

Cash or Card: Consumer Perceptions of Payment Modes

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Table of Contents

List of Figures	v
List of Exhibits.....	vi
List of Tables.	vii
Attestation of Authorship.....	viii
Acknowledgements.....	ix
Ethical Approval.....	x
Abstract.....	xi
Chapter One: Introduction	1
1.1. Overview	1
1.2. Background	2
1.3. Conceptual Base	3
1.4. Study Rationale	4
1.5. Study Locus and Context	6
1.6. Research Design	7
1.6.1. Sampling procedure	8
1.6.2. Analytic Procedures	8
1.7. Benefits	9
1.8. Thesis structure	9
Chapter Two: Literature Review	11
2.1. Introduction	11
2.2. The emergence of the money concept	12
2.3. Economic exchanges and modes of payment	13
2.4. Electronic money transfer system (EMTS)	14
2.5. Payment Mode and Purchase Behaviour	16
2.5.1. Credit Card Research	16
2.5.1.1. Credit cards and purchase behaviour	17
2.5.2. Debit card research	20
2.5.2.1. Debit cards and purchase behaviour	21
2.6. Payment Mode effects on Purchase behaviour: Explanatory theories	23
2.6.1. Mental accounting and payment coupling	23
2.6.2. Pain of paying	25
2.6.3. Transparency	26
2.6.4. Research questions	27
2.6.5. Summary	30
Chapter Three: Conceptual Positioning and Proposition Formation	31
3.1. Introduction	31
3.2. Background	32
3.3. Theoretical basis & propositions	33
3.4. Anchoring, Cognitive embodiment and Mental Accounting	34
3.5. Proposition Formation.....	36
3.6. Summary	39

Chapter Four: Research Design and Methodology	41
4.1. Chapter overview	41
4.2. Research Approach	42
4.3. Study Locus and Participants	44
4.4. Phase One: Data collection and analysis procedures	45
4.4.1. Pilot Group Sessions	46
4.4.2. Participant Selection	50
4.4.3. Data Collection and analysis	50
4.5. Phase Two: Questionnaire Development and Testing	51
4.6. Phase Three: Payment mode choice and Purchase decisions	52
4.6.1. Data entry and analysis	53
4.7. Summary	55
Chapter Five: Phase One: Results and Analysis	57
5.1. Introduction	57
5.2. Data Type and Analysis	58
5.3. Participant Profile- Focus Group Sessions	59
5.4. Results- Projective Tests	59
5.5. Results- Focus Group Sessions	68
5.6. Discussion	73
5.7. Proposition One Evaluation	75
5.8. Conclusion	76
Chapter Six: Development and Validation of the Payment Mode Perception Scale	88
6.1. Chapter Overview	89
6.2. Justification	89
6.3. Pre Test One	90
6.3.1. Pre Test One - Item generation	91
6.3.2. Pre Test One -- Data preparation	95
6.3.3. Pre Test One- Internal consistency assessment	97
6.4. Testing and finalizing: Pre-Test two	99
6.4.1. Pre Test Two- Data Preparation	96
6.4.2. Pre-Test Two –Internal Consistency Assessment	100
6.4.3. Item reduction and exploratory investigation of dimensionality	102
6.4.4 Pre Test Two - Final Factor analysis	104
6.4.5. Pre-Test Two - Scale reliability and validity	105
6.4.6. Assessing Construct Validity	106
6.5. Field Study: Scale validation process	110
6.5.1. Scale purification	111
6.5.2 Demonstrating Validity	113
Chapter Seven: Phase Two: Analysis and Results	116
7.1. Chapter Overview	116

7.2.	Data Cleansing and Preparation	117
	7.2.1. Data Cleansing	117
	7.2.2. Data entry and management	119
7.3.	Sample Profile.....	119
7.4.	Results	120
	7.4.1. Control Group Examination	121
	7.4.1.1. Control group-within group comparison	121
	7.4.1.2. Control Group-Test Groups Comparison	122
	7.4.1.3. Summary of Control Group analysis	123
	7.4.2. Proposition Two Evaluation	124
7.5.	Proposition Three Evaluation	129
7.6.	Summary	131
Chapter Eight: Conclusions, Contribution and Future Research		135
8.1.	Introduction.....	135
8.2.	Conclusion related to Research Questions.....	135
8.3.	Theoretical Contribution	140
8.4.	Methodological Contribution	142
8.5.	Managerial and Social Impact	142
8.6.	Limitation of the Study.....	143
8.7.	Future Research.....	144

List of Figures

Figure 6.1 Sree Plot	92
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List of Exhibits

Exhibit 2.1. Zellermeier 1996:66 Payment mode choice based on degree of pain-pleasure associated with the purchase	25
Exhibit 4.1. Shoe Types (after Kaiser et al. 1987)	49
Exhibit 4.2. Workbook tasks	49
Exhibit 4.3. Product Categories	54
Exhibit 5.1. Demographic Profile	59
Exhibit 5.2. Projective test One(a)	60
Exhibit 5.3. Projective test One(b)	61
Exhibit 5.4. Shoes and Human Attributes associated with shoes	66
Exhibit 5.5. Human Trait Scores of \$20 and \$100 Notes and \$100 in Debit Card	67
Exhibit 5.6. Summary of Findings	68
Exhibit 5.7. Key Themes Identified	77
Exhibit 5.8. Quotes for PMP Scale	80
Exhibit 6.1. Payment Mode Associations	91
Exhibit 6.2. Qualitative Themes	91
Exhibit 6.3. Pre-test One scale items	93
Exhibit 6.4. Deleted items in Pre-test One	94
Exhibit 6.5. 49 Item scale in Pre-test Two	98
Exhibit 6.6. Items did not load in Factor Analysis	103
Exhibit 6.7. Items reworded and retained in Pre-test Two	103
Exhibit 6.8. The items that were deleted in Pre-test Two	103
Exhibit 6.9. Pre-Test Items removed from the 49 item scale	110
Exhibit 6.10. The Thirty-four Item Scale	111
Exhibit 6.11. Factor Dimensions	114
Exhibit 7.1. Propositions	116
Exhibit 7.2. Proposition Two- Evaluation	128

List of Tables

Table 6.1. Exploratory Factor Analysis –Pre-test One	94
Table 6.2. Inter-item and Item-to-total correlations	96
Table 6.3. Coefficient alpha after initial item purification	97
Table 6.4. Pre-test Two – Skewness and Kurtosis before Transformation	99
Table 6.5. Assessing Test- Re test Reliability and Response bias	100
Table 6.6. Corrected item-to-total correlations	101
Table 6.7. Coefficient alpha before initial item purification	101
Table 6.8. Variance explained and KMO & Bartlett test	101
Table 6.9. Item communalities less than 0.50.....	102
Table 6.10 Factor analysis- Pattern Matrix	104
Table 6.11. Confirmatory Factor Analysis: Pre-test Two	107
Table 6.12. Demonstrating convergent validity from Pre-test Two	108
Table 6.13. Pre Test Two -- Discriminant validity	109
Table 6.14. Summary of Final Results from Exploratory Factor Analysis – Field Study...	112
Table 6.15. Confirmatory Factor Analysis: Field Study	113
Table 6.16. Demonstrating convergent validity	113
Table 7.1. Power Levels of Two Means: Variations by sample and effect size	118
Table 7.2. Participant profile by payment mode	119
Table 7.3. Control group-within group comparison	121
Table 7.4. Control group-Test Groups Comparison	122
Table 7.5. Average spend on manufacturer’s brand vs. private label.....	123
Table 7.6. Average spend by payment mode	124
Table 7.7. Average items bought across payment mode	125
Table 7.8. Indulgence food product by payment mode	126
Table 7.9. Food and drinks by payment mode: Average Spend	126
Table 7.10. Non-food items by payment mode: Average spend	127
Table 7.11. Manufacturers and distributors brands: Average spend	137
Table 7.12. Comparisons of Factor Means	130
Table 7.13. Mean Item Score: Field Study	134

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Ethical Approval

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Abstract

This study examines the cognitive and emotional associations that people have with payment modes in order to ascertain if and how these associations impact on payment mode choice and how the payment mode selected impacts on purchase behaviour. This is a neglected research area, but not totally ignored. Early research compared cash, cheque and credit card payment modes and concluded that credit card use equates with increased spending. Whether the change is due to access of credit or the absence of cash is not wholly ascertained. The absence of cash implies that the physicality of the mode may have a bearing on purchase decisions. Both modes of payment lack 'transparency'. This research examines the underlying reasons for the physicality factor and finds evidence that the physicality of notes and coins affect perceptions, judgements and behaviours.

This study is a multi-phase, multi-method field based naturalistic enquiry. Modes of data collection included focus groups and in-depth interviews; a quasi field experiment and a self report scale. Nvivo was used to analyse focus group data to develop items for a payment mode perceptions (PMP) scale. Data from the field study employs ANOVA technique to examine modes of payment effect on purchase behaviour. The result indicates that the payment mode has significant effect on value and volume of purchase. Participants who used debit cards spent significantly higher than did the cash group. Participants who preferred to and normally used cash or debit card exhibited positive feeling to their preferred payment mode. However irrespective of their preferred mode, participants did not like gifts of money deposited to their bank accounts, thought that their awareness of spending and money management skills were impair by electronic card use.

