sociometry*, *34*(2), 290–301.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate Data Analysis* (8th ed.). Cengage. https://doi.org/10.1002/9781119409137.ch4

Halperin, R. (2003). Money in an unequal world. *American Anthropologist*, *105*(1), 190–192. https://doi.org/10.1111/j.1548-1433.2009.01214.x

Henry, P. C. (2005). Social class, market situation, and consumers' metaphors of (dis)empowerment. *Journal of Consumer Research*, *31*(4), 766–778. https://doi.org/10.1086/426610

Hoelzl, E., & Kapteyn, A. (2011). Financial capability. *Journal of Economic Psychology*, *32*(4), 543–545. https://doi.org/10.1016/j.joep.2011.04.005

Hoffmann, A. O. I., & McNair, S. J. (2019). How does consumers' financial vulnerability relate to positive and negative financial outcomes? The mediating role of individual

psychological characteristics. *Journal of Consumer Affairs*, *53*(4), 1630–1673. https://doi.org/10.1111/joca.12233

Hoyle, R. H. (2012). *Handbook of structural equation modeling*.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

IBM. (2021). *Collinearity diagnostics*. https://www.ibm.com/docs/en/spss-statistics/28.0.0?topic=sales-collinearity-diagnostics

Indebtedness. (2021). In *Cambridge English Dictionary*. https://dictionary.cambridge.org/dictionary/english/indebtedness

James, D. (2012). Money-go-round: Personal economies of wealth, aspiration and indebtedness. *Africa*, *82*(1), 20–40. https://doi.org/10.1017/S0001972011000714

James, D. (2014). "Deeper into a hole?" Borrowing and lending in South Africa. *Current Anthropology*, *55*(Suppl. 9), 17–29. https://doi.org/10.1086/676123

Japutra, A., Ekinci, Y., & Simkin, L. (2019). Self-congruence, brand attachment and compulsive buying. *Journal of Business Research*, *99*, 456–463. https://doi.org/10.1016/j.jbusres.2017.08.024

Kamleitner, B., Hoelzl, E., & Kirchler, E. (2012). Credit use: Psychological perspectives on a multifaceted phenomenon. *International Journal of Psychology*, *47*(1), 1–27. https://doi.org/10.1080/00207594.2011.628674

Kamleitner, B., & Kirchler, E. (2007). Consumer credit use: A process model and literature review. *Revue Europeenne de Psychologie Appliquee*, *57*(4), 267–283. https://doi.org/10.1016/j.erap.2006.09.003

Kelly-Louw, M. (2009). Prevention of overindebtedness and mechanisms for resolving overindebtedness of South African consumers. In J. Niemi, I. Ramsay, & W. C. Whitford (Eds.), *Consumer credit, debt, and bankruptcy: Comparative and international perspectives* (pp. 175–197). Hart Publishing.

Kenny, D. A. (2020). *SEM: Fit*. http://www.davidakenny.net/cm/fit.htm

Khalil, S. H., & Raza, A. (2018). The Influence of external stimuli on impulsive buying behaviour. In *Journal of Business and Tourism*.

Khandelwal, R., Kolte, A., Veer, N., & Sharma, P. (2022). Compulsive buying behaviour of credit card users and affecting factors such as financial knowledge, prestige and retention time: A cross-sectional research. *Vision*, *26*(2), 172–180. https://doi.org/10.1177/0972262920981428

Kirsten, M. (2006). *Policy initiatives to expand financial outreach in South Africa*. Paper delivered at World Bank/Brookings Institute Conference 30 & 31 May. https://www.dbsa.org/sites/default/files/media/documents/2021-03/Policy initiatives to expand financial outreach in South Africa 30 May 2006.pdf

Kline, R. B. (2015). *Principles and practices of structural equation modelling* (4th ed.). Guildford Press.

Krige, P. F. D. (2011). *Power, identity and agency at work in the popular economies of Soweto and Black Johannesburg*. (PhD Theisis) Dept of Anthropology, Faculty of Humanities, University of the Witwatersrand, South Africa.

Lea, S. E. G., Webley, P., & Levine, R. M. (1993). The economic psychology of consumer debt. *Journal of Economic Psychology*, *14*(1), 85–119. https://doi.org/10.1016/0167-4870(93)90041-I

Lea, S. E. G., Webley, P., & Walker, C. M. (1995a). Psychological factors in consumer debt: Money management, economic socialization, and credit use. *Journal of Economic Psychology*, *16*(4), 681–701. https://doi.org/10.1016/0167-4870(95)00013-4

Lea, S. E. G., Webley, P., & Walker, C. M. (1995b). Psychological factors in consumer debt: Money management, economic socialization, and credit use. *Journal of Economic Psychology*, *16*(4), 681–701. https://doi.org/10.1016/0167-4870(95)00013-4

Lee, S., & Ditko, S. (1962). *Amazing fantasy # 15: Spiderman intro*. Marvel Comics.

Limbu, Y. B., & Sato, S. (2019). Credit card literacy and financial well-being of college students: A moderated mediation model of self-efficacy and credit card number. *International Journal of Bank Marketing*, *37*(4), 991–1003. https://doi.org/10.1108/IJBM-04-2018-0082

Liu, L., & Zhang, H. (2021). Financial literacy, self-efficacy and risky credit behavior among college students: Evidence from online consumer credit. *Journal of Behavioral and Experimental Finance*, *32*. https://doi.org/10.1016/j.jbef.2021.100569

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

Lown, J. M. (2011). Development and validation of a Financial Self-Efficacy Scale. *Journal of Financial Counseling and Planning*, *22*(2), 54–63.

MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, *88*(4), 542–555. https://doi.org/10.1016/j.jretai.2012.08.001

Malhotra, N. K., & Dash, S. (2016). *Marketing research: An applied orientation* (7th ed.). Pearson.

Marron, D. (2012). Producing over-indebtedness: Risk, prudence and consumer vulnerability. *Journal of Cultural Economy*, *5*(4), 407–421. https://doi.org/10.1080/17530350.2012.703144

Mewse, A. J., Lea, S. E. G., & Wrapson, W. (2010a). First steps out of debt: Attitudes and social identity as predictors of contact by debtors with creditors. *Journal of Economic Psychology*, *31*(6), 1021–1034. https://doi.org/10.1016/j.joep.2010.08.009

Mewse, A. J., Lea, S. E. G., & Wrapson, W. (2010b). First steps out of debt: Attitudes and social identity as predictors of contact by debtors with creditors. *Journal of Economic Psychology*, *31*(6), 1021–1034. https://doi.org/10.1016/j.joep.2010.08.009

Middle-class South Africans... (2021, June 7). *BusinessTech*. https://businesstech.co.za/news/finance/496617/debt-data-shows-middle-class-people-in-south-africa-are-battling-to-make-ends-meet/

Mindra, R., & Moya, M. (2017). Financial self-efficacy: A mediator in advancing financial inclusion. *Equality, Diversity and Inclusion*, *36*(2), 128–149. https://doi.org/10.1108/EDI-05-2016-0040

National Credit Regulator. (2021). *Credit providers*. https://www.ncr.org.za/register_of_registrants/registered_cp.php

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Sage Publications.

Noor, N., Batool, I., & Arshad, H. M. (2020). Financial literacy, financial self-efficacy and financial account ownership behavior in Pakistan. *Cogent Economics and Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1806479

Nyhus, E. K., & Webley, P. (2001). The role of personality in household saving and borrowing behaviour. *European Journal of Personality*, *15*(S1), S85–S103. https://doi.org/10.1002/per.422

O'Guinn, T. C., & Faber, R. J. (1989). Compulsive buying: A phenomenological exploration. *Journal of Consumer Research*, *16*(2), 147–157. https://doi.org/10.1086/209204

Old Mutual, & Peppercorn Research. (2021). *Savings and investment monitor: Full detailed research report*. https://www.oldmutual.co.za/savingsmonitor/

Ottaviani, C., & Vandone, D. (2011). Impulsivity and household indebtedness: Evidence from real life. *Journal of Economic Psychology*, *32*(5), 754–761. https://doi.org/10.1016/j.joep.2011.05.002

Parliamentary Monitoring Group. (2000). *Micro-lending industries*. https://pmg.org.za/committee-meeting/4474/

Parliamentary Monitoring Group. (2003). *Indebtedness of South Africans: Hearings*. https://pmg.org.za/committee-meeting/2608/

Peebles, G. (2010). The anthropology of credit and debt. *Annual Review of Anthropology*, *39*(1), 225–240. https://doi.org/10.1146/annurev-anthro-090109-133856

Pereira, M. C., & Coelho, F. (2019). Mindfulness, money attitudes, and credit. *Journal of Consumer Affairs*, *53*(2), 424–454. https://doi.org/10.1111/joca.12197

Pirog, S. F., & Roberts, J. A. (2007). Personality and credit card misuse among college students: The mediating role of impulsiveness. *Journal of Marketing Theory and Practice*, *15*(1), 65–77. https://doi.org/10.2753/MTP1069-6679150105

Pradhan, D., Israel, D., & Jena, A. K. (2018). Materialism and compulsive buying behaviour: The role of consumer credit card use and impulse buying. *Asia Pacific Journal of Marketing and Logistics*, *30*(5), 1239–1258. https://doi.org/10.1108/APJML-08-2017-0164

Prelec, D. Loewenstein, G. (1998). The red and the black: Mental accounting of savings and debt. *Marketing Science*, *17*(1), 4–28.

Puri, M., & Robinson, D. T. (2007). Optimism and economic choice. *Journal of Financial Economics*, *86*(1), 71–99. https://doi.org/10.1016/j.jfineco.2006.09.003

Reynolds, N., Diamantopolous, A., & Schlegelmilch, B. (1993). Pre-testing in questionnaire design: A review of the literature and suggestions for further research. *Journal of the Market Research Society*, *35*(2), 171–181.

Richins, M. L. (2004). The material values scale. *Journal of Consumer Research*, *31*(1), 209–219. https://doi.org/10.1086/383436

Richins, M. L. (2013). When wanting is better than having: Materialism, transformation expectations, and product-evoked emotions in the purchase process. *Journal of Consumer Research*, *40*(1), 1–18. https://doi.org/10.1086/669256

Richins, M. L. (2016). Materialism, transformation expectations, and spending: implications for credit use. *Journal of Public Policy and Marketing*, *30*(2), 141–156. https://doi.org/10.2307/23209270

Rick, S. I., Cryder, C. E., & Loewenstein, G. (2008). Tightwads and spendthrifts. *Journal of Consumer Research*, *34*(6), 767–782. https://doi.org/10.1086/523285

Riitsalu, L., & Murakas, R. (2019). Subjective financial knowledge, prudent behaviour and income: The predictors of financial well-being in Estonia. *International Journal of Bank Marketing*, *37*(4), 934–950. https://doi.org/10.1108/IJBM-03-2018-0071

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *Journal of Consumer Affairs*, *35*(2), 213–240. https://doi.org/10.1111/j.1745-6606.2001.tb00111.x

Roets, N. (2021, March 25). Covid-19: One year on, South Africans are heavily indebted but are looking at relief options. *City Press*. https://www.news24.com/citypress/voices/covid-19-one-year-on-south-africans-are-heavily-indebted-but-are-looking-at-relief-options-20210325

Rook, D. W., & Fisher, R. J. (1995). Normative Influences on Impulsive Buying Behavior. *Journal of Consumer Research*, *22*(3), 305. https://doi.org/10.1086/209452

Ryan, A. B. (2006). Post-positivist approaches to research. In M. Antonesa (Ed.), *Researching and writing your thesis: A guide for postgraduate students* (pp. 12–28). Maynooth. http://mural.maynoothuniversity.ie/874/1/post-positivist_approaches_to_research.pdf

SA consumers in for a rough ride in 2020. (2019, December 31). *IOL Business Report*. https://www.iol.co.za/business-report/economy/sa-consumers-in-for-a-rough-ride-in-2020-39881510

Sabri, M. F., Wijekoon, R., & Rahim, H. A. (2020). The influence of money attitude, financial practices, self-efficacy and emotion coping on employees' financial well-being. *Management Science Letters*, *10*(4), 889–900. https://doi.org/10.5267/j.msl.2019.10.007

Schicks, J. (2014). Over-indebtedness in microfinance - An empirical analysis of related factors on the borrower level. *World Development*, *54*, 301–324. https://doi.org/10.1016/j.worlddev.2013.08.009

Schraten, J. (2014). The transformation of the South African credit market. *Transformation: Critical Perspectives on Southern Africa*, *85*(1), 1–20. https://doi.org/10.1353/trn.2014.0017

Schraten, J. (2020). *Credit and debt in an unequal society: Establishing a consumer credit market in South Africa* (K. Hart, Ed.). Berghahn Books. http://ebookcentral.proquest.com/lib/uoct/detail.action?docID=6032713

Shephard, D. D., Contreras, J. M., Meuris, J., te Kaat, A., Bailey, S., Custers, A., & Spencer, N. (2017). *Beyond financial literacy: The psychological dimensions of financial capability*. (Technical Report) Think Forward Initiative. https://www.thinkforwardinitiative.com/research/the-psychological-dimensions-of-financial-capability

Sherraden, M. S., & Grinstein-Weiss, M. (2015). Creating financial capability in the next generation: An introduction to the special issue. *Journal of Consumer Affairs*, *49*(1), 1–12. https://doi.org/10.1111/joca.12067

Singh, K. (2007). *Quantitative social research methods*. Sage Publications.

Sotiropoulos, V., & D'Astous, A. (2013). Attitudinal, self-efficacy, and social norms determinants of young consumers' propensity to overspend on credit cards. *Journal of Consumer Policy*, *36*(2), 179–196. https://doi.org/10.1007/s10603-013-9223-3

South African Government. (2006). National Credit Act 34 of 2005. *Government Gazette*, *28619*.

South African Government. (2019). National Credit Amendment Act No. 7. *Government Gazette*, *42649*, 43. https://www.gov.za/sites/default/files/gcis_document/201908/42649gon1081.pdf

South African Government News Agency. (2020). *South Africans urged to consider debt counselling*. https://www.sanews.gov.za/south-africa/south-africans-urged-consider-debt-counselling

Spencer, N., Nieboer, J., & Elliott, A. (2015a). *Wired for imprudence: Behavioural hurdles to financial capability and challenges for financial education*. RSA Action and Research Centre, London. https://doi.org/10.13140/RG.2.2.24803.14888

Spencer, N., Nieboer, J., & Elliott, A. (2015b). *Wired for Imprudence: Behavioural hurdles to financial capability and challenges for financial education* (Issue May).

Ssebagala, R. (2014). *The dynamics of consumer credit and household indebtedness in South Africa*. (PhD Thesis) Department of Sociology, University of Cape Town, South Africa. https://open.uct.ac.za/handle/11427/15721

Ssebagala, R. (2016). *Relieving consumer over-indebtedness: The need for a "fresh start" in South Africa*. (Working Paper) Centre for Social Science Research, University of Cape Town, South Africa. http://cssr.uct.ac.za/pub/wp/369/

Tach, L. M., & Greene, S. S. (2014). Robbing Peter to pay Paul: Economic and cultural explanations for how lower-income families manage debt. *Social Problems*, *61*(1), 1–21. https://doi.org/10.1525/sp.2013.11262

Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.