Chapter One

Introduction

1.1: Overview

In 1979, Hirschman lamented the lack of research in the area of payment mode effects on point of sale purchase behaviour. She suggested that this lack may be due to the assumption that there are no significant differences among payment systems and that even if there were; the differences did not affect purchase behaviour (Hirschman, 1979:58). In 2006, Schreft noted that the situation had not changed. However the topic has not been totally ignored as there are studies that examine the effect of credit card use compared to cash; these studies indicate that credit card use, when compared to cash, increases the overall amount spent per transaction (Hirschman, 1979; Feinberg, 1986; McCall and Belmont, 1996; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; 2003; McCall, Trombetta, and Gipe, 2004; Raghubir and Srivastava, 2008). Prelec, Loewenstein, Simester, and Soman, propose that the increased spending behaviour is due to a ‘decoupling’ effect; the idea being that electronic payment modes lack transparency so that the actual cost of the transaction is obscured. Some researchers also suggest that consumers experience psychological pain when parting with cash. The explanation being that the physicality of cash creates an acute awareness that something of value is being transferred (Prelec and Loewenstein, 1998; Raghubir and Srivastava, 2008; Soman, 2003; Thomas, Desai and Seenivasan, 2011; Zellermayer, 1996).

Two aspects of these studies limit our understanding of this phenomenon. One is that the studies focus on the use of credit cards and the other is that the only emotion recognised is the experience of psychological pain- pleasure. This means that the outcome of using personal savings as opposed to borrowed money when using an electronic payment is not fully explored. Also, by focusing on *pain-pleasure*, the possibility of other cognitive and emotional associations is overlooked. The purpose of the study is to examine the cognitive and emotional associations that people have with payment modes, particularly cash and debit card and to ascertain if and how these associations impact on payment mode choice and how

the payment mode selected impacts on purchase behaviour. The intent is not to assess the emotions actually experienced in a 'real-time' event but to ascertain perceptions of payment modes that will provide insight into possible cognitions and emotions experienced when paying for transactions that may influence such experiences.

1.2: Background

Although researchers attribute the difference in purchase behaviour to the opacity of the non-cash payment mode, because the comparisons are across cash and credit card use, we do not know if the behaviour is a result of the physical characteristics of the payment mode or the access to credit. There is some evidence that payment mode characteristics may be a factor. Soman (2001, 2003) found that the use of prepaid cards (integrated circuit cards, ICC, usually referred to as 'smart cards') increases the amount spent per transaction. However because the money is transferred so it can be used for a specific purpose there may be an awareness that the money is 'spent'. Thaler (1985; 1999) and Gourville and Soman (1998) explain this phenomenon as pseudo-sunk cost effect. Thomas et al (2011) using supermarket panel data, compared the purchase of unhealthy food items (they use the term 'vice' products), across three payment modes - cash, debit and credit card. They report that the purchase of vice products correlates (positively) with debit and credit card use and negatively with cash. However, a study by Klee (2004), also using supermarket panel data, found no difference in the number of items and total value of the purchases across debit and credit card payment modes. So whilst the physical characteristics of the payment mode may also be a factor, evidence is varied.

Although the credit card research assumes that when an electronic payment instrument is used, the sense of parting with something of 'value' is diminished, the studies do not specifically examine why. The implied understanding is that the associations people have with cash are different to those they have with electronic systems. Snelders, Lea, Webley and Hussein (1992) point out that although the concept of money is complex, the core of our interaction with money is as notes and coins and that their physicality imprints a psychological pattern in our minds and thus affects our behaviour. They recognise that coins

and notes are time and place specific, but argue that any token so used would also create a psychological pattern.

This study proposes that the use of notes and coins as physical representations of monetary value creates a visceral and somatic relationship that influences our perceptions of such tokens and that these perceptions are different to those associated with electronic payment modes, particularly debit card. Further, that the perceptions of the payment modes affect our behaviour when used to effect commercial transactions. Accordingly, this study seeks to answer the following questions:

- (1) Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?*
- (2) Is there a link between the cognitive and emotional elements that people associate with payment modes and payment mode choice?*
- (3) Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so, how?*

1.3: Conceptual Base

Accepting the premise that the use of notes and coins creates a psychological pattern and that this pattern affects our perceptions suggests that the Framing Paradigm has relevance for this study. The Framing Paradigm is used across diverse disciplines and applied to many contexts. Its relevance for this study lies in the understanding that a frame is a set of perceptions that an individual relies on to understand and to respond to a situation. It assumes that, people build a series of mental filters through biological and cultural influences and that they use these filters to make sense of the world. These filters are likely to be unconscious and are most likely to enter consciousness when some incongruous element occurs and the frame needs to be altered. In other words, we only become aware of the frames that we always use when something forces us to replace one frame with another. Two aspects of framing that are used by researchers (within behavioural economics) to explain payment mode effects are mental accounting and anchoring. According to Thaler (1999) mental accounting is a process whereby people code, categorize and evaluate economic outcomes. He argues that how people subjectively frame a transaction in their mind will determine the benefits and/or the degree of satisfaction they expect to receive. In relation to payment mode effects, the premise is that physicality of the payment mode serves to influence outcome perceptions.

Identifying the exact origin of anchoring theory is difficult, but it appears to have its roots in the area of psychophysics (see Gescheider 1997; Hunt 1943). Psychophysics is a discipline within psychology concerned with measuring the relationship between physical stimuli and the sensations and perceptions they effect. Within this discipline anchoring describes the process by which responses become associated with (anchored to) some stimulus, in such a way that perception of the stimulus (the anchor) leads by reflex to the anchored response occurring. The process can be unconscious but the understanding is that perceptions related to the stimuli are formed and reinforced by repeated exposure to the stimuli, and is thus analogous to classical conditioning. Connected to psychophysics is the notion of embodied cognition. Embodied Cognition is the notion that our perceptions and behaviour emerge out of the interplay between brain, body and world. Essentially, that our interaction with physical objects shapes our emotional and cognitive responses to that object. For this study the assumption is that the mode of payment – as a tool to facilitate the transference of value, acts as an anchor and that our interaction with the ‘tool’ influences our perceptions and thus in turn affects our behaviour.

1.4: Study Rationale

Electronic money transfer systems (EMTS) enable cashless payment modes and their adoption has led to predictions of a ‘cashless’ society (q.v. Humphrey and Berger, 1990; Humphrey, Pulley and Vessala, 1996; Olney, 1999; Klee, 2004; Garcia-Swartz, Daniel, Hahn and Layne-Farrar, 2007). Borzekowski, Kiser and Ahmed (2006) report that cheque usage has significantly declined (globally) since the mid-1990s; that debit card transactions grew at a rate of 20% (in the US) between 1996 and 2005 and that ATM withdrawals and credit card use flattened over that period. This suggests more people are using their debit cards to effect transactions. Electronic payment mechanisms and especially, mobile payments are gaining consumer acceptance in many economies due to infrastructure support (Herzberg, 2003). Smart payment systems are in operation. For instance, in Hong Kong, a contactless and rechargeable smart card (e.g. the Octopus Card) allows consumers to pay their bus and train fares, buy snacks at vending machines and cafes, pay parking fees and also pay for access to sporting facilities (Yoon, 2001).

For more than a decade, there have been several attempts to integrate ‘smart card technology’ into ‘mobile devices’ to enable mobile payments for business to consumer (B2C) payment transaction processing. In the era of third generation (3G) mobile network, mobile payment is imminent. Many European and Asian countries, including Korea, Singapore, and Japan have adopted this technology (Pousttchi, Sciessler, and Wiedemann, 2009). It is emerging in North America. In Japan, it is possible to pay for a vending machine snack by simply dialing a number on one’s mobile phone and having the amount charged to one’s phone bill. In recent times, the mobile phone is increasingly used to purchase digital content (e.g. ringtones, music, apps, or games), tickets, parking fees and transport fares in many economically developed nations just by flashing the mobile phone in front of the scanner at ‘manned’ or ‘unmanned payment centres.

Although a ‘cashless’ society has a number of advantages, social commentators and environmental activists have expressed concerns that it would increase overall consumption, increase personal debt levels, reduce savings and that the resultant ‘over-consumption’ will have an adverse impact on the society and environment (Nocera, 1994; Libow, 1955; Tilford, 2000; Zvestoski, 2002; and MacDonald Oates, Young and Hwang, 2006). Whether over-consumption can be entirely attributable to a cashless society is uncertain. A common lay explanation for over-consumption is that people get into financial difficulties through treating as necessities, goods whose only function is social display. Walker, Lea and Webley (1992) found that people with serious debt problems regarded certain kinds of expenditures on children (for example fashion goods and substantial Christmas gifts) as necessities, and would run into debt in order to maintain them, even though gifts are inherently luxurious (Gilliz and Belk, 1996) , “One specific claim is that some consumers have self-control problems; therefore they spend more regardless of mode of payment, save less and embark on a consumption path that is unsustainable to self and as a whole to society (Garcia-Swartz, Daniel, Hahn and Layne-Farrar, 2007; O’Guinn and Faber, 1989). Though this may be the case, the positive relationship between access to credit and consumption levels is well documented (Durkin and Staten, 2002; Manning, 2000) Therefore it may be that the increased spend per transaction, observed in the credit card based studies, may be due to the availability of credit and not just to the ‘cashless’ factor. This does not negate a possible decoupling effect, but the credit factor in the transaction payment should be isolated for this to ascertain.

1.5: Study Locus and Context

The availability of Eftpos (Electronic Funds Transfer at Point of Sale) is mainly concentrated in Europe, and the OECD countries. A recent report by Global Industry Analysts (2007) predicts increased growth in India and Asia, specifically China. Though such payment options are available, their actual usage across countries varies. Western European countries use debit cards more than Americans however Borzekowski, Kiser and Ahmed, (2006) report an increased use of debit cards in lieu of credit cards. Variation in use can be attributed to structural and cultural factors. For example, in India because merchants are charged for each transaction Eftpos transaction are low and Indians prefer to withdraw from an ATM and then pay cash for purchases (Sumanjeet, 2009). Cultural factors such as a preference for cash in China and Japan also influences Eftpos acceptance (Singh, 2004).

This study is located in New Zealand. New Zealand, along with the Netherlands, leads the world in the use of Eftpos. A report by the Westpac bank (2007) estimated that there is more than one Eftpos terminal for every 50 people in New Zealand and points out that this per capita usage is the highest globally. Since this indicates familiarity with cash and card (debit and credit) use, this makes New Zealand an ideal research context. Given that the European Union and government of numerous nation states are pushing for increased use of EMTS and the Global Industry Analysts report predicts a 15% growth in Asia and 12% in Europe the findings of this study may have global relevance.

How New Zealanders use their credit card also needs to be considered. Some use their credit cards as sophisticated money management tools. In New Zealand most credit cards offer a fifty-five day free interest period and so use of the card allows a savings account to accrue interest; this use is only beneficial if the debt is paid within the set period. This interest free period only applies to purchase transactions; withdrawals of cash incur immediate interest charges. However used this way, the credit card can function as a quasi debit card. As the intent is to try and isolate the credit factor, even though credit cards can operate as a quasi

debit card, this study concentrates on how personal savings (owned money or liquid money) is spent. So the focus is on comparing cash and debit card use.

There is evidence that the type of purchase characteristics affects the payment mode choice-with infrequently purchased and high value correlating with use of debit (or credit) cards (Boeschoten, 1992; Bounie and Francois, 2009; Sing, 2004). So an important consideration is the purchase context and the recognition that findings may only be relevant to this context. For this study the purchase of household provisions via a single supermarket transaction was selected because a) the total expenditure can be substantial but the individual items are usually numerous and low cost and b) it is a routine purchase where there is variability in the use of payment mode.

1.6: Research Design

This study is a multi-phase, multi-method field based naturalistic enquiry. The study centres on two tasks. One is to ascertain perceptions of cash and debit card payment modes and to examine the relationship between payment mode perceptions and payment mode choice selection. The other is to examine the relationship between payment modes and actual purchase behaviour. To manage these tasks, the study will be conducted in three phases. The first phase adopts a phenomenological approach to data collection and sits within the subjective-interpretive perspective. Data will be collected via focus group discussion and projective tests. The second phase is the development and testing of an instrument designed to capture perceptions of cash and debit card payment modes. The third phase requires the identification and recording of: the amount spent and the characteristics of products purchased; participants preferred payment modes; participant perceptions of payment modes. Essentially these are data that can be quantified and statistically analysed. Phase three participants will be randomly allocated to one of three test conditions: to pay for their transaction by cash; to pay with a debit card and to use their normal payment mode (control group). Data for this phase will comprise purchase receipts for a one week household supermarket shop and participants response to a payment mode perception questionnaire. The questionnaire will be developed from the data obtained in phase one and will be used to

compare participants normal or preferred payment with their perceptions of current payment modes available.

1.6.1: Sampling Procedure

Participants for phase one and three will be recruited via an invitation through community groups. Purposeful sampling is adopted for both phases; specifically non-probability criterion-based purposeful sampling (Hair, Bush, & Ortinau, 2009; Patton, 2002). Purposeful sampling allows the researcher to intentionally select participants who have experience with the central phenomenon or the key concept being explored. Where there is the need to control for factors that could influence outcome a ‘maximal variation sampling’ strategy is recommended (Creswell, Clark, Gutmann and Hanson, 2003).

Various studies report that some demographics factors link to payment mode choice. There is fairly consistent evidence that age, income and education influence payment mode choices. High income and education level have a positive relationship both debit and credit card ownership however younger people and females have higher debit card ownership (Pahl, 1999; Singh and Ryan, 1999; Borzekowski, Kiser and Ahmed, 2006; Carpenter and Moore, 2008; Klee, 2004; Lee and Kwon, 2002). In addition, according a Nielsen Report (2011), two thirds of supermarket shoppers in New Zealand are women, therefore the intent is to recruit participants who represent the ethnic composition of New Zealand, who have tertiary/non-tertiary qualifications and who are:

- Females aged 24-45
- Who live in a household comprising a partner and one child under the age of five and have similar disposable incomes
- Who live in suburbs whose residents have similar demographic characteristics

1.6.2: Analytic Procedures

The study acquires two different types of data; phase one requires qualitative data and phases two and three empirical data. Data from the stage one focus groups, once transcribed, will be text analysed using Nvivo. The analysis process follows the “constant comparative technique”. The PMP (Payment Mode Perceptions) questionnaire validation will be subjected

to an exploratory factor analysis EFA (oblique rotation) then to a confirmatory factor analysis using AMOS. Stage two data analysis in addition to descriptive statistics and validity tests will employ One-Way analysis of variance (ANOVA), and t-tests.

1.7: Benefits

Since the 1980s the number of payment options available to consumers have increased, however the effects of payment mode choice on consumer purchase behaviour is not well understood. So, the main academic advantage of the study is that it will add knowledge to this under-researched area in consumer research. By removing the credit (pay later) facility at the point of purchase, the effects of the electronic payment mode can be more accurately ascertained. By identifying the cognitive and emotional associations that consumers have with payment modes the study will add to our understanding of the nature of our visceral and somatic relationship with payment modes and enable a clearer picture of how payment modes affect purchase behaviour.

The findings may also direct the actions of community, environment groups, government and business decisions. For example, if the use of electronic payment systems irrespective of the debit-credit factor affects judgement as to how much is spent or what is bought and/or affects money management, this has implications for lifestyles and budgeting/saving. So, awareness and educational programs designed to alert and advise consumers could be useful. Business decision makers may see a benefit in the first instance and initiate more specific investigation into product category/form and pricing effects. If no differences are found, then concerns of social commentators and environmental activists will be allayed.

1.8: Thesis Structure

This chapter has presented background information surrounding payment mode use and purchase behaviour. It also explains the study rationale and what theoretical mechanisms underlie its premise. It has also discussed the research problem and the research design being used as well as contributions of the research.

Chapter 2 provides a critical review of prior research, highlighting areas where research is lacking or has been poorly conducted. It briefly reviews the literature pertaining to socio-psychological aspects of money and critically reviews extant literature in the area of mode of payment effects. It discusses the explanatory theories relevant to the effect of payment mode on purchase behaviour and concludes with the issues and gaps that comprise the foundation of this research.

Chapter 3 offers the conceptual development of propositions examined in this study which addresses the limitations of previous studies outlined in Chapter 2. It argues for the need to ascertain the cognitive and emotional associations that people have with cash and how these associations impact on payment mode choice and behaviour. The chapter identifies pertinent conditions as well as developing and justifying propositions in the context of the research questions.

Chapter 4 provides the methodology to examine the propositions developed in Chapter 3 and the logic behind decisions in this research that allows for the exploration of the research proposition. It discusses philosophical assumptions, the rationale for the choice of mixed method research design, justification of sample base, and data gathering techniques. The Chapter discusses the data preparation procedures and the range of techniques used in data analysis.

Chapter 5 presents and discusses the result of qualitative data analysis using Nvivo. It discusses analysis techniques, identifies and explains the codes and categories, addresses Proposition One and generates items for PPM Scale.

Chapter 6 describes the development and structural validation of the psychometric measure. That is, item generation and purifications via EFA and CFA procedures are discussed and validation of scale items determined.

Chapter 7 presents and discusses the detailed analyses of the quantitative data collected at the second stage and the statistical results of the study. It discusses the techniques used in data preparation, cleansing and normality test and presents preliminary analysis. Finally, examinations of the proposition developed in Chapter Three are discussed. Some key results from the analyses are summarised in the last section.

Chapter 8 Conclusion and Future Research

Chapter Two

Literature Review

2.1: Introduction

This study has two goals. One is to identify the cognitive and emotional associations people have with payment modes and to ascertain if these link to payment mode choice. The other is to determine the nature of the relationship between payment mode use and purchase behaviour. Central to the study is the thesis that the long standing use of notes and coins as tokens denoting monetary value has resulted in a complex visceral and somatic relationship with such tokens and that this relationship affects our perceptions. Furthermore, this thesis claims that our perceptions of the payment mode used, influences our purchase behaviour. To understand the antecedents of this relationship, one needs to be familiar with the literature pertaining to money as an economic and psycho-social phenomenon.

According to Snelders, Lea, Webley and Hussein (1992) money is a typical polymorphous concept. It has relevance to many aspects of human activities and so discussion and research occurs in numerous disciplines and across numerous perspectives. For this study, the focus is on examining how individuals perceive and respond to the tangibility of a payment mode in their day to day purchases. Of particular relevance therefore is the literature pertaining to money as a psycho-physical phenomenon. However, as the philosophical (spiritual/moral) and functional (economic) aspects of money probably influence psycho-physical aspects an overview of the literature pertaining to the philosophical and functional aspects of money is presented (Appendix 1. Pg.1-8.)