The Banking Association South Africa. (2008). *Background to the National Credit Act*. https://www.banking.org.za/consumer-information/consumer-information-legislation/national-credit-act/

The World Bank. (2015). World development report 2015: Mind, society, and behavior. In *World Development Report 2015: Mind, Society, and Behavior*. https://doi.org/10.1596/978-1-4648-0342-0

Thomas, L. C., Oliver, R. W., & Hand, D. J. (2005). A survey of the issues in consumer credit modelling research. *Journal of the Operational Research Society*, *56*(9), 1006–1015. https://doi.org/10.1057/palgrave.jors.2602018

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

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*(1), 179–193. https://doi.org/10.1016/j.joep.2010.11.006

Wang, R., Liu, H., Jiang, J., & Song, Y. (2017). Will materialism lead to happiness? A longitudinal analysis of the mediating role of psychological needs satisfaction. *Personality and Individual Differences*, *105*, 312–317. https://doi.org/10.1016/j.paid.2016.10.014

Wonga. (2017). *Informal lending report: Understanding the role of mashonisas in the South African credit market*. A report on research commissioned by Wonga Finance SA (Pty) Ltd and conducted by Eighty20. https://www.wonga.co.za/informal-lending-report

Xiao, J. J., Sorhaindo, B., & Garman, E. T. (2006). Financial behaviours of consumers in credit counselling. *International Journal of Consumer Studies*, *30*(2), 108–121. https://doi.org/10.1111/j.1470-6431.2005.00455.x

Yamauchi, K. T., & Templer, D. I. (1982). The Development of a money attitude scale. *Journal of Personality Assessment*, *46*(5), 522–528. https://doi.org/10.1207/s15327752jpa4605_14

Yang, S., Markoczy, L., & Qi, M. (2007). Unrealistic optimism in consumer credit card adoption. *Journal of Economic Psychology*, *28*, 170–185. https://doi.org/10.1016/j.joep.2006.05.006

Zhao, H., & Zhang, L. (2020). Talking money at home: the value of family financial socialization. *International Journal of Bank Marketing*, *38*(7), 1617–1634. https://doi.org/10.1108/IJBM-04-2020-0174

APPENDICES

APPENDIX 1 - Demographic breakdown of research sample

Table 30 - Quantitative survey sample structure achieved n=874

		Incoming		Clear		Clear to Responsible		Extended to Responsible		Responsible to Extended		Distressed to Extended		Extended to Distressed		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Age	18 - 27 years	27	19.1%	13	12.3%	8	7.8%	19	13.8%	10	7.8%	12	8.9%	8	6.5%	97	11.1%
	28 - 35 years	68	48.2%	30	28.3%	31	30.4%	53	38.4%	28	21.9%	41	30.4%	22	17.7%	273	31.2%
	36 - 44 years	30	21.3%	29	27.4%	31	30.4%	33	23.9%	31	24.2%	25	18.5%	38	30.6%	217	24.8%
	45 - 60 years	11	7.8%	26	24.5%	25	24.5%	25	18.1%	49	38.3%	43	31.9%	46	37.1%	225	25.7%
	Above 61 years	5	3.5%	8	7.5%	7	6.9%	8	5.8%	10	7.8%	14	10.4%	10	8.1%	62	7.1%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Employment Status	1. Student	11	7.8%	1	0.9%	2	2.0%	6	4.3%	2	1.6%	3	2.2%	1	0.8%	26	3.0%
	2. Self Employed	14	9.9%	22	20.8%	25	24.5%	26	18.8%	33	25.8%	38	28.1%	33	26.6%	191	21.9%
	3. Employed	95	67.4%	71	67.0%	71	69.6%	79	57.2%	68	53.1%	79	58.5%	70	56.5%	533	61.0%
	4. Employed, Considering Retirement	15	10.6%	8	7.5%	2	2.0%	9	6.5%	7	5.5%	9	6.7%	5	4.0%	55	6.3%
	5. Retired	1	0.7%	3	2.8%	0	0.0%	4	2.9%	4	3.1%	4	3.0%	3	2.4%	19	2.2%
	6. Unemployed	5	3.5%	1	0.9%	2	2.0%	14	10.1%	14	10.9%	2	1.5%	12	9.7%	50	5.7%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Province	1. Eastern Cape	3	2.1%	4	3.8%	3	2.9%	5	3.6%	9	7.0%	8	5.9%	6	4.8%	38	4.3%
	2. Free State	28	19.9%	0	0.0%	5	4.9%	2	1.4%	4	3.1%	6	4.4%	4	3.2%	49	5.6%
	3. Gauteng	72	51.1%	58	54.7%	57	55.9%	82	59.4%	63	49.2%	54	40.0%	57	46.0%	443	50.7%
	4. KZN	16	11.3%	13	12.3%	22	21.6%	15	10.9%	21	16.4%	37	27.4%	28	22.6%	152	17.4%
	5. Limpopo	4	2.8%	3	2.8%	1	1.0%	2	1.4%	1	0.8%	4	3.0%	2	1.6%	17	1.9%
	6. Mpumalanga	6	4.3%	4	3.8%	0	0.0%	5	3.6%	3	2.3%	1	0.7%	2	1.6%	21	2.4%
	7. Northern Cape	1	0.7%	0	0.0%	1	1.0%	2	1.4%	0	0.0%	0	0.0%	1	0.8%	5	0.6%
	8. North West	1	0.7%	1	0.9%	4	3.9%	6	4.3%	1	0.8%	3	2.2%	3	2.4%	19	2.2%
	9. Western Cape	10	7.1%	23	21.7%	9	8.8%	19	13.8%	26	20.3%	22	16.3%	21	16.9%	130	14.9%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%

		Incoming		Clear		Clear to Responsible		Extended to Responsible		Responsible to Extended		Distressed to Extended		Extended to Distressed		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Marital Status	1. Single No Children	33	23.4%	20	18.9%	20	19.6%	28	20.3%	15	11.7%	28	20.7%	17	13.7%	161	18.4%
	2. Single With Dependent Children	23	16.3%	30	28.3%	19	18.6%	32	23.2%	32	25.0%	35	25.9%	38	30.6%	209	23.9%
	3. Single With Non-Dependent Children	36	25.5%	4	3.8%	5	4.9%	7	5.1%	12	9.4%	5	3.7%	6	4.8%	75	8.6%
	4. Married No Children	20	14.2%	11	10.4%	9	8.8%	15	10.9%	16	12.5%	12	8.9%	11	8.9%	94	10.8%
	5. Married With Dependent Children	28	19.9%	40	37.7%	47	46.1%	52	37.7%	48	37.5%	50	37.0%	47	37.9%	312	35.7%
	6. Married With Non-Dependent Children	1	0.7%	1	0.9%	2	2.0%	4	2.9%	5	3.9%	5	3.7%	5	4.0%	23	2.6%
Race	1. Black	81	57.4%	55	51.9%	64	62.7%	82	59.4%	63	49.2%	68	50.4%	60	48.4%	473	54.1%
	2. White	17	12.1%	32	30.2%	21	20.6%	32	23.2%	43	33.6%	40	29.6%	34	27.4%	219	25.1%
	3. Coloured	38	27.0%	8	7.5%	7	6.9%	16	11.6%	11	8.6%	14	10.4%	15	12.1%	109	12.5%
	4. Indian/Asian	5	3.5%	11	10.4%	10	9.8%	8	5.8%	10	7.8%	13	9.6%	15	12.1%	72	8.2%
	5. Prefer Not Answering	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.8%	0	0.0%	0	0.0%	1	0.1%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Number of Dependents	1. 1 Dependent	15	10.6%	17	16.0%	13	12.7%	21	15.2%	28	21.9%	24	17.8%	27	21.8%	145	16.6%
	2. 2 Dependents	47	33.3%	31	29.2%	28	27.5%	39	28.3%	26	20.3%	44	32.6%	33	26.6%	248	28.4%
	3. 3-<6 Dependents	65	46.1%	42	39.6%	47	46.1%	54	39.1%	50	39.1%	50	37.0%	47	37.9%	355	40.6%
	4. 6-<11 Dependents	8	5.7%	5	4.7%	4	3.9%	4	2.9%	6	4.7%	4	3.0%	5	4.0%	36	4.1%
	5. 11+ Dependents	1	0.7%	0	0.0%	0	0.0%	2	1.4%	2	1.6%	1	0.7%	1	0.8%	7	0.8%
	6. 0 Dependent	5	3.5%	11	10.4%	10	9.8%	18	13.0%	16	12.5%	12	8.9%	11	8.9%	83	9.5%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Education Level	1. No formal education	0	0.0%	1	0.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
	2. School education, never matriculated	2	1.4%	8	7.5%	4	3.9%	4	2.9%	6	4.7%	11	8.1%	7	5.6%	42	4.8%
	3. High school (with Matric)	27	19.1%	33	31.1%	29	28.4%	44	31.9%	41	32.0%	58	43.0%	52	41.9%	284	32.5%
	4. Professional certificate	15	10.6%	10	9.4%	16	15.7%	28	20.3%	21	16.4%	11	8.1%	20	16.1%	121	13.8%
	5. Diploma	65	46.1%	14	13.2%	35	34.3%	29	21.0%	26	20.3%	31	23.0%	30	24.2%	230	26.3%
	6. Under-graduate degree	22	15.6%	26	24.5%	11	10.8%	25	18.1%	22	17.2%	11	8.1%	7	5.6%	124	14.2%
	7. Post-graduate degree	10	7.1%	14	13.2%	7	6.9%	8	5.8%	12	9.4%	13	9.6%	8	6.5%	72	8.2%

		Incoming		Clear		Clear to Responsible		Extended to Responsible		Responsible to Extended		Distressed to Extended		Extended to Distressed		Total	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Property Ownership	1. Own it outright	53	37.6%	49	46.2%	37	36.3%	33	23.9%	30	23.4%	44	32.6%	33	26.6%	279	31.9%
	2. Own it with the help of a mortgage or loan	43	30.5%	27	25.5%	23	22.5%	23	16.7%	31	24.2%	18	13.3%	22	17.7%	187	21.4%
	3. Rent it	28	19.9%	20	18.9%	25	24.5%	53	38.4%	52	40.6%	47	34.8%	46	37.1%	271	31.0%
	4. Live here rent-free	17	12.1%	10	9.4%	17	16.7%	29	21.0%	15	11.7%	26	19.3%	23	18.5%	137	15.7%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Credit Usage Frequency	1. Very often	10	7.1%	12	11.3%	10	9.8%	11	8.0%	16	12.5%	14	10.4%	12	9.7%	85	9.7%
	2. Fairly often	23	16.3%	22	20.8%	28	27.5%	24	17.4%	29	22.7%	37	27.4%	25	20.2%	188	21.5%
	3. Sometimes	70	49.6%	28	26.4%	37	36.3%	32	23.2%	27	21.1%	26	19.3%	29	23.4%	249	28.5%
	4. Not very often	28	19.9%	33	31.1%	21	20.6%	44	31.9%	39	30.5%	34	25.2%	31	25.0%	230	26.3%
	5. Never	10	7.1%	11	10.4%	6	5.9%	23	16.7%	15	11.7%	22	16.3%	25	20.2%	112	12.8%
	6. Don’t know	0	0.0%	0	0.0%	0	0.0%	2	1.4%	0	0.0%	2	1.5%	2	1.6%	6	0.7%
	7. Prefer not to say	0	0.0%	0	0.0%	0	0.0%	2	1.4%	2	1.6%	0	0.0%	0	0.0%	4	0.5%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Credit Burden	1. It is not a burden at all	34	24.1%	53	50.0%	21	20.6%	30	21.7%	25	19.5%	24	17.8%	12	9.7%	199	22.8%
	2. It is somewhat of a burden	86	61.0%	39	36.8%	51	50.0%	65	47.1%	65	50.8%	66	48.9%	38	30.6%	410	46.9%
	3. It is a heavy burden	17	12.1%	12	11.3%	30	29.4%	41	29.7%	35	27.3%	44	32.6%	72	58.1%	251	28.7%
	4. Don’t know	4	2.8%	2	1.9%	0	0.0%	2	1.4%	3	2.3%	1	0.7%	2	1.6%	14	1.6%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Missed Credit Payment 3m	1. Yes	39	27.7%	17	16.0%	84	82.4%	90	65.2%	97	75.8%	101	74.8%	114	91.9%	542	62.0%
	2. No	102	72.3%	89	84.0%	18	17.6%	48	34.8%	31	24.2%	34	25.2%	10	8.1%	332	38.0%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%
Missed Credit Payment 6m	1. Yes	44	31.2%	19	17.9%	87	85.3%	95	68.8%	103	80.5%	114	84.4%	111	89.5%	573	65.6%
	2. No	89	63.1%	86	81.1%	13	12.7%	40	29.0%	20	15.6%	21	15.6%	12	9.7%	281	32.2%
	3. Don’t know	8	5.7%	1	0.9%	2	2.0%	3	2.2%	5	3.9%	0	0.0%	1	0.8%	20	2.3%
Total		141	100.0%	106	100.0%	102	100.0%	138	100.0%	128	100.0%	135	100.0%	124	100.0%	874	100.0%