This chapter begins by presenting a brief historical overview of the emergence of money and the mechanisms for facilitating purchases, followed by a review of the extant research in the area of mode of payment effects. The final section identifies pertinent issues and gaps that are the foundation of the research questions this study seeks to address.

2.2: The Emergence of the Money Concept

The use of token based objects (commodities) as representations of value in commercial exchanges has been a facet of societies for millennia. Underlying the use of tokens is the notion that they are a measure of account, and a means of storing and transporting abstract value (Keynes, 1930; Grierson, 1977; Hicks, 1989; Hoover, 1996). According to Weber (1920) the means of storing and transporting this abstract value consists in the social organisation of the monetary system. It is only by social agreement that a ‘token’ is able to embody the value agreed and by doing so removes the need to anchor the value of the token to the time and space of any actual transaction. The form of the token also varies across time and space. Examples include gold, silver, copper, salt, peppercorns, large stones, decorated belts, shells, alcohol, cigarettes, cannabis, candy, barley, etc. The use of a transferable ‘token’ originates in the agrarian economies of the Mesopotamian and Egyptian empires (c.3000 to 500 BC). Clay tokens were used to represent items of agricultural surpluses and units of work in terms of time or production. The first true (metal) coins date from c. 640 BC in the near Eastern Kingdom of Lydia with gold and silver accorded the highest value (Davies, 1996: 63).

The commodity theory of money, sees money as a ‘good’ linked to a precious metal (or alternate physical objects) or its convertible paper symbol i.e., “*Money was essentially material and tangible; it could be stored and passed from hand to hand - it circulated*” (Ingham, 2004). As Marx in 1844 contended “Money, inasmuch as it possesses the property of being able to buy everything and appropriate all objects, is the object most worth possessing” (p.375). Though there is this notion that money is an object, it is essentially incorporeal - the tokens are objects that are only rendered valuable by social agreement. However when researchers talk about ‘money’ in terms of utility and emotional and/or cultural associations it is often not clear whether it is the concept of money or the representations of money, or both that is the focus.

2.3: Economic Exchanges and Modes of Payment

Though trade in the domestic market was facilitated by the use of coin based tokens, in the context of business (commercial) exchanges, the use of bills of exchange / certificates payable to bearer has a long history. While it is difficult to identify the exact time and place when the practice started there is some consensus that it was prevalent in the Middle Ages in Europe and the Middle East as a method of settling accounts in international trade. Because traders would move from place to place to trade wares and did not want to carry gold/bullion, a network of moneychangers issued documents redeemable for the gold/bullion coins. These documents could be cashed at different places within a country, in a different country or in the future at the same location. Apart from establishing a method for settling accounts without the actual transfer of coins at the time of purchase these merchant banks only dealt with coins of full weight (non-debased) and quality and so the value of the coin token was maintained. The document(s) was labelled 'bank money'. By the 18th Century such banks were prevalent in Europe with Amsterdam, London and Hamburg the main centres. Payments by European banks made in "bank money" were preferable to payments made in circulated coins owing to the established value of the former. Such payments or transfers were made by means of orders required to be presented by the payee in person, or his authorized agent, but the payee did not receive the credit for the transfer until the following day. Gradually, laws were enacted that enabled transfers across banks to be of a standard value, thereby giving stability and uniformity to exchanges and encouraging foreign trade. Eventually, for efficiency the practice was formalised and formed the basis of the modern day banking system.

Essentially, the emergence of 'bank money' acted as a catalyst in the evolution of the commodity money system into a system of representative (fiat) money. This occurred because banks would issue a paper receipt to their depositors, indicating that the receipt was redeemable for whatever precious goods were being stored (usually gold or silver money). In this system, paper currency and non-precious coinage had very little intrinsic value, but achieved significant market value by a promise to redeem it for a given weight of precious metal, such as silver. For most of the 19th and 20th Centuries, many currencies were based on representative money through use of the gold standard. In the case of paper currency and coins trust was extended from the object/commodity to the social organization that held the

commodity (bullion) and issued the currency. Representative money made possible the practice of fractional reserve banking, in which bankers would print and mint currency in excess of the amount of actual precious metal on deposit. The shift to representative money required a psychological willingness on the part of the community to accept it as a symbol of the metal on deposit and a social willingness on the part of the collective to evolve organizations and systems of account that could gain and hold the public trust. For this system to function, consensus (within the community) that the paper money and coins equate to the agreed value of such metals is required. Though paper money and coins are no longer linked to gold there is still consensus that they are a tangible representation of value (Bordo, 1981).

In the domestic market, day to day transactions were primarily via coins (and by the 19th Century, paper notes); the value of which, in modern societies, is set by government treasury officials. By the 20th Century the use of cheques in the domestic market became widespread. The use of cheques allowed a time distance between the purchase and delivery of payment and removed the experience of a tangible exchange of paper notes and coins. When banks made credit available to their customers in the form of a bank credit card, like cheques these payment forms involved manual processing, delayed debit and the use of borrowed money. The introduction of Internet-based electronic money transfer systems (EMTS) reduced the amount of manual processing and increased the immediacy of transfers. Though the use of cards, linked to some form of credit facility, dominates domestic (consumer) markets, there is an increasing acceptance and use of debit/smart cards.

2.4: Electronic Money Transfer System (EMTS)

A cashless payment system is dependent on specific instructions governing the transfer of funds from one account to another. EMTS can utilise web based technology, card based information or radio frequency identification (RFID) devices, (usually attached to cellular phones) to direct instructions. Card based systems allow access to accumulated and/or borrowed funds and take three forms - debit, smart and credit cards:

- **Credit Card** – From a cardholder’s perspective, a credit card account represents an established credit line against which payments are deferred through creation of a loan from the sponsoring financial institution. There are three types of credit cards: bank card, travel and entertainment cards and proprietary cards. A bankcard is issued by a bank based on the credit rating of the applicant (e.g. Visa and MasterCard). Travel and entertainment cards are issued by private companies and may not offer instalment payment programs. Examples of travel and entertainment cards are American Express and Diners Club. Proprietary credit cards are issued by a private entity and are limited in negotiability. For example, a chain store (e.g. Sears) or hospitality company (e.g. Holiday Inn) may issue its own credit cards and therefore also serve as its billing and collection agency. To the vending operator a credit card purchase represents a deferred payment process that involves processing and handling fees.
- **Debit Card** – A debit card purchase thereby initiates a transaction in which the value of the transaction is subtracted from the card holder’s account balance and transferred to the retailer.
- **Smart Card** – Normally requires the transfer of a specific amount of money onto the card. Such cards can be for specific purchases - e.g., travel or phone use, or simply for day to day purchases - normally such cards are not linked to savings accounts but can only access the amount stored.
- **Wireless Mobile Payment** – transaction processing in which the payer uses mobile communication techniques in conjunction with mobile devices for initiation, authorization and confirmation of an exchange of financial value in return for goods and services.

Debit and credit cards share similar characteristics in terms of accessing a potentially large amount of ‘virtual’ money with a high degree of security (Mann, 2002). Both types of cards require dial-up/broadband network for point of purchase transactions to occur. For debit purchase, money is directly transferred to the merchant bank and money is deducted from customer’s accumulated funds. A credit card is a revolving credit instrument that does not need to be paid in full; no late fee is charged so long as the minimum payment is made at specified intervals. The balance is carried forward as an interest charging loan. On the other hand the ‘Smart Card’ application is based on charge card technology where one has to load or charge money on to the card to use as a fuel card, SIMs for mobile phones, public transport charge card or as a public phone card. Cryptographic protocols protect the exchange of money between the smart card and the accepting machine. No connection to the issuing bank is necessary, so the holder of the card can use it regardless of whether or not he is the owner.

2.5: Payment Mode and Purchase Behaviour

The availability of credit and store cards predates the introduction of electronic payment systems. Credit cards were first issued in the US by hotels at the beginning of the 20th Century. By 1914, large department stores and gas station chains were the first to issue store credit cards. It was not until the 1950s that third party cards began, first as travel entertainment cards and then as bank cards (Russell, 1975). During the 1960s Visa and the MasterCard largely eliminated competition and established the bank credit card industry. In consumer markets, the introduction and use of credit cards in the 1970s to facilitate exchanges initiated social comment and research. There was a spurt of interest in understanding by whom and how these cards were used but interest waned (Schreft, 2006). The advent of automated teller machines (ATMs), the point of sale electronic payment systems and the introduction of debit and smart cards rekindled interest in payment mode research.

2.5.1: Credit Card Research

The earliest work in the area of credit card usage is that of Mathews and Slocum in 1969 and 1970 and Plummer in 1971. These studies examined credit card use across socio-economic groups. The studies show that credit card users were more likely to be in the upper socioeconomic class and to use their credit cards to buy luxury goods; lower socioeconomic groups use their credit card to buy durables and necessities and that they use them to manage debt, whereas upper socio-economic groups use credit cards for convenience. The Plummer study also reports that credit card users live in urban-suburban areas and have many interests outside the home with studies by Goldstrucker and Hirschman (1977), Hirschman, Alpert and Srivastava (1979) and Martell and Fitts (1981), reporting similar findings. In the 1990s, some researchers examined the relationship between gender and credit card use. Choe, Yoon and Johnson (1991) report that in the context of single parent households, males were more likely to use credit cards, but that household income was also a factor; higher earning females showed increased use of credit cards. Pahl (1999) reports that males in the UK have more, and use more credit cards than females. She also reports that where females have independent income, the difference is not significant. Later studies

supply evidence that among college students in the US ownership and use are not gender dependent (see Carpenter and Moore, 2008). There does however appear to be consistent evidence that income and education influence credit card ownership and use (Klee 2004; Lee and Kwon 2002).

2.5.1.1: Credit Cards and Purchase Behaviour

Credit card logo effects

Research efforts went beyond identifying who uses credit cards to look at how the possession of these cards influences purchasing behaviour (Feinberg, 1986; Hirschman, 1979; Soman, 2001, 2003; Prelec and Semster, 2001). Hirschman (1979) conducted a survey of consumer shopping in different branches of a department store chain and found that using a bank-issued or store-issued credit card was positively related to higher expenditures. Feinberg (1986) examined the size of tips left by credit card and cash paying customers at a restaurant and found that on average credit card customers left larger tips. He extended this result to an experimental setting by having subjects examine a mock catalogue featuring pictures of various unbranded consumer products (dress, tent, man's sweater, lamp, typewriter and chess). Half the subjects viewed the book in the presence of a credit card stimulus and the other half viewed the book in the absence of any such stimuli. When asked to assess the amount of money they would be willing to spend, respondents in credit card condition boosted their hypothetical willingness to pay by 50-200% relative to the estimates of a control group. Feinberg (1986) offered two theoretical explanations to account for his findings: classical conditioning and a weapons effect. He explained that the credit card logo is associated with spending and so influences spending. The second explanation is somewhat curious as he deems the credit card logo as a stimulus that encourages aggressive (perhaps risk type behaviour). Shimp and Moody (2000) replicated the Feinberg 1986 study but found that a credit card logo did not affect spending behaviour.

Other attempts to replicate Feinberg's (1986) work also deliver mixed results. His own work in 1990 failed to replicate the findings of his earlier study and the Hunt, Florsheim, Chatterjee, and Kernan (1990) study that tested for materialism effects found no effect of the credit card symbol on price evaluations, irrespective of materialism levels. However McCall

and Belmont (1996) found that restaurant diners gave higher tips on tip trays containing credit card symbols when compared to diners who received blank tip trays. McCall, Trombetta, and Gipe (2004) found that credit card symbols had a similar effect on estimated tip sizes in a laboratory setting. A New Zealand study by Lie, Hunt, Peters, Velin and Harper (2010) found that negative associations with credit cards limit the use of such cards and limit spending when used. Their study showed that participants were less likely to spend in the presence of credit card logos. So the effects of the credit card logo are not clear. This may be due to the research context and design or there may be cultural factors at play.

Payment mode effects- credit cards and cash

Studies since 2000 are primarily laboratory experiments. Prelec and Simester (2001) compared behaviour across two payment modes. In their first study they auctioned tickets (via a sealed-bid system) for a sporting event and allowed the use of cash or credit card payment modes. The average price paid by the group who were expecting to pay by credit card was significantly higher than the average price paid by the group who were expecting to pay cash. In the second study they randomly assigned participants to a credit or cash payment mode and assessed their willingness to pay for a \$175 gift card to a local restaurant. They did not find a difference. They argue that liquidity constraints cannot completely explain these results. However, those participants could choose their payment mode in the first test and not the second may be a factor, and in the second test the students may not have had an interest in nor valued the restaurant voucher.

Soman (2001) examined the effect of past usage of payment mechanisms on future spending behaviour by creating differences in the retrospective evaluation of past payments. He found that consumers who normally use credit cards vs. cheque to pay for transactions in the test situation were more likely to purchase an additional discretionary product. Raghurir and Srivastava (2008) conducted four separate experiments in a single study to examine the relationship between spending behaviour and the mode of payment. The first study replicated the Feinberg (1986) study and found similar results - namely that individuals are willing to spend more when exposed to a credit card logo. The second study examined willingness to spend via cash and credit card by manipulating the amount of the transaction. First they asked participants to estimate the cost of individual items to ascertain if it was considered to be a small payment (cost), and once agreement was reached, their willingness to use cash or their credit card to pay for each item was determined. Then the items were grouped together

(to emulate a total shopping basket). Participants were then asked to estimate the total cost of the basket and if they agreed it was high cost they were then asked about their willingness to use cash or credit card. The card mode was preferred in the high cost situation and cash in the low cost situation.

The third and fourth studies by Raghurir and Srivastava (2008) examined spending behaviour as a function of payment mode only. Study three examined spending behaviour when an equivalent amount of money was given in the form of a gift certificate versus cash. Results showed the total amount spent was higher in the gift certificate condition than in the cash condition across all product categories. To explain this behaviour, the authors argued that the gift certificate is less transparent than cash and is treated like play money; the pain of paying (defined by Zellermyer (1996:1) as *the emotions consumer experience in parting with cash*) is likely to be lower leading to more spending when using gift certificates relative to cash. In study four they examined whether the difference in spending behaviour can be attenuated by altering the difference in transparency level, essentially extending the Soman (2003) study. Participants were given \$1 either in cash or a gift certificate (that could be exchanged for \$1 or to buy a package of Starburst Candy) as a reward for participating. In one condition participants were allowed to choose between \$1 or the gift certificate at the end of the experiment. In another condition they were given the \$1 (or the gift certificate) in an envelope approximately an hour prior to the task. To enhance the salience of parting with money, participants were asked to take out the \$1 bill or the gift certificate from the envelope and place it inside their wallet. When asked if they wished to exchange either for Starburst Candy, participants showed reluctance to part with their dollar. A problem with the study is that the gift was specific – a Starburst Candy. The study would have been better managed had the gift card been more negotiable.

Payment mode effects- panel data

Soman (2003) using transaction data from a US supermarket compared shopping behaviour across cash, cheque and credit card payment modes. Of the 275 receipts 33.5% used cash, 20% used cheques and 46.5% paid via credit card. The absolute amount spent did not differ by much cash 23.8; cheque; \$24.0; credit card \$24.7. He noted that when using cheque and credit card more non-essential items were purchased - cash \$9.0; cheque \$11.7; credit card \$18.7. A study by Mercatanti and Montegrappa (2008) used data from a survey on 'Italian

Households' Spending' run by the Bank of Italy and assessed the impact of debit card use on monthly household purchases during 1998, 2000 and 2002. Data comprised frequency counts and relative weighted frequencies of sampled households using cash and non-cash payment instruments. They concluded that households possessing non-cash payment instruments (at least one debit card or credit card) spent more compared to those who did not. Thomas et al. (2011) conducted a complex set of studies into payment mode influence on unhealthy food purchases and in one study that uses supermarket data they report that expenditure is related to card use and that consumers spend more on unhealthy food items when they pay by credit card ((M=\$67.6) than when using cash (M= \$37.9).

The experimental credit card research does not provide conclusive evidence that credit card use and/or associations impact purchase behaviour. The supermarket panel data appears to do so. But this relationship needs to be examined. The variation may be due to the cost of the transaction. Studies by Klee (2004) in the US and Bounie and Francois (2009) in France also use grocery store data, and show that the payment mode choice is related to total amount of the transactions, with card and cheque use dominating in high cost transactions. Certainly the study by Raghurir and Srivastava (previously described) indicates payment mode choice is directed by the cost of the transaction. So the purchase decisions may not be directed by the card, but the final cost at the checkout may. It may be that the choice of payment is a function of the amount of cash available to the person at the point of payment.

2.5.2: Debit Card Research

Debit cards have two main functions: acting as a transaction medium and accessing liquidity (personal savings). Debit card use has increased substantially in the past decade as has the number of investigations into their adoption and use. An early study by Prendergast (1993) found that debit card use was significantly higher among young people in New Zealand. Borzekowski et al. (2006) report that several studies in the US that use various versions of the Survey of Consumer Finances (SCF) all show that debit card users are younger, well-educated and more likely to be female. Studies in The Netherlands, Belgium and Austria report similar findings (Jonker, 2005; Loix, Pepermans and Van Hove, 2005; Foscht, Maloles 3rd, Swoboda and Chia, 2010). A few studies report that users of debit cards tend to be debt-

averse (see Fusaro, 2006; Zinman, 2004; Lee, Abdul-Rahman, & Kim, 2007).

2.5.2.1: Debit Cards and Purchase Behaviour

Only a handful of studies examine the relationship between debit card use at the point of sale and purchase behaviour. The survey by Jonker (2005) reports that debit cards are more frequently used (compared to other modes) in non-food retail, petrol, supermarket purchases and public transport use; and that fast-food purchases are mostly paid for by cash. Klee (2004) links card use to total spent in a single grocery purchase situation. She notes that purchases of \$150 and above were paid by cheque (39%) credit card (25%), debit card (21%) and 15% by cash. This reflects the US preference for cheque and credit card modes - but debit card use is close to the credit card use. Bounie and Francois (2009) asked participants to diarise their shopping behaviour across six shopping occurrences. The final sample size was substantial - 1447 participants across France submitted their diary records. They report that demographic characteristics had no significant relationship with ownership and use but the type and size of transaction did - with cash preferred for low cost payments and cards (both debit and credit) preferred for high cost payments.