APPENDIX 2 – Box Plots for main constructs

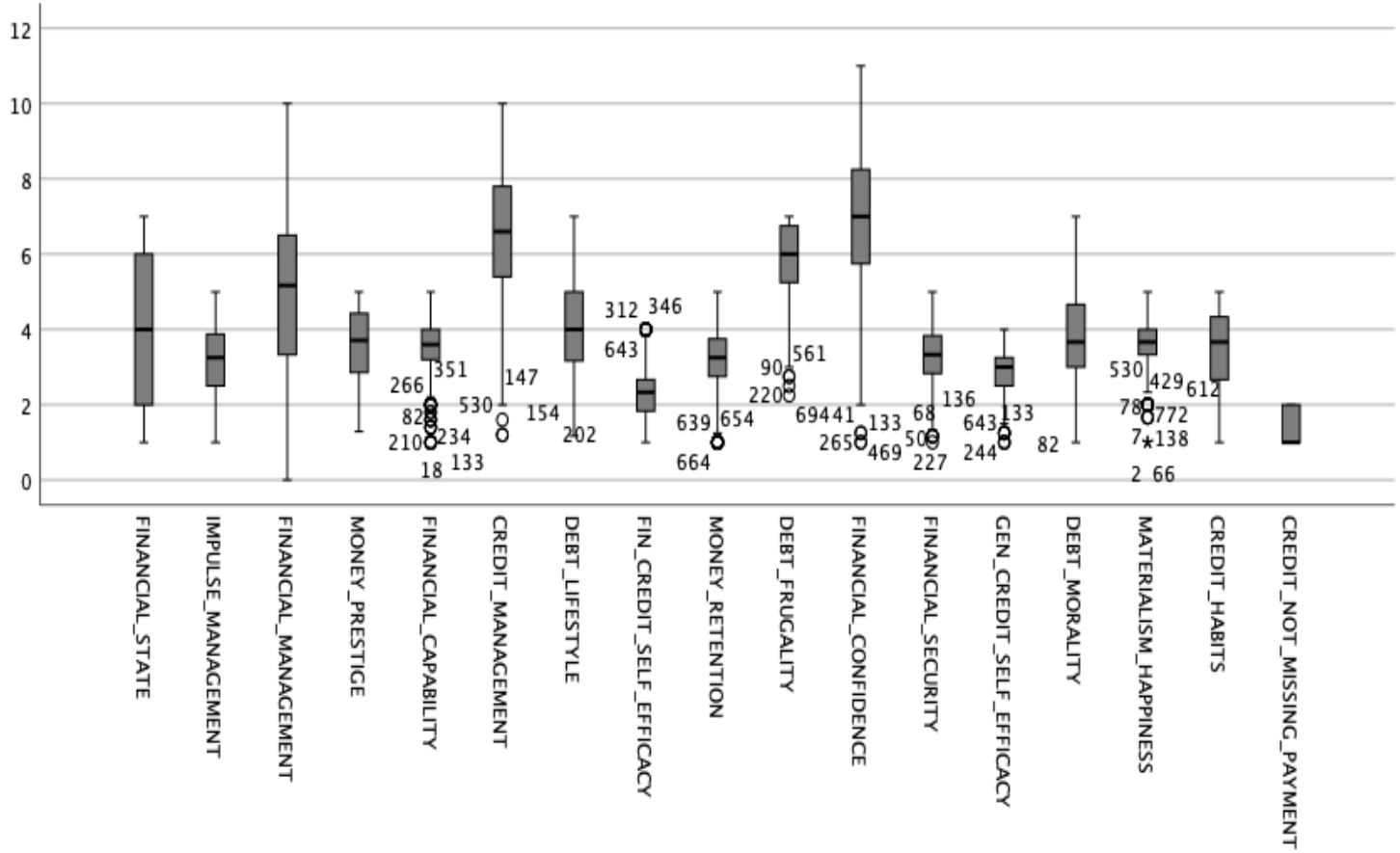


Figure 8 - Boxplot for total constructs

APPENDIX 3 – CFA step-by-step analysis

CFA on Financial Credit Self-efficacy

The six items from the Financial Self-efficacy scale (Lown, 2011) were run using Maximum Likelihood and five of the items attracted factor loadings of greater than 0.5, four of these loading at greater than 0.6 but none surpassed the 0.7 mark. On review of the standardised regression weights, modification indices and standardised residual covariance matrix, FCSE 3 was deleted. The model was run again and CMIN/df was terrible and FCSE6 was now loading at 0.5.

While the standardised residual covariance matrix instrumentation was in order, the modification indices were above 4 on all relationships. FCSE6 was removed and the model was run again. All four items loaded between 0.6 and 0.7 but the CMIN/df was again terrible. Upon removing item four the model did not run as the probability level could not be computed due to zero degrees of freedom and the same applied when leaving in item four and removing item 1. CMIN and RMSEA was terrible and the modification indices appeared problematic between all items. The standardised residual covariance matrix indicated that FCSE4 might be a problem but when removed and run on only three items there were zero degrees of freedom. At this stage it was decided to leave four items in place for further testing using FCSE as a contributing factor to a second order construct.

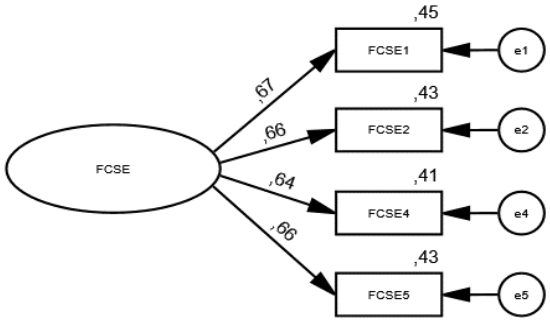


Figure 9 - CFA on FCSE

Model did not compute but was kept as an input to a second order construct.

CFA on General Credit Self-efficacy

The four factors discarded from the Financial Credit Self-efficacy scale (Lown, 2011) were modified for this questionnaire to include the word credit. One factor loaded above 0.7 and the remaining three between 0.5 and 0.6. Model fit indices were excellent in relation to CFI and

SRMR but terrible on all other measures. Based on modification indices and standardised residual covariance matrix it was decided to remove GCSE4 which had the lowest loading at 0.51. The loading for GCSE1 went up to 0.83 and GCSE3 dropped to 0.55 while GCSE2 dropped below the acceptable level of 0.5 and was therefore discarded. With only two items remaining and zero degrees of freedom, the model could not be computed despite the remaining factors both loadings between 0.6 and 0.7. These two items were retained to test as a part of a second order construct.

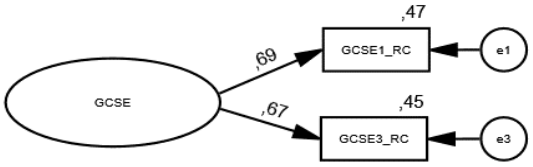


Figure 10 - CFA on GCSE

Model did not compute but was kept as an input to a second order construct.

CFA on Cognitive Factors

Financial Capability

Financial Capability (FCAP), a candidate designed scale, originally contained seven items however, FCAP4 was removed during the pilot analysis. On running the remaining five items, two items loaded above 0.7, one item above 0.6 and the three remaining items above 0.5. CMIN and RMSEA were acceptable and all other model fit measures were excellent. The relationship between FCAP1 and FCAP3 looked problematic on review of the modification indices (over 14,000) and upon further inspection of the standardised residual covariance matrix, FCAP3 appeared to be the problem. This item was removed and the model was rerun with 5 items resulting in an excellent fit on all instrumentation.

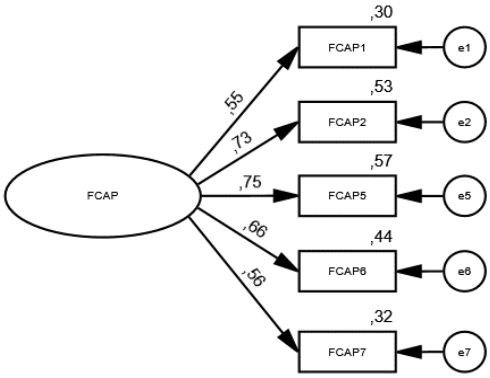


Figure 11 - CFA on FCAP

Chi-square=7,975 | df=5,000 | p-value=0.158 | CMIN/DF=1,595 | GFI=0.996 | AGFI=0.988 | CFI=0.997 | SRMR=0.018 | RMSEA=0.027 | PCLOSE=0.843

Financial Confidence

Financial Confidence (FCON) contained four items (Critical Research, 2018) and three of these loaded above 0.8 and one between 0.6 and 0.7. The CMIN and RMSEA scores were terrible and it appeared on review of the modification indices that FCON causing some issues and was thus removed. On rerunning the model two factors now scored above 0.8 and one factor scored 0.79. There were no degrees of freedom in this model and as it cannot be used independently it was retained for use as a part of a second order construct.

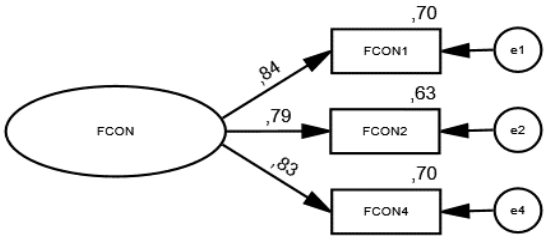


Figure 12 - CFA on FCON

Model did not compute but was kept as an input to a second order construct.

Financial Management

Financial Management (FMG), another candidate designed scale was tested with six items as FCAP3 was removed during the pilot analysis. Two items loaded above 0.8 and the remaining 4 items above 0.7. CMIN and RMSEA were terrible on the first run due to the problematic relationship between FMG6 and FMG7 with modification indices at 18,000 and 14,000 respectively. The standardised residual covariance matrix showed FMG7 to be the issue but when removed CMIN, RMSEA and PClose were all terrible. The same outcome was realised when removing FMG6 and leaving in FMG7. The model was tested dropping FMG5 but with zero degrees of freedom it would not run. It was decided to retain three items to test it as a part of a second order construct.

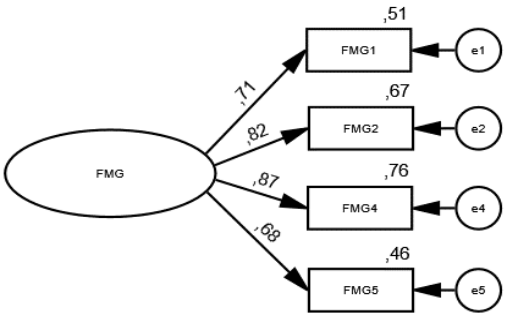


Figure 13 - CFA on FMG

Model did not compute but was kept as an input to a second order construct.

Investigating a second order construct – Composite Credit Self-efficacy

All of the above constructs that produced outputs with zero DF were added together to form a second order construct called Composite Credit Self-efficacy. A content analysis of the questions within FCSE, GCSE, FCON and FMG supported the collation of these constructs.

Running the model including FCAP proved troublesome and so this construct was removed from the second order construct but kept as an independent construct for the final measurement model as it ran well independently. Upon running the model without it, fit was excellent except for CMIN/DF which was acceptable at 3,182. The relationship between CCSE and FCSE was 0.61, with FCON 0.75, with FMG 0.84 and with GCSE = 0.34. The 0.34 score for GCSE was concerning but the regression output information described it as significant. The model was checked without it and CMIN/DF was worse at 4,072 but still acceptable, RMSEA was also acceptable. GCSE was incorporated back into the model and the other instrumentation was reviewed. FCON4 looked problematic in the standardised residual covariance matrix and so it was removed and tested again. CMIN/DF worsened slightly to 3,711 but many modification index issues appeared in relation to FCON as well as a negative error on e15 (related to one of the FMG items). Otherwise there was a vast improvement on the overall modification indices. CMIN/DF was still acceptable and all other fit measures were excellent. FMG1 was now causing some problems on in the standardised residual covariance matrix. GCSE was still proving to be an issue and so a number of different permutations were run excluding it, reincorporating it, excluding FCON and reincorporating it. Along the way FCSE4 and FCSE5 were dropped as were FMG1 and FMG5. The model fit as depicted below was excellent despite some remaining concerns with the modification indices and standardised residual covariance

matrix. The model below was taken forward as a key component of the initial measurement model.

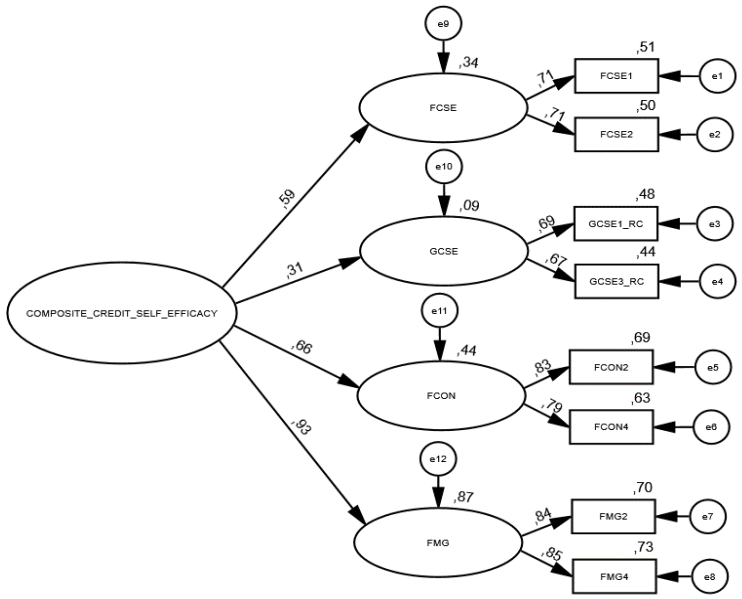


Figure 14 - CFA on CCSE version 1

Chi-square=55,973 | df=26,000 | p-value=0.001 | CMIN/DF=2,153 | GFI=0.984 | AGFI=0.972 | CFI=0.988 | SRMR=0.045 | RMSEA=0.038 | PCLOSE=0.920

Given the low regression score of 0.31 between Composite Credit Self-efficacy and GCSE this model was re-tested excluding GCSE and these results are shown below.

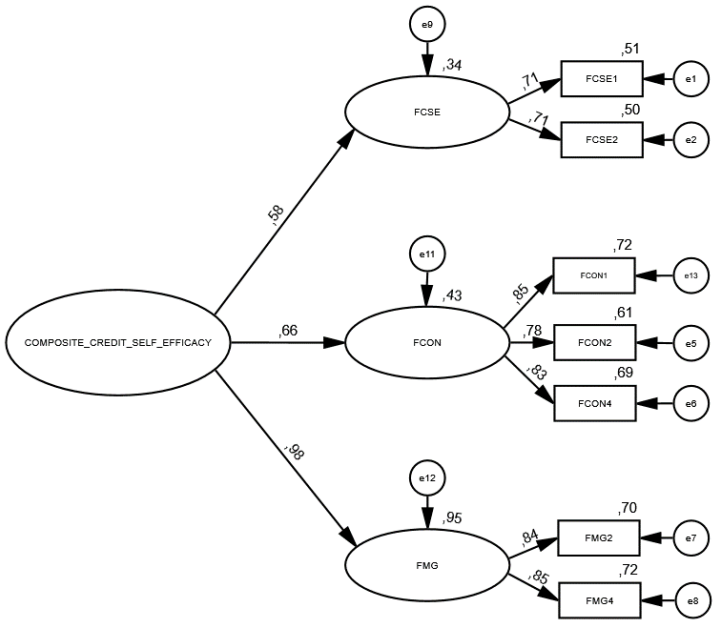


Figure 15 - CFA on CCSE version 2

Chi-square=19,958 | df=13,000 | p-value=0.096 | CMIN/DF=1,535 | GFI=0.993 | AGFI=0.984 | CFI=0.997 | SRMR=0.021 | RMSEA=0.026 | PCLOSE=0.970

Despite the latter model performing far better, it was decided to use the for construct in the measurement model to see how GCSE performed.