Soman (2003) found that the use of pre-paid cards and cash in the context of dry-cleaning and photocopying services increased the use of both services. However it should be noted that pre-paid cards require the user to load money in the card before they could make any purchase. Loading a card for specific purchases (e.g., laundry, fuel, transportation, or photocopying) rather than general use could produce different associations to that of a debit card. Thaler, (1985; 1999) and Gourville and Soman (1998) suggest that the pseudo-sunk cost effect may come into play. For example if a customer deposited money into an account (such as prepaid cards) that is earmarked for a specific purpose the customer may consider it not fungible and consider it 'spent'.

Thomas, et al. (2011) in a collage of studies examined payment use across a number of conditions. Their research comprises four separate studies:

Study One: One thousand purchase receipts from a scanner panel were grouped based on payment mode (cash, credit and debit card) where cash registered 500 receipts; the credit card was 410 receipts and the debit card only 90. To determine the impulsive factor,

students (n=37) were also asked to rate 20 sample unhealthy products in terms of whether they would be likely to be bought on impulse or not. The results showed that the students thought that most of the unhealthy products would be the subject of an impulsive purchase. Though these students were not represented in the panel data - so there is no way of knowing if the owners of the receipts used in the panel data would concur with either the unhealthy or impulsive labels.

Study Two: This study tests the relationship between impulsive / non-impulsive purchase behaviour. Using this classification system a set of participants (not those who had linked products to impulsive/non-impulsive behaviour) were directed to one of two purchase situations. Both situations displayed the same choice of 10 healthy products and 10 unhealthy products. The only variation was that in one task they were primed to pay with a credit card and in the other only permitted to use cash. Results showed that in terms of healthy products classified as non-impulsive purchases no difference was noted across credit and cash payments. However for impulsive-unhealthy purchases, a difference (but not significant) was noted \$11 by cash and \$16 by credit card.

Study three: examined the degree to which the payment mode affected the attention given to the price of the transaction. Two sets of participants were asked to purchase from a set list of items using either cash or credit card. After the task they were asked how many items they bought and how much they paid for them. No difference was noted across the payment modes - so authors concluded that the pain experienced was not due to the cost of the transaction. However they did note that people showed more regret at the purchase when they purchased unhealthy goods and in the study participants did spend more on unhealthy products when they used a credit card – so the combination of the credit card and the unhealthy purchases combined to create a sense of regret. The authors also note that the cash users reported a higher sense of pain.

Study Four: This study examined how tightwads-spendthrifts perform when using cash and credit card. Participants completed the Rick, Cryder and Lowenstein (2008) Spendthrift-Tightwads scale and were asked to complete a shopping task. Results show that tightwads are more likely to spend more on unhealthy products using credit than when using cash whereas no difference was noted across the spendthrifts.

The findings of the payment mode research seem to be fairly consistent in that the use of such cards in the context of routine (household) shopping transactions is associated with an increase in spending and number of items purchased. Apart from some evidence that card based modes result in an increase in non-essentials and unhealthy food items other purchase patterns are not identified. This may be a function of context and research designs adopted. Most are laboratory based quasi-experiments based on convenience samples, where participants are presented with a set task and usually set items to choose from. Apart from Thomas et al. (2011) use of the spendthrift/tightwad and the Hunt, Florsheim, Chatterjee, and Kernan (1990) link to materialism, participant characteristics are not considered. Though laboratory based quasi-experiments can yield valuable results; their limitations are well known and discussed, as are the guidelines that should be adhered to in order to increase validity. The credit and debit card studies have reliability issues stemming from sampling selection, absence of controls, cause

and effect factors not linked to the same test samples and test reliability issues. Thomas et al. (2011) is an example of some of these issues. For example Thomas et al. (2011) use convenience samples and different population sets for their judgement group (identifying unhealthy products and potential impulse purchase behaviour) and their test groups. They also use mixed instrumentation and non-specification of cause–effect relationships. Participant characteristics (other than spendthrift/tightwad distinctions) are not gathered. Unrealistic scenarios - in Study Two students were told they are participating in a task designed to help a new supermarket store make merchandise decisions and were asked to shop in the online store - but on screen they were only allowed to choose from a set number of products in the healthy and the twenty unhealthy food categories. The use of smiley faces to identify pain is not an inherent issue - although reliability and validity aspects are not reported. Since the smiley face in essence measures happy-sad – it is not a ‘pain’ scale *per se*. Nevertheless the authors are at least trying to capture some emotional response. The problem lies with the item selection and validation of the word response test where respondents were asked to check whether they felt *Irritated, Restricted, Powerless, Annoyed, Controlled, Suffocated, Inhibited* or *‘none of these*. No validity tests are reported, the words are biased toward negative associations and no associated tests between face scale and word scale are reported.

2.6: Payment Mode effects on Purchase Behaviour: Explanatory Theories

Researchers have primarily used four theories to explain why the payment mode affects purchase behaviour: Mental Accounting (prospective & retrospective), Pain of Paying and Transparency. Though these are offered as distinct theories, they are related and may have a common explanatory base.

2.6.1: Mental Accounting and Payment Coupling

The earliest explanation is *mental accounting*, described by Thaler (1980) as a “set of cognitive operations used by individuals and households to organise, evaluate and keep track of financial activities” (p.40). At the transaction level, people are said to tend to “open” an account mentally for each transaction and base their decision on evaluation of the perceived

benefit of consumption and the associated cost. These mental accounts help reduce the cognitive load on the decision makers. Over time people develop mental filters as a short cut to evaluate financial decision making. The assumption is that mental frames/filters influence the experience of paying by card and cash. A card-based payment mode decouples the payment from consumption – it removes the transparency so the sense that something of value has been transferred is dulled. Although similar to Prospect theory (*proposes that people value gains and losses differently and, as such, will base decisions on perceived gains rather than perceived losses*) mental accounting differs in that it can be applied to riskless situations; whereas prospect theory applies to chance or probabilistic settings, mental accounting exists independently of attitudes concerning risk (Keeney and Raiffa, 1976). Mental accounting theory is used in marketing literature to propose two related but conceptually different theories of “prospective accounting” and “retrospective accounting” that explain how payment mode influences purchase behaviour.

Prelec and Loewenstein (1998) explain that when something is prepaid (and there is a delay between the payment and the consumption of the purchase) the acuteness (intensity) of the payment experience is reduced and this potentially increases the consumers’ evaluations of the net benefits of the transaction. They argue that specifically, thinking about the cost of payment at the time of purchase can undermine the pleasure derived from the items purchased and thinking about the benefits of a purchase can blunt the acuteness of the payment. They argue that this is a form of ‘decoupling’ and it is not dissimilar to that experienced when a credit card is used. This is in essence ‘prospective accounting’. At the time of the transaction payment is in the future. Their main thesis however is that this ‘decoupling’ affects the degree of payment acuteness, or in their understanding, the degree of pain experienced.

Whilst still in the domain of mental accounting, Soman (2001) proposes retrospective theory to explain payment mode influences on spending behaviour. The theory involves mental accounting at the levels of the spending budget rather than at the point of purchase decision. The theory suggests that individuals have an idea of what they spend and whether their current spending is above or below the budget; that is, the role of budgeting on spending decision is driven by retrospection of past expenses. Individuals use their memory of past spending as a reference point to guide their current spending. Past payment reduces purchase

intention when payment mode requires the consumer to write down the amount paid (e.g. cheque) or is highly transparent (e.g. cash) and when the consumer's wealth is depleted immediately rather than with a delay. Credit cards lack transparency, causing underestimation of past spending, and decoupling of payment from consumption.

2.6.2: Pain of Paying

Zellermayer (1996) coined the term 'pain of paying' to refer to the emotion consumers experience in parting with money. He posited that this psychological pain of paying acts as a regulatory or monitoring mechanism by sending an instant signal about the potential ramifications of spending. His notion of pain is that it describes the degree of annoyance experienced with the parting of money. The aim of his study was to ascertain what sorts of purchases afforded the most annoyance when the bill for the purchase is presented for paying and if the degree of pain affected how soon one was prepared to settle the bill and if the payment mode use, ameliorated the pain. Zellermayer conducted four separate but related studies, however for this present study; Zellermayer's fourth study is the most relevant (Zellermayer 1996:61-68). In the fourth study he provided subjects with 50 bill payment situations and asked them to indicate how painful (annoying) and how pleasurable the purchase type/situation felt on an eleven point scale (pain = -5 and pleasure = 5, the mid-point is 0) and then asked subjects to indicate how they would like to pay- cash, cheque, credit card direct debit (bank deduction).

Exhibit 2.1: Zellermayer 1996:66 Payment mode choice based on degree of pain-pleasure associated with the purchase

Pain/Pleasure	Cash	Cheque	Credit Card	Direct Debit	Totals
Pain = -5 Pleasure= 5	%	%	%	%	%
-5 to -3	10.9	61.4	13.6	14.2	100
-2 to 2	18.1	51.5	22.0	8.6	100
3 to 5	21.4	44.8	29.6	4.2	100
Totals	17.2	52.4	21.5	8.9	100

He found that for purchases deemed painful (one presumes unpleasant), the preferred mode of payment was direct debit or cheque (more likely cheque) and that credit cards and cash are

associated with the purchase of pleasurable purchase types. Zellermayer (1996) suggests that “*choosing when to pay an expense is a relatively unique task that requires subjects to actually look inward and reveal their preferences. Choosing how to pay, on the other hand, is highly routine and more likely to be determined by habit than by immediate pain or pleasure considerations. He argues that this is so “because different payment modes are “ubiquitous, subjects may have revealed their memorised or programmed responses by associating each expense with its typical, rather than emotionally-preferred, payment mode; a pain of paying effect, then, ceases to exist”* (Zellermayer, 1996:67).