CFA on Motivational Factors

Money Prestige

The model for Money Prestige was run based on the loadings from the pilot with items M_A1, M_A2, M_A3, M_A4, M_A5, M_A6, M_A7, M_A8, M_A9 and item M_A19. Items 1 through 9 mapped directly to the Money Attitude construct of Power–Prestige while item 19 came from the Anxiety construct (Yamauchi & Templer, 1982). On this first run CMIN/df and RMSEA were acceptable but PClose terrible while CFI and SRMR were excellent. One factor loaded above 0.8, six factors above 0.7, two above 0.6 and one above 0.5. On inspection of the modification indices, the effect of MA2 on MA3, MA7 on MA8 and MA3 on MA2 looked problematic but were retained for further analysis. The standardised residual covariance matrix showed no problems but highest scores were related to MA19. Given its relatively lower loading and the fact that the literature did not include this in the Power-Prestige construct (Yamauchi & Templer, 1982), it was decided to drop this item. CMIN/df then shifted to terrible and RMSEA acceptable. Based on the modification indices it was decided to remove M_A2 and based on the standardised residual covariance matrix it was decided to remove item M_A8. CMIN/df was now acceptable and all other measures were excellent. Item M_A7 was now loading at 0.61 and given that seven items still remained in the construct this was removed and the model was retested. Overall model fit was now excellent.

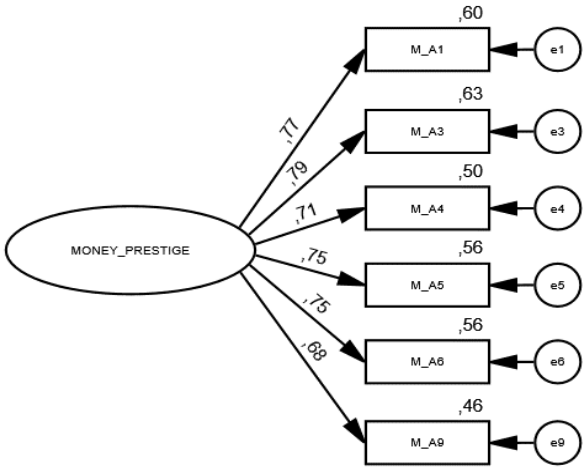


Figure 16 - CFA on Money Prestige

Chi-square=26,614 | df=9,000 | p-value=0.002 | CMIN/DF=2,957 | GFI=0.989 | AGFI=0.975 | CFI=0.992 | SRMR=0.021 | RMSEA=0.050 | PCLOSE=0.470

Money Security

Money Security comes from the Money Attitudes scale (Yamauchi) and seven items were used per pilot loadings with four of these labelled Security in the original Money Attitudes scale and three of them labelled Retention – in the original study they did all load under one construct. The first pass analysis showed terrible CMIN and RMSEA score with one item loading over 0.8, two over 0.7. three over 0.6 and one over 0.5. On review of the Modification Indices and Standardised Covariance Matrix, MA13 appeared problematic and was removed. The model fit was still poor with a terrible CMIN and RMSEA. Given its relatively low loading of 0.52, M-A25 was removed. CMIN and RMSEA were still terrible and on review of the standardised residual covariance matrix M_A24 was also removed. The model fit was still poor and so M_A23 was removed leaving three items all loading over 0.7, one of which scored 0.8. Unfortunately there were no degrees of freedom remaining in this model and hence it could not be estimated but was put aside for inclusion into a second order factor.

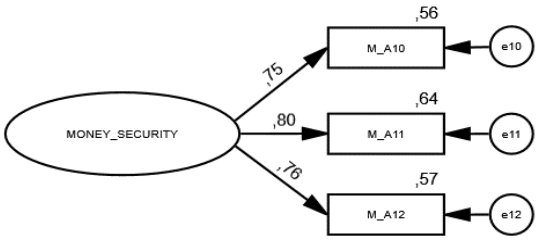


Figure 17 - CFA on Money Security

Model did not compute but was kept as an input to a second order construct.

Money Retention

Seven items were tested as opposed to the five that emerged from the pilot results. This was done to check the constructs per the original study where items 14,15,16,26,27,28,29 all loaded on a construct called Distrust. In both the pilot study and the main study item M_A15 did not load. Item M-A16 did not load in the pilot but did in the main study. Item M-A17 although part of the Distrust construct in the original scale was labelled as Anxiety and this did not load in the main study. Four items with loadings below 0.5 were deleted these being M_A14, M_A17, M_A27 and M_A29. The remaining items 16, 26 and 28 loaded at 0.57, 0.74 and 0.82 respectively but with zero degrees of freedom and model could therefore not be computed.

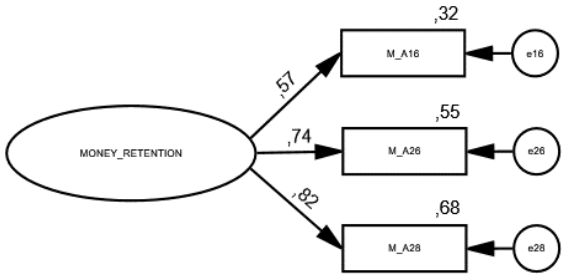


Figure 18 - CFA on Money Retention

Model did not compute but was kept as an input to a second order construct.

Money Anxiety

Two items from the pilot were tested these being M_A20 and M_A22. Both were constrained to 1 and loaded at 0.54 but with zero degrees of freedom so the model could not be computed. This was put aside for further testing as a possible contributor to a second order construct.

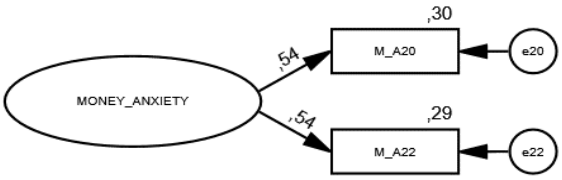


Figure 19 - CFA on Money Anxiety

Model did not compute but was kept as an input to a second order construct.

Debt lifestyle

In the pilot study six factors loaded on the Debt Lifestyle construct these being items 1,2,8,15,16 and 17. In the main study items 14 instead of item 16 along with the other items. It was therefore decided to add item 16 into the mix and so CFA was undertaken on seven items. Items 15 and 16 loaded below 0.5 and so were discarded immediately. The model was run again and two items produced factor loadings above 0.7, one above 0.6 and two above 0.5. CMIN and RMSEA were terrible in this iteration and based on an inspection of the modification indices and standardised residual covariance matrix D_A17 appeared problematic. Once D_A17 was removed CMIN and RMSEA acceptable and all other measures were excellent. D_A14 was now producing a low loading of 0.51 and so the model was checked without it as a three factor model. CMIN and RMSEA returned to terrible and so it was decided to stick with the four item model.

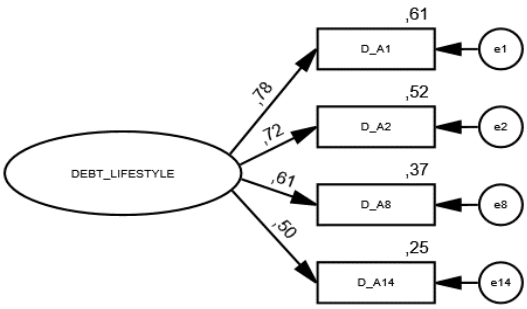


Figure 20 - CFA on Debt Lifestyle

Chi-square=8,362 | df=2,000 | p-value=0.015 | CMIN/DF=4,181 | GFI=0.995 | AGFI=0.973 | CFI=0.991 | SRMR=0.026 | RMSEA=0.063 | PCLOSE=0.246

Debt Frugality

In the pilot study 3 items loaded on. this construct D_A10,D_A11 and D_A12 while in the main study item D_A9 also loaded successfully. The model was run with four items and one item loaded above 0.7, one above 0.6 and two above 0.5. The produced an excellent model fit but the model could not analysed as with a CMIN of 1.191 and only 2 degrees of freedom CMIN/df was 0.596 and CFI appeared as 1. The four item model was therefore put aside to test as a part of a second order construct.

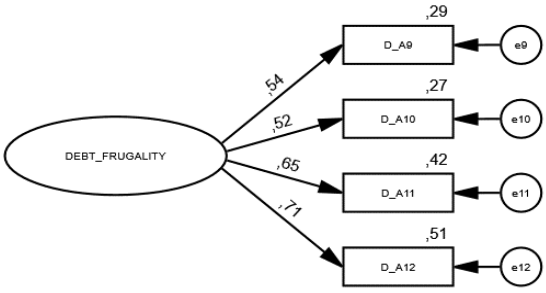


Figure 21 - CFA on Debt Frugality

Model did not compute – kept as an input to a second order construct.

Debt Morality

The pilot loaded with items D_A3 and D_A4 to this construct but the main study also loaded item D_A13. The CFA was run with 3 items and one item loaded above 0.7 and the other two failed to load above 0.5. This construct was therefore discarded and not carried forward as a part of the measurement model.

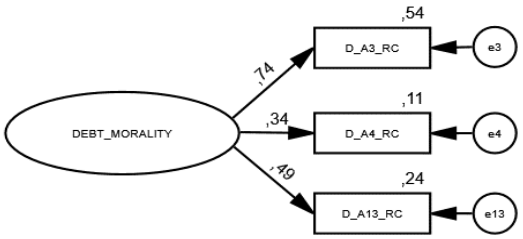


Figure 22 - CFA on Debt Morality

Model did not compute and was discarded.

Investigating a second order construct – Money Conservation

Money Anxiety was tested together with Money Security, Debt Frugality and Money Retention. Money Anxiety proved to be the outsider and did not work support the second order construct. Upon rerunning the model there was an excellent model fit with 3 constructs and 1o items making up the second order construct of Money Conservation. Most of the regression weights in the modification indices between items were still between 4.3 and 7.2 and the squared multiple correlations were weak (0.6) to moderate (0.2) making this model questionable, however it was included as a part of the initial measurement model.

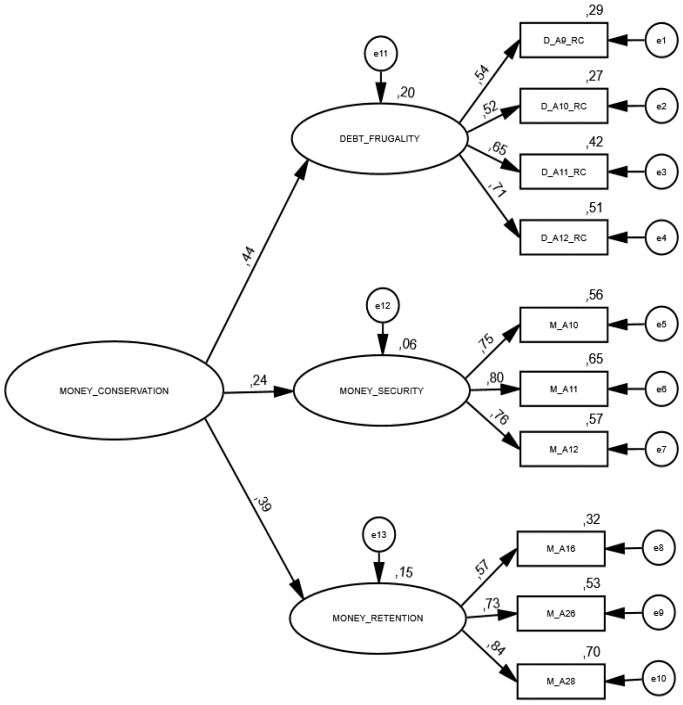


Figure 23 - CFA on Money Conservation

Chi-square=59,644 | df=32,000 | p-value=0.002 | CMIN/DF=1,864 | GFI=0.985 | AGFI=0.975 | CFI=0.986 | SRMR=0.033 | RMSEA=0.033 | PCLOSE=0.987

CFA on Affective Factors

Materialism Happiness

Four items loaded in the pilot namely MAT14, MAT15, MAT17 and MAT18. Only three loaded in the main study as item MAT14 failed to load. One of the three loaded above 0.7 and the remaining two items above 0.6. CMIN and RMSEA were both terrible in this iteration and there were zero degrees of freedom so the model could not be computed and was set aside for testing as a part of a second order construct.

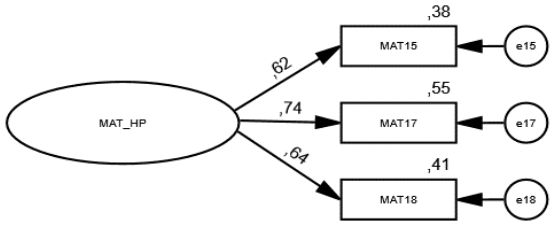


Figure 24 - CFA on Materialism Happiness

Model did not compute – kept as an input to a second order construct.

Materialism Centrality

In the pilot study, three items loaded on this construct, these being MAT7, MAT8 and MAT13. These same three items were tested with MAT8 and MAT13 reverse coded. MAT13 loaded well below 0.5 and was therefore removed and when rerun the remaining two items both produced loadings above 0.6 but with zero degrees of freedom. The two item construct was thus kept to investigate it as a possible contributor to a second order factor.

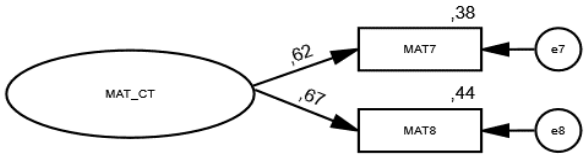


Figure 25 - CFA on Materialism Centrality

Model did not compute – kept as an input to a second order construct.

Materialism Success

Items MAT2, MAT5, and MAT12 loaded in the pilot as per the main study with two producing factor loadings above 0.6 and one above 0.7. CMIN and RMSEA were both terrible in the CFA output and with zero degrees of freedom, the model could not be computed. This three factor construct was kept for testing as a part of a second order construct.

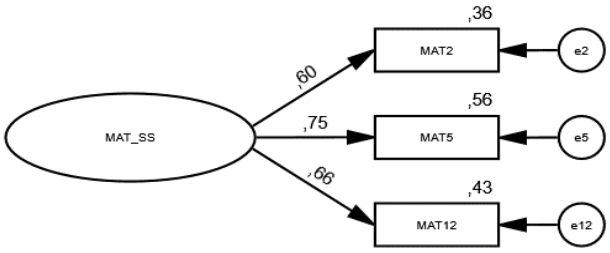


Figure 26 - CFA on Materialism Success

Model did not compute – kept as an input to a second order construct.

Impulsivity

As per the pilot study, IMP8 failed to load above 0.5 with the other items despite being reverse coded per the recommendation of the literature (Rook & Fisher, 1995). Of the remaining eight items loaded three items loaded above 0.6, four items above 0.7 and one above 0.8. CMIN in this model as terrible while RMSEA was acceptable. Based on a review of the modification indices and the standardised residual covariances matrix, IMP9 was removed. On rerunning the model the fit results were quite similar and so the modification indices were reviewed again showing the relationship between IMP 1 and IMP 6 as problematic. Removing IMP6 resulted in an acceptable CMIN and RMSEA while removing item IMP1 instead of item IMP6 resulted in an acceptable CMIN and an excellent RMSEA score. Removing both IMP1 and IMP6 resulted in an excellent model fit.

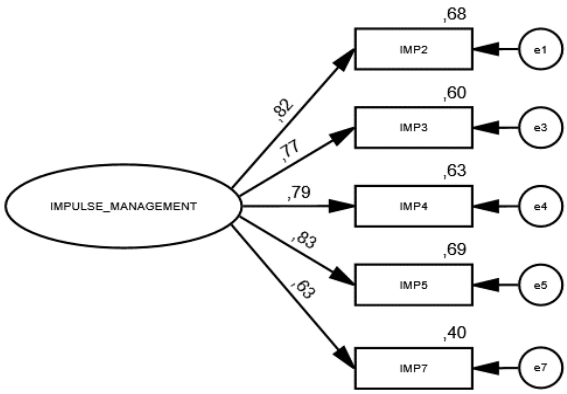


Figure 27 - CFA on Impulsivity

Chi-square = 10,888 | df = 5,000 | p-value =0.054 | CMIN/DF= 2,178 | GFI =0.995 | AGFI = 0.984 | CFI=0.997 | SRMR=0.016 | RMSEA=0.039 | PCLOSE = 0.684

Investigating a second order factor – Materialism Satisfied

Materialism Success (MAT_SS) was combined with Materialism Centrality (MAT_CT) and Materialism Happiness (MAT_HP) due to the not running successfully as independent models. Inspection of the content of the questions per Table 22 below relating to materialism justified testing these constructs together but Materialism Success proved problematic in loading alongside the other two construct, probably because the nature of the questions are outer-directed as opposed to the other two being inner-directed. It's BETA regression score was 1,29 and therefore inadmissible.

Table 31 - Sub-constructs within Materialism

Item Name	Item Label
MATERIALISM CONSTRUCTS	
MATERIALISM SUCCESS (Strongly Disagree / Strongly Agree – 5-point Likert scale)	
MAT2	Some of the most important achievements in life include acquiring material possessions
MAT5	I like to own things that impress people
MAT12	I like a lot of luxury in my life.
MATERIALISM HAPPINESS (Strongly Disagree / Strongly Agree – 5-point Likert scale)	
MAT15	My life would be better if I owned certain things I don't have
MAT17	I would be happier if I could afford to buy more things
MAT18	It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like
MATERIALISM CENTRALITY (Strongly Disagree / Strongly Agree – 5-point Likert scale)	
MAT7_RC	I usually buy only the things I need
MAT8_RC	I try to keep my life simple, as far as possessions are concerned

When Materialism Success was dropped and Materialism Happiness and Materialism Centrality were tested together, they produced a second order construct with an excellent model fit which was then labelled Materialism Satisfied. Based on Chi-square of 1.073 and only 5 degrees of freedom the resultant p-value for the model was 0.956 with a CMIN/DF= 0.215.

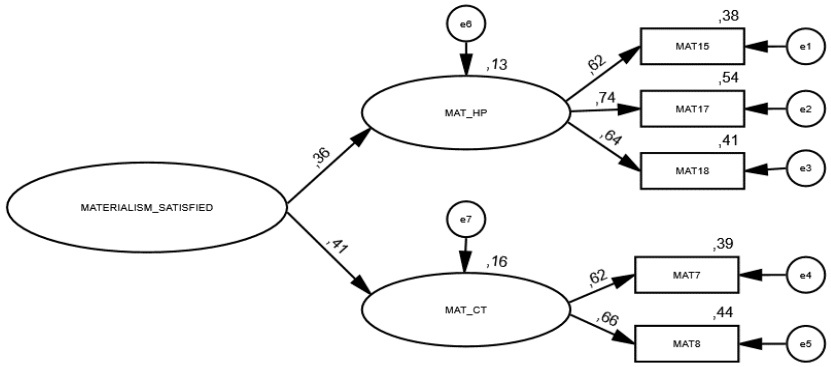


Figure 28 - CFA on Materialism Satisfied

The model needed more degrees of freedom and so Materialism Success was reintroduced and the modification indices were inspected. It appeared that MAT2 has a problematic relationship with all seven of the other items. The beta regression score of MAT-SS was still over 1 and inspection of the modification indices showed MAT18 (within MAT_HP) to be a potential problem. The problem with MAT_SS persisted with CFI now showing 1 rendering the model useless. All three constructs were thus discarded from the measurement model.

Model did not compute and was discarded.

CFA on Selective Factors

Credit Score

None of the five items under the construct Credit Score loaded above 0.5 and so this construct was removed in its entirety.

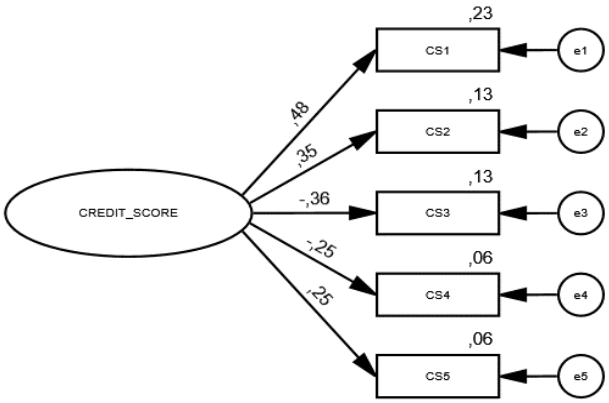


Figure 29 - CFA on Credit Score

Model did not compute and was discarded

Lender Power

Six items were tested together and then two emerging sub constructs were tested separately. Items LP1 and LP3 did not load with the other four items and showed extremely low loadings. Removing these two items saw only two of the four remaining items load above 0.5 and so LP4 and LP5 were removed. On rerunning with two items, LP2 loaded at 0.67 and LP6 at 0.69 but with zero degrees of freedom and thus the model could not be computed. Running items LP1 and LP3 on their own resulted in factor loadings between 0.5 and 0.6 also with zero degrees of freedom. Without any opportunity to combine the model below into a second order construct, it was discarded.

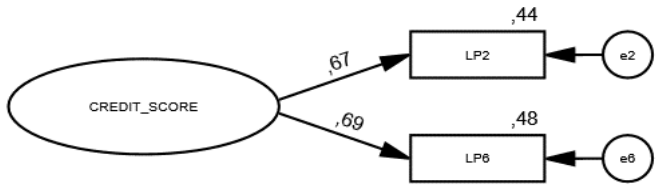


Figure 30 - CFA on Lender Power

Model did not compute and was discarded.

CFA on Credit Behaviour

All nine items across Credit Usage, Credit Repayment and Credit Default were run as a single model. CU3 and CD3 failed to load above 0.5 and were deleted. On re-running the model two items loaded above 0.5, two others above 0.6 and only one above 0.7. CU1 loaded at 0.48 and was deleted and the model with the remaining five items produced terrible CMIN, RMSEA and PClose. Inspection of the modification indices showed problems in the relationship between CD1 and CD2, The standardised residual covariance matrix confirmed that CD2 was a problem and this was removed. Although CMIN and RMSEA were both acceptable, the four item model could not be computed. When tested on its own, Credit Repayment showed zero degrees of freedom and the same applied when running Credit Usage and Credit Default independently as three factor models. A further test was undertaken building credit behaviour as a second order construct and keeping Credit Usage, Credit Repayment and Credit Default as separate constructs within it. After seeing CU1 and CD3 fail to load per the previous runs, this approach resulted in the following:

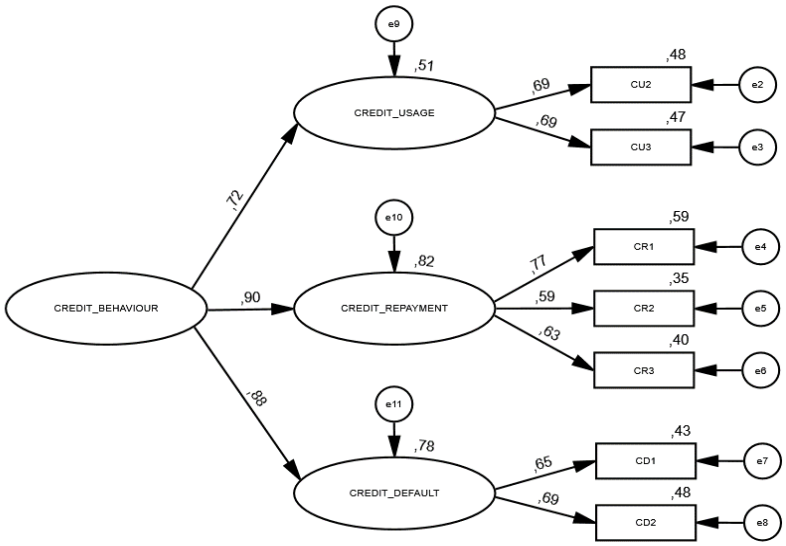


Figure 31- CFA on Credit Behaviour - version 1

Chi-square=63,727, df=13,000 | p-value=0.00 | CMIN/DF=4.902 | GFI =0.979 | AGFI=0.954 | CFI=0.962 | SRMR=0.042 | RMSEA=0.070 | PCLOSE=0.024

Despite performing well, during the course of the modelling Credit Usage appeared to be troublesome in the review of the standardised residual covariance matrix and appeared to be conflicting with CR3 and so the second order construct of credit behaviour was tested without it with these results displayed below.

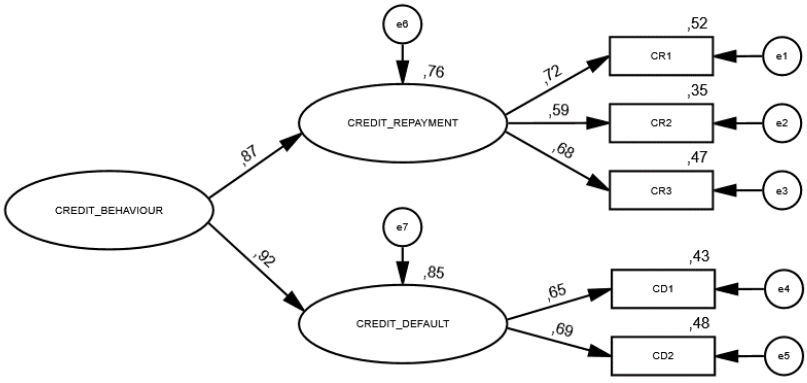


Figure 32 - CFA on Credit Behaviour - version 2

Chi-square=16,776 | df=5,000 | p-value=0.05 | CMIN/DF=3,355 | GFI=0.992 | AGFI=0.975 | CFI=0.987 | SRMR=0.030 | RMSEA=0.054 | PCLOSE=0.350

Despite this improvement, it was decided to retain Credit Usage in the measurement model based on the former construct (version 1) to assess its performance.

CFA on Credit Habits

A further interesting construct related to credit behaviour was also tested namely Credit Habits. Of the four items tested only two items survived the CFA and loaded well at above 0.8 but with zero degrees of freedom and thus, after being tested to see whether it linked up with Credit Behaviour which it didn't, the model was discarded.

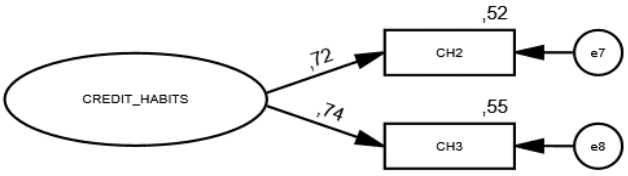


Figure 33 - CFA on Credit Habits

Model did not compute and was discarded.

Given that Credit Behaviour is integral to the theoretical model it was felt important to assess a number of additional items related to credit behaviour. These items included:

- CREDIT_USAGE_FREQ: The frequency of credit cards / store cards usage (QC4)
- CREDIT_PAYMENT_CHOICE: Consumer repayment choices (QC5)
- CREDIT_COMMIT: Extent to which people are keeping up credit commitments (QC10)
- CREDIT_MISSED_3MNTHS – if credit repayments have been missed - past 3 months
- CREDIT_MISSED_6MNTHS - – if credit repayments have been missed - past 3 months

Only the last two items survived the analysis with the other not clearing the 0.4 factor loading cut-off. These two items are binary Yes / No questions and formed a construct labelled NOT_MISSED_PAYMENT, phrased in the negative as 1 = Yes and 2 = NO. According to Hair et al. model estimation that includes binary questions while using Maximum Likelihood is acceptable as "both forms of the coefficients reflect both direction and magnitude of the relationship, but are interpreted differently" (Hair et al., 2018, p. 561). When modelled these items loaded extremely well, both above 0.8, but there were zero degrees of freedom and thus the model is unidentifiable.

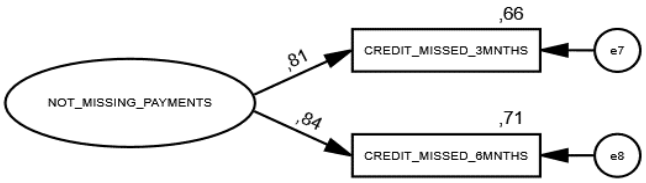


Figure 34 - CFA on Not Missing Payments

Model did not compute and was discarded.

APPENDIX 4 – Items making up the final SEM

Table 32 - COMPOSITE CREDIT SELF-EFFICACY construct components

Item Name	Item Label
FINANCIAL CREDIT SELF-EFFICACY (4-point scale Exactly True to Not True At All)	
FCSE1	It is hard to stick to my credit commitments when unexpected expenses arise
FCSE2	My credit commitments make it challenging to make progress toward my financial goals
FINANCIAL MANAGEMENT (10 point scale - Difficult to Easy to Manage)	
FMG2	Saving money
FMG4	Affording the things, I want
FINANCIAL CONFIDENCE (How confident are you on a scale of 1-10?)	
FCON1	Managing your money
FCON2	Making decisions about financial products and services
FCON4	Planning for your financial future

Table 33 - LIVING FOR TODAY construct components

Item Name	Item Label
DEBT LIFESTYLE (7-point scale Strongly Agree - 1 to Strongly Disagree - 7)	
D_A1_RC	Taking out a loan is a good thing because it allows you to enjoy life
D_A2_RC	It is a good idea to have something now and pay for it later
MONEY PRESTIGE (5-point Likert scale from Strongly disagree to Strongly agree)	
M_A1	I use money to influence other people to do things for me
M_A3	In all honesty, I own nice things in order to impress others
M_A4	I behave as If money were the ultimate symbol of success
M_A6	People I know tell me that I place too much emphasis on the amount of money a person has as a sign of his success
M_A8	Although I should judge people by their deeds I am more influenced by the amount of money they have
IMPULSE MANAGEMENT (5-point Likert scale from Strongly disagree to Strongly agree)	
IMP2	Just do it describes the way I buy things
IMP3	I often buy things without thinking
IMP4	I see it, I buy it describes me
IMP5	Buy now, think about it later describes me
IMP7	I buy things according to how I feel ~~at~~ in the moment.