As such, Zellermayer’s study does not examine the degree of pain associated with the use of cards or cash so his work is not a clear indication that the use of cash inherently causes pain to be experienced. This is interesting, as underpinning much of the assumptions underpinning the transparency explanation is the notion that an electronic payment mode reduces the degree of pain experience.

2.6.3: Transparency

Soman (2003) proposed that the explanation of these findings lies with the notion of ‘Transparency’. He defines payment transparency as “the relative salience of payment, both in terms of physical form and the amount” (p. 175). Cash is the most transparent form of payment in that the purchaser sees exactly what amount of money is being transferred. Card-based modes have low transparency. He argues that high transparency correlates positively with the degree of pain experienced when paying for products (he borrows Zellermayer’s term ‘pain of paying’). He does not examine the degree of pain-pleasure associated with the type of products purchased afford the subjects, and merely assumes that a high degree of transparency, i.e., the use of cash equates positively with the degree of pain experienced. Essentially he reports on the behaviours associated with the use of smart cards versus cash in three contexts - making photocopies, laundromat use and supermarket purchases.

Photocopying: Soman (2003) found that participants using a photocopy card (M = 114.5) made more copies compared to those who used cash to pay for photocopying (M = 77.25).
Laundromat use: Those who used laundromat pre-paid cards separated their laundry loads in whites and colour and used the washing machine for longer periods (Soman 2003). Cash users were more efficient and used the full capacity of the washing machine. He suggests that participants were more willing to separate laundry when the payment

mechanism hid the transparency of cash outflow.

Supermarket purchases: Soman (2003) demonstrated the effect of transparency on consumption by collecting real transaction data from a U.S. supermarket and reports that shoppers who use less transparent payment mechanism (debit, cheque and credit cards) tend to purchase more non-essential products on average than cash users.

Soman may have evidence that the payment mode affects behaviour, but he does not provide evidence that the participants are in effect ‘mentally decoupling’ the payment experience and his supermarket based study has the same issues as the studies previously described.

Though these explanations are offered, apart from the Thomas *et al.*, (2011) study, there is no evidence to support the feasibility of these explanations. If the opacity of the card based systems serves to ‘decouple’ the payment we need to understand ‘what’ is being decoupled. The understanding is that cash is transparent - presumably because one can have an immediate awareness of the amount being transferred, an awareness that is dulled when a card is used. This suggests that the physical aspect of the payment mode is significant; but what aspect?

2.6.4: Research Questions

Although payment mode behaviour research spans five decades, studies are few. However innovations in payment mode, particularly debit card in the past decade have sparked renewed interest. As the content of this chapter demonstrates, there is some evidence of a relationship between payment mode use and purchase behaviour - at least in the context of grocery/supermarket purchases. There is also some, but not conclusive evidence that the debit card influences decisions in purchase situations. The most consistent evidence is the supermarket panel data. However the nature of the data does not allow one to conclude that debit card selected directs the volume, value and type of products purchased. It may be that the final cost of the transaction is the determining factor. So at this point in time, the question-

Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so, how?

remains unanswered. This is one of the questions that this study seeks to answer.

A number of explanations for how payment mode affects purchase behaviour are offered, however they are all linked to one - *transparency*. More specifically, that the lack of transparency has a decoupling effect and this decoupling impairs our mental accounting ability, reduces awareness of the cost and so reduces the 'pain' associated with paying. Whilst transparency may well be a central factor, why it is a central factor is not explained. Underpinning the notion of transparency, is the idea that electronic systems (and cheque based payment - but to a lesser degree) lack transparency because they are not cash. Soman (2003:174) writes "*Consider payment by cash as the benchmark transaction. In paying by cash, the payment is very salient in both physical form (i.e., it is easy to see that money is being spent) and in amount (i.e., since cash has to be counted and given, the amount is relatively memorable*". The implication is that how we relate to cash based and card based tokens is different and this difference affects our perceptions and thus judgements. This means that we need to consider the physicality of the tokens as an influencing factor.

That the physicality of money influences our perceptions and judgment is evident in the 'Coin' studies of the 1940s and 50s'. These are studies that investigate value and perceptions and are bedded in the accentuation hypothesis (in relation to coins this theory suggests that the stated value of a coin is related to the size). For example if a child is told to select a coin that is worth 10c and one that is worth \$1 and the value is not noted on the test coins, the child will identify the larger coin as having a \$1 value (Bruner and Goodman, 1947). In their comprehensive review of these studies, Saugstad and Schioldborg (1966) conclude that the studies provide evidence that children and adults tend to view valued objects as larger, with children viewing large objects as more valuable than small objects. Similar work by Lea (1981) found that pre-decimal British coins were remembered as larger than the identical coins under their decimal form. Physicality effects are also evident in the *denomination effect* research. This research shows that behaviour related to the spending of a single large denomination compared to small (e.g., \$5 to \$100 bills) is different. One reason is that people like to conserve their money in large notes so as to curb spending as there is a reluctance to spend large denomination bills (Mishra, Mishra and Nayakankuppam, 2006; Raghubir and Srivastava, 2009). Apart from the value-size factor in perception research, a study by Burgoyne, Routh and Ellis (1999) found that people develop emotional links to their national currency. Their study examined attitudes towards transition from a national currency to the

Euro across European countries and they conclude that opposition to the common Euro currency does not come from the perceived economic personal benefits, but originates from emotional feelings towards national currency.

An aspect that is connected to the physicality factor is the assumption that paying via cash is associated with experiencing pain (Prelec and Lowenstein, 1998; Soman, 2003; Thomas et al., 2011). However the basis for this assumption is weak as only Thomas et al. (2011), examine the degree of pain experienced in relation to the payment mode used; the others only assume the cash- pain relationship. Zellermayer examines the degree of pain-pleasure experienced with the purchase type and the association with payment mode selection and he found that pleasurable purchases are just as likely to be paid for by cash or credit card. Also, although Zellermayer argues for the term ‘pain’, his understanding and application of the word is confusing. For example, in his thesis abstract, he defines ‘pain of paying’ as ‘the notion that a consumer who pays for a product or service experiences emotions associated with the act of paying’, what he later acknowledges is that both pain and pleasure can be experienced. Thomas et al 2011 did test for response to happy - sad faces, but their scale has validity issues (see Section 2.5.2.1).

If the physicality of the payment mode is a factor, then we need to understand the nature of the physicality; we need to identify the cognitive and emotional factors that the physicality generates and we need to determine how they relate to payment mode choice. To address these gaps in our knowledge this study addresses the following questions:

Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode? Is there a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?

This emphasis on the physicality of the payment mode indicates that a familiarity with the embodied cognition literature is useful. Embodied cognition theory emphasizes the formative role the environment plays in the development of cognitive processes. Underpinning the theory is the notion that our cognitions and emotions are shaped by the body’s interaction with the world. In the context of this study, the premise is, that our historical and cultural use of the tokens used to represent money value, shaped and continue to shape our cognitions and emotions, determining our perceptions and influencing our judgement.

2.6.5: Summary

As this review of the payment mode literature shows, research is scarce and our knowledge minimal. The introduction of the bank credit card in the 1970s ignited interest and a number of studies ensued. Interest waned in the 1980s and 1990s but has been rekindled by the rapid acceptance and use of electronic payment modes. The majority of the early credit-card studies concentrate on identifying the characteristics of users; a handful examine the relationship between payment mode usage and point of purchase decisions. Recent research has tended to include debit-card use. A few of the studies examine user characteristics but the majority use panel data to compare payment mode use with purchase outcomes. The test based research is such that no definitive conclusions can be made, however the panel based studies show that volume and value of purchases vary across modes, with the cash mode associated with the lowest value (and volume) transactions. Although the panel (primarily supermarket purchase data) shows that purchases vary across the payment modes it cannot be assumed that the payment modes are driving the behaviour - it may well be a function of the transaction cost.

Much of the test based research is premised on the understanding that the electronic payment modes lack transparency and so the intensity of the emotions experienced at the parting with something of value is reduced, as is the ability to make accurate assessment of the cost-benefit relationship. Researchers consider cash to be transparent as there is a clear representation of the 'amount' being transferred but whether the test subjects also associate the lack of transparency with their behaviour is not established. Underpinning the transparency assumptions is the idea that the physical characteristics of the payment mode affect judgements. That this assumption has merit lies with the principles that underpin embodied cognition, the main principle being that our cognitions and emotions are shaped by the body's interaction with the world. So knowing what characteristics consumers identify with payment modes, what cognitions and emotions link to these characteristics, and if and how they relate these characteristics to their payment choices, is a useful undertaking.

Chapter Three

Conceptual Positioning and Proposition Formation

3.1: Introduction

This Chapter identifies pertinent theories that underpin and direct the formation and justification of the propositions. Three research questions emerged from the literature review:

Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?