Table 34 - CREDIT BEHAVIOUR construct components

Item Name	Item Label
CREDIT BEHAVIOUR (5-point scale Very Often - 1 to Never - 5)	
CR1	I make the payment only when really necessary --- I usually plan ahead to make payments
CR2	I find ways to pay in order of urgency I find ways to pay in order of importance
CR3	I pay to avoid negative consequences I pay to build a good credit profile
CREDIT BEHAVIOUR (5-point scale Very Often - 1 to Never - 5)	
CD1	I use other forms of credit to manage I pay to build a good credit profile
CD2	I usually continue the way I have in the past I ask for assistance so that I can plan better

Table 35 - Dependent variable – FINANCIAL STATE - construct components

Item Nam	Item Label
FINANCIAL STATE – Credit Journeys recoded as a scale	
1	Extended to Distressed
2	Distressed to Extended
3	Responsible to Extended
4	Extended to Responsible
5	Clear to Responsible
6	Clear
7	Incoming

APPENDIX 5 - Praxis: business model

A New Predictive Platform

Globally, there are very many fringe solutions that aim to address the indebtedness problem but there is not yet a single integrated, automated and practical solution. This is where the business model opportunity lies; in building a technology platform for both lenders and consumers that incorporates, alongside many other features, a real-time decision switch. This switch enables a real-time assessment of a consumer's level of indebtedness across one of seven possible credit journeys. It can profile a consumer's propensity to move upward or downward in their level of indebtedness using the structured equation model produced in this paper along with existing longitudinal credit bureau variables and lender information.

This research will be applied as an input to build a new technology platform that provides a whole view of a consumer's level of preparedness, in the moment, as opposed to three months after the fact. Moving from reactive to predictive analysis by using data intelligently and implementing live decision-making to help consumers improve their credit behaviours, reduce levels of indebtedness and ultimately give them greater control and influence over the lending process.

Describing the Platform and Tools

The platform and tools envisaged will enable lenders to understand the 'bad situation' in ways that have not previously been possible and to reap the benefits of treating their customers as 'good people'. It aims to reduce the cost of collections by half and increase the size of the market by 25% by improving the ability of consumers to self-manage and by supporting lenders in making more realistic lending decisions based on a real-time prediction of consumer debt trajectories. This means that both lender and consumer can have a more informed and eye-to-eye relationship that is productive rather than destructive. The platform will be configured as a bespoke model for each lender but the big opportunity into the future is to knit together all the lender specific data points that currently reside in disparate operational systems. With explicit permission across lenders, and within regulatory boundaries, the aim is to consolidate, organise, and manage this information in ways that promotes a healthier credit community and returns consumers to financial goodness. A number of tools are planned categorised in three ways: LISTEN, LEARN, LIFT.

LISTEN tools to provide profound ongoing insights into the market through longitudinal market research based on the learnings from the paper. These tools will help lenders appreciate the journey that each individual consumer finds themselves on per figure 35 below.

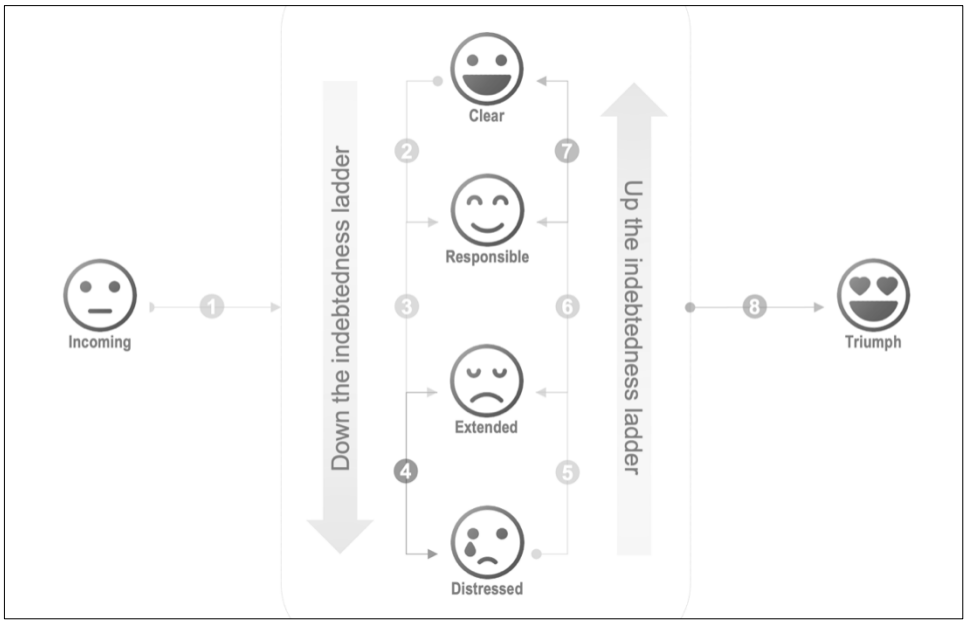


Figure 35 - Credit Journeys along the debt ladder

The various journeys will be profiled based on this research to describe consumer context at a segment level and an example of this is shown in Table 36 below:

Table 36 - Understanding the consumer context to LISTEN along the credit journey

CURRENT CREDIT SYSTEM	ENVISAGED FUTURE
Overall View	
We have good customers and bad customers but our models focus on identifying the 'bads' using: Credit vetting scorecards Pre-delinquency models Collections models and scores	Almost all customers are good people - we generally have plenty of evidence that customers intent is to be good Life is a roller-coaster - bad situations will occur and they will turn around Consumers need true partnerships with credit providers to ride out the bad times and recover during the good times
Operational processes focus on getting the 'bads' to become 'good' again or at worse on recovering what we can from the 'bads' to minimise losses	Everyone stands to gain from taking the long term view and recognising the inevitability of bad situations which need flexible solutions to avoid making the bad situation worse
End result of focusing on 'bads' is self-fulfilling as consumers are treated like bad people and ultimately they become disillusioned and behave badly.	End result can benefit everyone: CPs can spend far less on collections CPs can experience lower credit losses over the long term with fewer consumers becoming over-indebted, the market for credit can grow over time
CPs end up taking substantial losses Many consumers end up at the bottom of the debt ladder from where it is extremely hard to recover Many lives are impacted - individual borrowers support an extended network	Consumers will still experience bad situations, but CPs can actually play an important role in helping consumers to recover from these situations Far fewer consumers will end up over-indebted and marginalised with a positive impact on their extended dependents

	Treating customers as good people can be self-fulfilling in its own way Loyalty is built in difficult times Consumers will want to find ways to repay credit providers who are actively helping them When good times return, consumers will turn to the credit providers whom they know and trust
Journey 1 INCOMING	
Some relationship is built during the sales and take on process. Once customers are on-boarded they don't get much further attention other than a focus on building utilisation. Other credit providers will notice a new credit profile and sales activity will start.	Incoming customers are typically in their first job and inexperienced in financial management Many will experience significant financial pressure from their own lifestyle aspirations and the expectations of their extended family For some this will result in their become over-extended within the first 6 months Incoming customers need a period of 'intensive care' where good credit habits are built and there is positive reinforcement for good behaviours Focus on helping customers to build preparedness Encourage moderate and responsible spending - actively discouraging high utilisation Highlight the need for a financial buffer to cope with the inevitable bad situations that lie ahead Establish incentives and positive reinforcement for good behaviours - planning, budgeting, saving, moderate spending etc.
Journey 2 STAYING CLEAR	
The 'good' guys Don't need or get much attention other than sales calls - mostly un-targeted and un-solicited - and efforts to increase credit utilisation	Customers who are one life event away from being over-extended Most customers will experience such a life event - the only question is whether it will be serious enough to result in missing credit payments Need to understand and develop their preparedness Rather than leaving them alone, need to build relationships during good times to deal with the inevitable bad situations when then occur Look for ways to provide positive reinforcement of good behaviours Need to have flexible solutions ready to help customers STAY CLEAR when the speed wobbles happen
Journey 3 CLEAR to RESPONSIBLE	
Good guys who seem to have missed a payment or two Take a soft approach (initially at least), but focus on getting the customer caught up (i.e., current)	Highly likely that a life event trigger has happened Customers are missing payments because their affordability has changed - because a 'bad situation' has occurred - not because they have suddenly become bad people Focus needs to be on helping the customer to stop the descent of the debt ladder

These are still seen as ‘probable good guys’ who need to be cured back to current - they are still treated as customers, albeit not perfect ones	Work with customer to re-plan, re-budget and find a way to adjust to changed circumstances Discuss and provide flexible payment options at the first signs of trouble - this is when flexibility is most needed and most powerful Build on relationship formed during STAYING CLEAR to show customer that CP really can be part of the solution rather than part of the problem
Journey 4 EXTENDED to DISTRESSED	
These are the ‘bad’ guys where we need to minimise our losses - we no longer see these consumers as ‘customers’ but rather as an asset to be recovered Operations processes reinforce this philosophy - a hardline approach is taken with these consumers, albeit with some flexibility shown if the customer is willing to make a payment arrangement Consumers will receive a flood of contact attempts - in sharp contrast to their experience when they were CLEAR - but no attempt to build a relationship or to assist - the engagement is highly transactional Credit losses are accepted - the objective is simply to minimise the losses Consumers have had ample opportunity to remediate - we have done what we can We don’t like consumers becoming marginalised, but what more can we do when they simply won’t work with us to pay their debts?	Consumers have continued down the debt ladder after an initial life event trigger With low preparedness, they have not been able to re-group and make ends meet Credit providers did not help when it was needed - they were part of the problem rather than part of the solution Over time the transactional approach from credit providers can verge on harassment and consumers start to avoid contact attempts - reinforcing the perception of ‘bad people' Flexible payment solutions are required at this stage and sometimes they are already on offer Empathy and relationship build is at least as important - consumers are jaded at this stage and have little trust of credit providers - they need to see that credit providers are really trying to help them recover and are willing to take a long term view Requires an industry view to really provide the opportunity for these consumers to recover - no single credit provider can fix this

LEARN tools include data and metrics that provide customer level insights for more effective customer management across the credit cycle are expected to cover the following three propositions:

C.R.E.D.I.T. Monitor

- C.R.E.D.I.T. States, Journey and Product Holdings from credit bureau data
- Market, Sector and Credit Provider specific views
- Subscription service with quarterly or monthly updates
- Annual summary market view freely distributed

C.R.E.D.I.T. Preparedness Tracker

- A proprietary market research into consumer credit preparedness
- Longitudinal view of a consumer panel showing changes over time
- Market and sector views
- Subscription service with bi-annual updates
- Annual summary market view freely distributed

C.R.E.D.I.T. Insights (Bespoke)

- Proprietary market research methodology applied to a credit provider's customer base
- Market, sector and credit provider specific views
- Available ad hoc or via subscription

LIFT tools will deliver insights directly into accredit provider's operational environment and include three propositions:

1. Financial Decision Switch
    - LEARN metrics that are available live and on demand as shown in the technology architecture in diagram x below.

2. Financial Goodness Framework
    - Integration of the above proprietary tools and approaches to deliver an over-arching credit strategy

3. Consumer Mobile Application
    - Ultimately, once the above foundations are in place a consumer level application will put the ability to assess one's own credit journey in the hands of individual consumers.

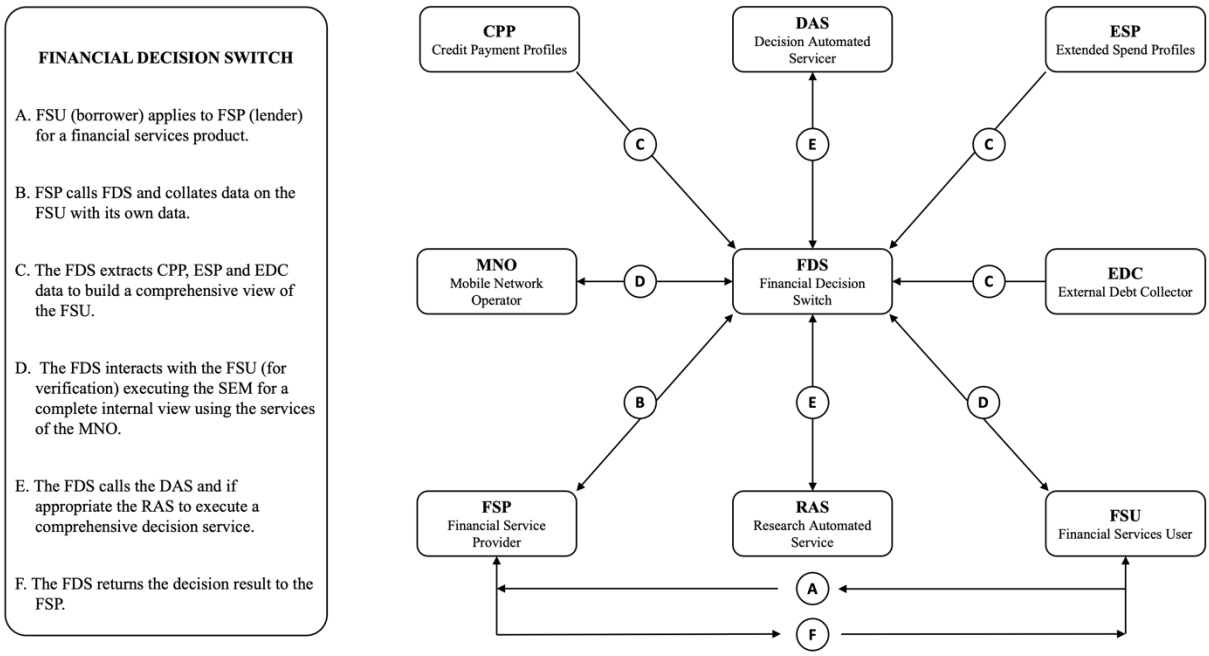


Figure 36 - Financial Decision Switch technology architecture

Conclusion of Praxis

This research and the SEM it has produced has helped inform the development of the above business model and is central to shifting control to the consumer over time by improving their levels of financial preparedness.

APPENDIX 6 - Complete research instrument

INTRODUCTION

Please ensure that you read each statement carefully and select responses that best reflect your opinion.

SCREENER QUESTIONS

S1. Do you, or any member of your household, work for any of these companies? SELECT ONE ONLY. Close if code 4 is not selected.

1. Marketing research company
2. A company or department that lends money or provides loans or credit
3. Marketing department within a financial services or retail company
4. None of the above

S2. Which of these statements best describes your role with regards to making financial decisions in your household? SELECT ONE ONLY. Close if code 3 is selected.

1. You are the sole or main decision maker in your household when it comes to financial matters
2. You share the financial decision-making job with another person/people in your household
3. You play a very limited or no role when it comes to the financial decision-making in your household

S3. What is the personal monthly income that you receive before tax and other deductions? This includes all sources of income, such as, salaries, pensions, income from investments, and so on. SELECT ONE ONLY. Close if codes 1 or 2 are selected.

1. Do not earn a personal income
2. Less than R3,199
3. R3,200-6,399
4. R6,400-R8,199
5. R8,200-R11,499
6. R11,500-R16,999
7. R17,000+

S4. Which of the following credit products, if any, do you have in your own personal capacity i.e. you took out the product yourself? SELECT AS MANY AS APPLY. Close if code 6 is selected. Close if codes 1,2,3 or 4 are not selected.

1. Retail store accounts – Edgars, Woolworths, Truworths etc
2. Cell phone /Mobile contracts - From all service providers
3. Banking products - Long-term & short-term loans, credit cards
4. Loans from payday loan providers e.g. Wonga
5. Loans from informal lenders e.g. mashonisa, loan from family
6. None of the above (Single mention only)

S5. How old are you? Close if code 1 is selected. Check quotas.

[ ]

1. Younger than 18 years
2. 18 – 27 years
3. 28 – 35 years
4. 36 – 44 years
5. 45 – 60 years
6. Above 61 years

S6. Please indicate your gender. SELECT ONE ONLY. Check quotas.

1. Male
2. Female
3. Prefer not to answer

S7. Race. SELECT ONE ONLY. Check quotas.

1. Black
2. White
3. Coloured
4. Indian/Asian
5. Prefer not to answer

S8. Which province do you reside in? SELECT ONE ONLY.

1. Eastern Cape
2. Free State
3. Gauteng
4. KZN
5. Limpopo
6. Mpumalanga
7. Northern Cape
8. North West
9. Western Cape

S9. Below are some statements relating to people's credit status, which of these statements best apply to you personally? SELECT ONE ONLY. Close if code 1 is selected.

1. I have never in my life been approved for a credit product of any kind
2. In the last 6 months, I have for the first time in my life been approved for a credit product → Classify as starting
3. I keep up to date with payment of all my credit products and have never missed a payment → Classify as resilient
4. I was previously able to keep up to date with payment of all my credit products without missing a payment, however, in the last 3 months, I have for the first time found myself missing one or two payments → Classify as resilient to responsible
5. For a long time, I found it hard to keep up to date with payment of my credit products and often found myself in arrears. However, in the last 3 months I have managed to pay some of my debts and am now keeping up to date with payments → Classify as extended to responsible
6. Historically, I have generally been able to keep up to date with the majority of my credit products, but in the last 3 months have found myself in arrears on most of my payments → Classify as responsible to extended
7. I have been in a position where I was always late on payment of accounts and credit products but recently, while I am still often late on payments, I am able to make payments some of the time → Classify as distressed to extended
8. I have historically struggled to keep up to date with payment of my accounts, and often found myself in arrears. This has escalated in the past 3 months and I find myself without a plan to pay my debts → Classify as extended to distressed

Thank you for your time. Please confirm that you volunteer to participate in a research project conducted by KLA and David Blyth as partial fulfilment of the requirements for the MPhil Degree at the Graduate School of Business with the understanding that: The research is designed to gather information about Consumer Debt and Credit Behaviours and that I will be one of approximately 1050 people being interviewed. The aim of this research is to identify factors related to your debt situation and your associated credit behaviours so that we can help the industry and consumers to build healthier financial lives. Ethical consent for the study has been approved by the UCT Commerce Faculty Ethics in Research Committee. Any personal information you provide will only be used for profiling purposes and will not be shared with any third party. We will however be requesting your ID number so that we can match your profile to credit bureaux data to allow us to better understand how your answers relate to your credit profile. You will never be identified by name in any reports using information obtained from this interview and your confidentiality as a participant in this study will remain secure - subsequent uses of records and data will be subject to standard data use policies that protect the anonymity of individuals and institutions. Your participation in this research and completion of the survey is voluntary and you may withdraw at any time. You will be compensated per the KLA YourView points and rewards system.

Are you willing to participate? *Close if code 2 is selected.*

1. Yes
2. No

I [*respondent name*], consent to participate in this interview based on the terms outlined above and subject to the following additional condition of my own (if any): capture additional consumer conditions:…….. My RSA ID number is: _____
Please ensure that you read each statement carefully and select responses that best reflect your opinion. This survey should take no more than 40 minutes to complete. SCREEN-OUT MESSAGE: Unfortunately, we have already met the required quota for this sample. We therefore do not require you to continue with the survey.

SECTION A

Programming note: Please verify ID number upfront and not at the end as a double check before the respondents starts answering the questions.

A1. Which best describes your current employment status? SELECT ONE ONLY.

1. Student
2. Self-employed
3. Employed, not yet considering retirement
4. Employed, considering retirement
5. Retired
6. Unemployed

A2. Which of the following applies to you regarding your current marital status and family set-up? SELECT ONE ONLY.

1. Single (unmarried/ divorced/ widowed), with no children
2. Single (unmarried/ divorced/ widowed), with children who are still dependents
3. Single (unmarried/ divorced/ widowed), with children who are not dependent (not in household)
4. Married/ co-habiting, with no children
5. Married/ co-habiting, with children who are still dependents
6. Married/ co-habiting, with children who are not dependent (not in household)

A3. Who makes up your household? SELECT AS MANY AS APPLY.

1. Parent(s) that you are somewhat dependent on
2. Parent(s) (or in-laws) dependent on you
3. Child(ren) 5 years or under
4. Child(ren) 6-13 years old
5. Child(ren) 14-17 years old
6. Child(ren) 18 years or older
7. Sibling(s)
8. Extended family member(s)
9. Domestic worker(s)
10. Just me / alone
11. Other (please specify)

A4. How many people depend on you? SELECT ONE ONLY.

1. One
2. Two
3. Three - five
4. Six – ten
5. More than ten
6. None

A5. Which of the following have you done, or do you intend to do, in the next 6 months, if at all? MULTIPLE MENTION POSSIBLE PER STATEMENT.

1. Buy a house
2. Get married
3. Start a family
4. Have my first child

5. Have another child
6. Have done in past 6 months
7. Intend to do in next 6 months
8. Neither (Single mention only)

A6. What is the highest level of education you have achieved? SELECT ONE ONLY.

1. No formal education
2. School education, never matriculated
3. High school (with Matric)
4. Professional certificate
5. Diploma
6. Under-graduate degree
7. Post-graduate degree

A7. Which of the following best describes how you occupy the property you currently live in? SELECT ONE ONLY.

1. Own it outright
2. Own it with the help of a mortgage or loan
3. Rent it
4. Live here rent-free (including in relative's or friend's property; excluding squatting)

A8. What are the sources of income in your household? SELECT AS MANY AS APPLY.

1. Wages or salary (including commission)
2. Self-employed earnings or proceeds from a business
3. Government benefit(s) or allowance(s)
4. Pension/Retirement income
5. Transfers from family members (not living in same household)
6. Transfers from someone else outside the household (such as maintenance payments)
7. Other (please specify …….

A9. How confident do you feel…SELECT ONE ONLY PER STATEMENT. *Randomise*

1. Managing your money
2. Making decisions about financial products and services
3. Working with numbers when you need to in everyday life
4. Planning for your financial future

1 -Not at all confident	2	3	4	5	6	7	8	9	10 – Very confident	Don't know

SECTION B

B1. When did you take out your first credit product? SELECT ONE ONLY.

1. Less than 3 months ago
2. 3 – 6 months ago
3. 6– 12 months ago
4. 1 year to less than 2 years ago
5. 2 years to less than 4 years ago
6. 4 years to less than 6 years ago
7. More than 6 years ago

B2. Below are some statements that describe different financial capabilities. For each statement, please indicate whether you "agree" or "disagree" with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. You find it easy to make decisions about money
2. You have a thorough understanding of how credit / debit works

3. You are more responsible with money than most people you know
4. You wish you understood financial matters more than you do now
5. You are knowledgeable about money matters
6. You know enough about financial products to choose ones that are suitable for your circumstances, without consulting a financial advisor
7. You do understand financial talk and jargon

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

B3. Suppose you have R100 in a savings account and the guaranteed interest rate is 20% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made? **ENTER AMOUNT**. Allow the capturing of a numerical Rand amount. Include Don't know.

B4. And how much would be in would you have in this account after 5 years (remembering there are no fees or tax deductions). Would it be…? SELECT ONE ONLY.

1. More than R200
2. Exactly R200
3. Less than R200
4. Don't know
5. Refuse to answer

B5. Imagine the interest rate on your savings account was 3% and inflation in the country was at 5%, after 1 year would you be able to buy…? SELECT ONE ONLY.

1. More than today with the money in the account
2. Exactly the same as today with the money in this account
3. Less than today with the money in this account
4. Don't know
5. Refuse to answer

B6. Suppose you owe R3,000 on your credit card. You pay a minimum payment of R30 each month. At an annual percentage rate of 12% (or 1% per month), how many years would it take to eliminate your credit card debt if you made no additional new purchases? SELECT ONE ONLY.

1. Less than 5 years
2. Between 5 and 10 years
3. Between 10 and 15 years
4. Never
5. Don't know
6. Refuse to answer

B7. Thinking about your finances, to what extent do you find the following difficult or easy to manage? Please use a scale from 0 to 10 where 0 means it is difficult and 10 means it is easy. SELECT ONE ONLY PER STATEMENT. Insert slider question type. Randomise.

1. Earning money
2. Saving money
3. Buying things, I do not really need
4. Affording the things, I want
5. Working with a budget
6. Dealing with lender – banks, stores you have accounts with
7. Managing the payment of my accounts

B8. Which of the following descriptions fits you better? SELECT ONE ONLY.

1 - Tightwad (you have difficulty spending money)	2	3	4	5	6	7	8	9	10 - Spendthrift (you have difficulty controlling spending)

B9. Some people have trouble limiting their spending: they often spend money – for example on clothes, meals, vacations, phone calls – when they would better not to. Other people have trouble spending money. Perhaps because spending money makes them anxious, they often do not spend money on things they should spend it on.

How well does the first description fit you? That is, do you have trouble limiting your spending? SELECT ONE ONLY.

1.Never	2.Rarely	3.Sometimes	4.Often	5.Always

How well does the second description fit you? That is, do you have trouble spending money? SELECT ONE ONLY.

1.Never	2.Rarely	3.Sometimes	4.Often	5.Always

B10. Following is a scenario describing the behaviour of two shoppers. After reading about each shopper, please answer the question that follows. Mr. A is accompanying a good friend who is on a shopping spree in the local mall. When they enter a large department store, Mr. A sees that the store has a "one-day-only-sale" where everything is priced 10–60% off. He realizes he doesn't need anything yet can't resist and ends up spending almost R1,000 on stuff.

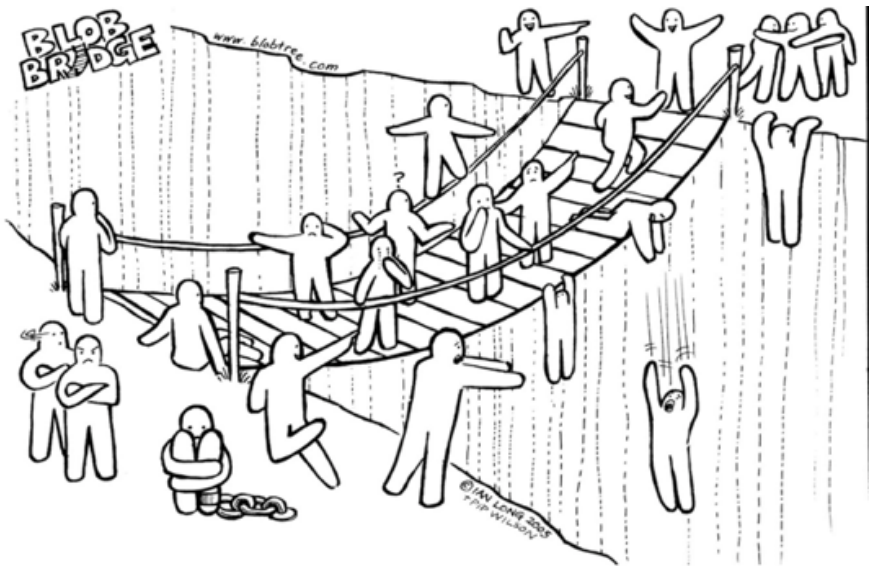
Mr. B. is accompanying a good friend who is on a shopping spree in the local mall. When they enter a large department store, Mr. B sees that the store has a "one-day-only-sale" where everything is priced 10–60% off. He figures he can get great deals on many items that he needs, yet the thought of spending money keeps him from buying the stuff. In terms of your own behaviour, who are you more similar to, Mr. A or Mr. B? SELECT ONE ONLY.

1. Definitely Mr. A
2. Maybe Mr. A
3. Either one
4. Maybe Mr. B
5. Definitely Mr. B

B11. Looking at the below images, which one of these images best depicts where you were financially 3 months ago? SELECT ONE ONLY. *Insert image. Allow the capturing of open ended responses "Why"*

B12. Which one best depicts your current financial situation? SELECT ONE ONLY**.** *Insert image. Allow the capturing of open ended responses "Why"*

B13. Which one best depicts how you would like your financial situation to look in the next 3 months? SELECT ONE ONLY. *Insert image. Allow the capturing of open ended responses "Why"*



B14. Below are some statements that others have made about financial matters and life in general. For each statement, please indicate whether you "agree" or "disagree" with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. You live for today and will deal with the future when it comes
2. You worry about the future
3. You live each day as it comes
4. You are comfortable about your financial future because you have adequately planned for it
5. You are always optimistic
6. You are a respected member of the community
7. You are concerned about how others see you

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

B15. Below are some statements that others have made about financial matters and life in general. For each statement, please indicate whether you "agree" or "disagree" with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. I admire people who own expensive homes, cars, and clothes.
2. Some of the most important achievements in life include acquiring material possessions.
3. I do not place much emphasis on the amount of material objects people own as a sign of success.
4. The things I own say a lot about how well I'm doing in life.
5. I like to own things that impress people.
6. I do not pay much attention to the material objects other people own.
7. I usually buy only the things I need.
8. I try to keep my life simple, as far as possessions are concerned.
9. The things I own are not all that important to me.
10. I enjoy spending money on things that are not practical.
11. Buying things gives me a lot of pleasure.
12. I like a lot of luxury in my life.
13. I put less emphasis on material things than most people I know.
14. I have all the things I really need to enjoy life.
15. My life would be better if I owned certain things I don't have.
16. I wouldn't be any happier if I owned nicer things.
17. I would be happier if I could afford to buy more things.
18. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

B16. Please indicate the extent to which you agree or disagree with the below statements. For each statement, please indicate the extent to which you "agree" or "disagree" with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. I use money to influence other people to do things for me
2. I must admit that I purchase things because I know they will impress others
3. In all honesty, I own nice things in order to impress others
4. I behave as if money were the ultimate symbol of success
5. I must admit that I sometimes boast about how much money I make
6. People I know tell me that I place too much emphasis on the amount of money a person has as a sign of his success
7. I seem to find that I show more respect to people with more money than I have
8. Although I should judge the success of people by their deeds, I am more influenced by the amount of money they have
9. I often try to find out if other people make more money than I do
10. I do financial planning for the future
11. I put money aside on a regular basis for the future
12. I save now to prepare for my old age
13. I have money available in the event of another economic depression
14. It bothers me when I discover I could have gotten something for less elsewhere
15. After buying something, I wonder if I could have gotten the same for less elsewhere
16. When I make a major purchase, I have the suspicion that I have been taken advantage of

17. It's hard for me to pass up a bargain
18. I am bothered when I have to pass up a sale
19. I spend money to make myself feel better
20. I show signs of nervousness when I don't have enough money
21. I show worrisome behaviour when it comes to money
22. I worry that I will not be financially secure
23. I keep track of my money
24. I follow a careful financial budget
25. I am very prudent with money
26. I argue or complain about the cost of things I buy
27. I automatically say, "I can't afford it," whether I can or not
28. When I buy something, I complain about the price I paid
29. I hesitate to spend money, even on necessities

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

Now please rate your own performance or capability in relation to each of the following statements:

B17. Below are some statements about financial matters. For each statement, please indicate the extent to which you agree or disagree with each one. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. It is hard to stick to my credit commitments when unexpected expenses arise
2. My credit commitments make it challenging to make progress toward my financial goals
3. When unexpected expenses occur, I usually have to use credit
4. When faced with a challenge with my credit, I have a hard time figuring out a solution
5. I lack confidence in my ability to manage my credit
6. I worry about running out of credit
7. I can always manage to solve difficult credit problems if I try hard enough.
8. I am confident that I could deal efficiently with unexpected credit events.
9. I can solve most credit problems if I invest the necessary effort.
10. I can remain calm when facing credit difficulties because
11. I can rely on my coping ability

1	2	3	4
Exactly true	Moderately true	Hardly true	Not at all true

B19. Please indicate the extent to which you agree or disagree with the below statements. For each statement, please indicate the extent to which you “agree” or “disagree” with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. I often buy things spontaneously.
2. Just do it” describes the way I buy things.
3. I often buy things without thinking.
4. I see it, I buy it” describes me.
5. Buy now, think about it later” describes me.
6. Sometimes I feel like buying things on the spur of the moment.
7. I buy things according to how I feel ~~at~~ in the moment.
8. I carefully plan most of my purchases.
9. Sometimes I am a bit reckless about what I buy

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

B20. Please indicate the extent to which you agree or disagree with the below statements. For each statement, please indicate the extent to which you “agree” or “disagree” with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. Taking out a loan is a good thing because it allows you to enjoy life.
2. It is a good idea to have something now and pay for it later.
3. Using credit is basically wrong.

4. I would rather go hungry than buy food on credit
5. I plan ahead for larger purchases.
6. Being in debt is never a good thing.
7. Credit is an essential part of today's lifestyle.
8. It is better to go into debt than to let children go without Christmas presents.
9. It is important to live within one's means.
10. Even on a low income, one should save a little regularly.
11. Borrowed money should be repaid as soon as possible.
12. Most people run up too much debt.
13. It should be more difficult for people to take out credit
14. Borrowing money is essential these days
15. Borrowing money is sometimes a good thing.
16. I am rather adventurous with my money.
17. It is okay to borrow money to pay for children's clothes
18. I avoid credit whenever possible

1	2	3	4	5	6	7
Strongly agree	Agree	Slightly agree	No opinion	Slightly disagree	Disagree	Strongly disagree

SECTION C

C1a. I like to use credit…SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
When it's the most convenient option									To allow me to achieve my goals

C1b. I like to use credit…SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
To buy things in the moment I want them									To manage my money according to my needs

C1c. I like to use credit…SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
To meet my lifestyle needs									To cater for unforeseen events

C2a. When I have to make a credit repayment …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I make the payment only when really necessary									I usually plan ahead to make payments

C2b. When I have to make a credit repayment …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I find ways to pay in order of urgency									I find ways to pay in order of importance

C2c. When I have to make a credit repayment …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I pay to avoid negative consequences									I pay to build a good credit profile

C3a. When I do not have enough to cover my credit repayments …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I use other forms of credit to manage									I ask for assistance so that I can plan better

Ask only if >5 in C3a.

Who do you ask for help? SELECT AS MANY AS POSSIBLE.

Friends

Family

Employer

Lender

Other (please specify…..)

C3b. When I do not have enough to cover my credit repayments …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I usually continue the way I have in the past									I stop everything and re-plan my goals

C3c. When I do not have enough to cover my credit repayments …? SELECT ONE ONLY.

1	2	3	4	5	6	7	8	9	10
I give up other things so that I can pay for credit									I reduce my use of credit where possible

C4. How often do you use your credit card(s) or store card (s)? SELECT ONE ONLY

1. Very often
2. Fairly often
3. Sometimes
4. Not very often
5. Never
6. Don’t know
7. Prefer not to say

C5. How do you generally handle paying your bill each month for your credit/store card(s)? SELECT ONE ONLY

1. Always pay only the minimum
2. Usually pay only the minimum
3. Usually pay something between the minimum and the full balance
4. Usually pay full
5. Always pay full
6. Don’t know
7. Prefer not to say

C6. Is building a good credit rating…? SELECT ONE ONLY

1. Very important
2. Fairly important
3. Neither important nor unimportant
4. Fairly unimportant
5. Very unimportant
6. Don’t know

C7. To what extent do you feel that keeping up with your bills and credit commitments is a burden? SELECT ONE ONLY

1. It is not a burden at all
2. It is somewhat of a burden

3. It is a heavy burden
4. Don't know

C8. In the last 6 months, have you fallen behind on, or missed, any payments for credit commitments or domestic bills for any 3 or more months? These 3 months don't necessarily have to be consecutive months. SELECT ONE ONLY

1. Yes
2. No
3. Don't know

Ask only if code 1 in C8.

C8a. How did you end up in a situation where you were unable to pay or make the credit payment? SELECT AS MANY AS APPLY.

1. 1.I had an emergency expense that required funds e.g. funeral, medical expenses etc
2. 2.I had a major life event e.g. wedding, having a child, etc.
3. 3.My financial situation changed, and I was unable to pay
4. 4.I used the money to pay for essentials / necessities – groceries
5. 5.I used the money to pay for non-necessities / essentials – travel, holiday, shopping etc
6. 6.Other (please specify…..)

C9. Is consulting an advice organisation about debt something…? SELECT ONE ONLY

1. You are currently doing
2. You are planning to do soon
3. You are thinking about doing in the future
4. You don't have any plans to do so but you might consider it
5. You would consider if your situation got worse
6. You cannot see yourself doing
7. You would never consider
8. Don't know

C10. How well are you keeping up with bills and credit commitments at the moment? SELECT ONE ONLY

1. Keeping up with all bills and commitments without any difficulties
2. Keeping up with all bills and commitments, but it is a struggle from time to time
3. Keeping up with all bills and commitments, but it is a constant struggle
4. Falling behind with some bills or credit commitments
5. Having real financial problems and have fallen behind with many bills or credit commitments
6. Not applicable - don't have any bills or credit commitments
7. Don't know
8. Prefer not to say

C11. How often do you/your household…? SELECT ONE ONLY PER STATEMENT

1. Have any money left over after you've paid for food and other bills
2. Use a credit card, overdraft or borrow money to buy food or pay bills because you've run short of money
3. Borrow money to pay off debts
4. Borrow from family/friends because you have run out of money
5. Very often
6. Fairly often
7. Sometimes
8. Not very often
9. Never
10. Don't know

C12. Imagine you have to pay an unexpected bill within the next seven days from today. What is the biggest bill you could pay, either from money you already have, or money you could easily borrow in a way that you consider affordable? If you don't know the exact amount your best guess is fine. SELECT ONE ONLY

1. None – I couldn't pay an unexpected bill
2. R500
3. R1,000
4. R3,000
5. R5,000
6. R10,000
7. R25,000
8. R50,000
9. R100,000
10. Don't know
11. Prefer not to say

SECTION U

U1. Now, looking at the below list of credit providers, which option best applies to you for each. SELECT ONE ONLY PER STATEMENT. *Insert lender brand list Down the side. Randomise.* Across the top:

1. Not familiar with company / brand
2. Know of them, but have never used them for credit
3. Have used them in the past 3 years for credit
4. Currently have a credit product with them

Ask for each lender ever used – where codes 3 or 4 were selected in U1. Create a loop for each product mentioned in U2 – Ask U3 to U5.

U2. Which credit products did you have, or do you currently have with (*insert brand selected in C1*)? SELECT AS MANY PRODUCTS AS APPLY PER BRAND.

1. Retail store card
2. Retail store loan
3. Cell phone / mobile contract/s
4. Banking product – credit card
5. Banking product – home loan
6. Banking product – vehicle finance
7. Banking product – personal loan (long & short-term)
8. Banking product - overdraft
9. Loans from payday loan providers
10. Loans from informal lenders e.g. mashonisa, loan from family

U3. Please rank the credit products you pay monthly in order of what you pay 1st, 2nd, 3rd etc.)? *Insert all products selected in U2. Insert click and rank logic.* Ask for each product mentioned in U2.

U4. When did you take out the (*insert product selected in U2*)? SELECT ONE ONLY.

1. Less than 3 months
2. 3 – 12 months
3. 1 year to less than 2 years
4. 2 years to less than 4 years
5. 4 years to less than 6 years
6. More than 6 years ago

Ask for each product mentioned in U2, where code 1 – less than 3 months was selected in U4?

U5. Thinking back to when you took out the (*insert product from U2*), which one of these statements best describes this decision? SELECT ONE ONLY.

1. Completely planned, knew what I wanted and set about getting it for myself
2. Completely planned, knew what I wanted and set about getting it for someone else
3. Completely unplanned, I did not intentionally seek out the product for myself
4. Completely unplanned, I did not intentionally seek out the product for someone else

Ask for each product mentioned in U2, where code 1 – less than 3 months was selected in U4

U6. What triggered the need to take up the (*insert product from U2*)? SELECT AS MANY AS APPLY.

1. An emergency that required funds e.g. funeral, medical expenses etc
2. A major life event e.g. wedding, having a child, etc.
3. Necessities / essentials my income did not cover
4. Non necessities / essentials my income did not cover – travel, holiday, shopping etc
5. Security of having funds available
6. To build a credit record

Ask for each lender ever used – where codes 3 or 4 were selected in U1.

U7. Specifically thinking about your credit products, please rate how satisfied you are with the level of service experience you received from (*insert lender*) Overall on a scale of 0 to 10 with 0 meant completely dissatisfied, and 10 means completely satisfied. SELECT ONE ONLY PER BRAND.

U8. Below are some statements that people have made about brands or companies that offer credit products. Thinking about your past experience with these brands / companies, please indicate which brands or companies, if any, you feel are best associated with each statement. You may mention one brand / company, more than one, all or none, as many as you feel fit each statement.

FOR EACH STATEMENT, SELECT AS MANY AS APPLY. Show all credit providers– where code 3 or 4 were selected in U1

1. Have your best interests at heart
2. Proactively communicate with you
3. Made you feel taken advantage of
4. Made you feel like you were in control
5. Offer value added services (these are extra benefits like rewards)
6. Have good / the best service
7. Do not offer good service
8. Have flexible repayment terms
9. Is the best service provider (SINGLE MENTION ONLY)

U9. Below are some statements that others have made about credit and credit scores. For each statement, please indicate whether you "agree" or "disagree" with each statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. Having different kinds of credit will improve your credit score
2. Spending your full credit card limit does not impact your credit score as long as you make the monthly repayments on time
3. Checking your own credit score will hurt your credit
4. Your credit score can influence your ability to get a job
5. Personal characteristics like your age and gender influence your credit score

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

U10. Below are some statements that describe experiences that other people have had with companies that offer financial products. For each statement, please indicate whether you "agree" or "disagree" with that statement. SELECT ONE ONLY PER STATEMENT. *Randomise.*

1. You have been offered more credit than what you could afford
2. An affordability assessment was done before you were offered credit
3. You have taken on credit without understanding the risks and costs in terms of the agreement
4. When you were offered credit, you felt that you could negotiate the terms with the provider
5. You were given access to the credit agreement / contract before I had to sign
6. The financial service provider discussed the terms and conditions of the contract with you

1. Strongly disagree	2.Disagree	3.Neutral	4.Agree	5.Strongly agree

U11. Have you fallen behind on, or missed, any payments for your credit commitments the past 3 months? SELECT ONE ONLY.

1. Yes
2. No

If answered yes in U11 ask U12 and U13.

U12. What was the single most important reason you missed your credit payment? SELECT ONE ONLY.

1. I did not know who to pay
2. I did not have enough money to pay
3. I thought nothing bad would happen
4. I did not want to pay
5. Other (please specify…..)

U13. How did you end up in a situation where you were unable to pay or make the credit payment? SELECT AS MANY AS APPLY.

1. I had an emergency expense that required funds e.g. funeral, medical expenses etc
2. I had a major life event e.g. wedding, having a child, etc.
3. My financial situation changed, and I was unable to pay
4. I used the money to pay for essentials / necessities – groceries
5. I used the money to pay for non-necessities / essentials – travel, holiday, shopping etc
6. Other (please specify…..)

Ask all. Only show brands where codes 3 and 4 were selected in U1.

U14. Now thinking in general about all the lenders you have credit products with, how would you describe your relationship with them ….? SELECT ONE ONLY PER STATEMENT.

1. Currently
2. When you took out the product
3. When you missed a payment / did not make a payment

1. "Transactional" Simple functions like paying bills checking account statements etc.	2	3	4	5	6	7	8	9	10	11. "Advice/Relationship: Provides advice that improves my financial well-being	Not applicable

U15. To what extent, if at all would you say your current financial status has been affected by COVID-19? SELECT ONE ONLY.

1. To a lesser extent
2. To some extent
3. To a moderate extent
4. To a great extent
5. To a very great extent

Thank you for your time, it is greatly appreciated.

Lender list:

First National Bank
ABSA
Standard Bank
Nedbank
Capitec Bank
African Bank
Woolworths Financial Services
RCS Finance
DirectAxis
Old Mutual
Truworths
The Foschini Group
Edcon Group
Rage
Pepkor Group
Joshua Doore Group
Lewis Stores
HomeChoice
Mr Price
Vodacom Service Provider
M-Tel Service Provider
Telkom
Cell C

Lender product list:

Lenders	Retail store card	Retail store loan	Cell phone / mobile contract/s	Banking product – credit card	Banking product – home loan	Banking product – vehicle finance	Banking product – personal loan (long & short-term)	Banking product - overdraft	Loans from payday loan providers	Loans from informal lenders
First National Bank			X	X	X	X	X	X		
ABSA			X	X	X	X	X	X		
Standard Bank			X	X	X	X	X	X		
Nedbank			X	X	X	X	X	X		
Capitec Bank			X	X	X	X	X	X		
African Bank			X	X	X	X	X	X		
Woolworths Financial Services	X	X	X	X						
Truworths	X	X	X	X						
The Foschini Group	X	X	X	X						
Edcon Group	X	X	X	X						
Rage	X	X	X	X						
Pepkor Group	X	X	X	X						
Joshua Doore Group	X	X	X	X						
Lewis Stores	X	X	X	X						
HomeChoice	X	X	X	X						
Mr Price	X	X	X	X						
RCS Finance									X	X
DirectAxis									X	X
Old Mutual				X	X	X	X	X	X	X
Vodacom Service Provider	X	X	X	X			X		X	
MTN / M-Tel	X	X	X	X			X		X	
Telkom	X	X	X	X			X		X	
Cell C	X	X	X	X			X		X	

-END-