Is there a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?

Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so, how?

To direct the research, the study opts for the use of propositions. Though the terms proposition and hypothesis both refer to the formulation of a possible answer to a specific scientific question the main difference between the two is that a proposition is a broad statement drawn from a theory, whereas a hypothesis takes this one step further and formulates a more specific statement that is empirically testable. That is, proposition(s) state a relationship between two concepts, and a hypothesis operationalizes this relationship and puts it in an empirically testable form (Whetten, 1989: 491).

The use of propositions to direct this research task is preferred primarily because of the exploratory nature of the research. The established knowledge in the area of payment mode effects is disparate and our understanding of the relationship between the physicality of the payment mode and purchase behaviour is scant, so testing predictive relationships at this stage seem premature. In this study the intent is to identify associations and make inferences.

Questions one and two are based on the assumption that the physical characteristics of payment mode influence our cognitive and emotional elements, in essence these elements act as a point of reference and thus influence our behaviour. This Chapter presents the rationale for electing to position the study within the Framing paradigm and argues for the relevance of the frame of reference/ (anchoring) and cognitive embodiment concepts. Question Three is directed by the payment mode literature and the propositions formed reflect current research.

3.2: Background

The central premise of this study is that people in societies that use tokens as mediums of exchange, over time, a complex psychological relationship with such tokens and that the agreed value of the token becomes imbued in the actual token- i.e. that representative value is physically and viscerally experienced. Further that nature of this psychological relationship affects perceptions and thus judgements when paying for transactions; perceptions that vary across the payment modes used.

In modern societies, cash tokens as representations of money have acquired meanings that are time and culture specific. Individual perceptions of such tokens are influenced by such meanings and by the specific psycho-social meanings that impact the individual. Where researchers focus on money perceptions, for the most part the focus is on money as a concept. For example Belk and Wallendorf (1990) identify two categories; *The sacred and The profane*. Many of their examples are associated with the purpose/use of ‘money’ as a value as opposed to the actual token. However that perception of money as a concept influences how such tokens are perceived is evident in their work and the work of others. For example giving rare or commemorative coins as a gift can transport the token to the sacred - to the special. Studies by Webley, Lea and Portalaska (1983) and Burgoyne and Routh (1991) report that the giving of a cheque as a gift, especially to special people on a special ‘gift’ day was deemed unacceptable. Though the actual test stimulus was a cheque, results may be more negative for actual coins and notes - giving a \$50 note as a present- may be deemed mundane, perhaps insulting. Children however, are often given coins for special occurrences - e.g. the tooth fairy or the like. They also learn to ‘save’ coins and notes and to recognize monetary

value in the tokens. Whilst the connotation of unclean is often linked to how money is obtained and spent, because coins and notes are circulated and thus handled the circulation factor adds to this notion of the token as ‘dirty’ objects *per se*. There are of course cultural factors that influence the use of cash. For example it is acceptable to give cash at Chinese weddings - however the gift must be wrapped in a red envelope thus hiding the tokens at the point of giving.

In relation to payment mode use, current research suggests that the physical characteristic of the payment mode influences the perceived transparency of the transaction. As Soman (2003:174) points out, when cash is used it is easy to see *that money is being spent* – since it has to be counted. So when using cash there is immediate and tangible awareness that something of value has been transferred that is not present when electronic cards are used. The assumption is that this tangible awareness is associated with psychological pain (annoyance, grief) that is presumed to result from the loss of money and that the use of an electronic card removes this awareness- Soman labels this the ‘decoupling effect’. He also suggests that this decoupling affects our mental accounting ability- that is, how we weigh-up our expenditures, how much we should spend on specific purchase types and how much we are spending. Cash has to be counted and given and so the amount is easily known and remembered.

3.3: Theoretical Basis and Propositions

This study assumes that money *per se* is a social construction i.e., the type and value of the token is determined and agreed by a society (or groups of people). It is also assumed that individuals may have additional unique set of thoughts and emotions that they associate with the tokens. As such it is necessary to understand how individuals frame their responses to tokens. Framing is used as a paradigm for understanding and investigating behaviour in all of the behavioural science disciplines (Rendahl, 1995). The theory evolved out of Goffman’s (1974) work that drew on the work of Kenneth Boulding (1956). Boulding argued that a person’s self-image and understanding of society and nature helps with interpreting information and instigating action. Goffman associated the idea of frames to his "schemata of interpretation" – a tactic that allows individuals or groups "to locate, perceive, identify,

and label" events and occurrences, thus rendering meaning, organizing experiences, and guiding action (1974: 29). Such frames or schemas are shaped through biological and cultural influences (Fiske and Taylor, 1991). In essence, frames function as points of reference and these points of reference create a cognitive bias that limits behaviour by taking a mental short cut to solve a problem.

Within behavioural economics, two concepts that sit within the framing paradigm have relevance to this study: anchoring and mental accounting. Anchoring is a process by which memory recall, state change or other responses become associated with (anchored to) some stimulus, in such a way that perception of the stimulus (the anchor) leads by reflex to the anchored response occurring. The process through which this is managed is understood as cognitive embodiment – the notion that our physical interaction with the environment shapes how we think and feel. Mental accounting is related to our mode/method of organising, evaluating and tracking our financial activities; the assumption being that our way of doing these is influenced by a pre-set frame of reference (anchors) (Thaler, 1998).

3.3.1: Anchoring, Cognitive Embodiment and Mental Accounting

According to Tversky and Kahneman (1974) in order to facilitate or responses to stimuli we develop a constellation of possible interpretations of and responses to the stimuli. Anchors can come in infinitude of possible forms: verbal phrases, physical touches or sensations, certain sights and sounds, or internally, such as words one says to oneself, or memories and emotional states. Once the anchor is set, there is a bias toward adjusting or interpreting other information to reflect the "anchored" information. Through this cognitive bias, the information learned about a subject can affect future decision-making and information analysis. Given that we learn about money and responses to money tokens from an early age and one presumes, continue to learn, it is understandable that anchoring should be relevant to perceptions of payment modes. It is entirely feasible that people would develop initial and/or key bits of information about the 'objects' used to effect payment and that these would affect any judgments and actions taken when used.

According to Frederick, Kahneman and Mochon, (2010) “Anchoring effects are said to be easy to generate, but hard to explain” (p. 17). In the context of cash tokens the explanatory difficulty may rest partly on the variety of psychological mechanisms potentially involved, including numerical priming. In the case of denomination effects, the denomination value (stimulus) may act as a focal point and trigger preconditioned responses. Studies by Mishra, Mishra and Nayakankuppam (2006) and Raghurir and Srivastava (2009) demonstrate that the likelihood of spending is reduced when an equivalent sum of money (e.g. \$100 note) is presented as a single note or as \$20s as the subjects in the studies had specific cognitions about the large denomination- the key one being a reluctance to spend in that one should save a \$100 whereas five \$20 notes can be spent. They conclude that the physical nature of the tokens serve to reinforce an experienced difference and thus affects our perceptions. By doing so, the implication is that this process resonates with the principles underpinning the notion of embodied cognitions.

In the case of payment modes, the characteristics of the physical entity used would produce unique cognitions and emotions via touch, sight, counting and smell. These would differ within and across the payment mode types. In that the denomination difference in the various cash tokens would produce different interaction effects and effects that are different to those experienced when a debit card is used. Embodied cognition has its roots in the work of William James (1890) but received recent recognition due to the work of Gibson (1979) and Lakoff and Johnson (1999). Underpinning embodied cognition is the notion that cognitive dynamics are deeply rooted in the body’s interaction with the world. Anderson (2003) explains that: *according to Lakoff and Johnson the mind is inherently embodied because its processes must be neutrally instantiated and because our perceptual and motor systems play a foundational role in concept definition and in rational inference* (p.105). Cognitive embodiment has captured the interest of economists (see Bechara and Damasio, 2005; Glimcher, Camerer, Poldrack and Fehr, 2008; Reimann and Bechara, 2009; Oullier and Basso, 2010) and the concept is generating interest amongst consumer researchers (see the Preconference on embodiment, ACR proceedings, 2010). Though not directly used to form propositions, for this study, the relevance of cognitive embodiment lies in the premise that the physical characteristics of the payment mode affects our perceptions; that these perceptions differ across payment modes and this affects our behaviour when effecting transactions.

Thaler (1998) asserts that mental accounting has three components- *a mental cost-benefit analysis of expenditures, the assignment of specific activities to specific accounts and account balancing*. The first component relates to the awareness of cost that is the price paid and associated benefit of purchase. The second component is that people allocate money for specific purposes such as bill payment, necessities and entertainment. As they also have awareness of that they have finite resources, the third component relates to the act of the tallying of these accounts, for example, people have idea of how much they have spent and how much is left in savings. How we approach these tasks is affected by how we frame our responses- responses that are influenced by the type of anchors used.

According to Soman (2003) the quality of our mental accounting, especially the accounting that occurs at point of payment is affected by the degree of transparency – with the cash payment mode being highly transparent. As Soman suggests (2001) cash use assists remembering how much money is being ‘spent’ whereas the use of a card does not. So, using cash as opposed to a debit card may link to different money management decisions. Other mental accounting practices can affect transaction behaviour. If, for example, a specific amount is set aside for bill paying, spending it for something else can magnify the perceptions of the cost (price) of the purchased object. Similarly, having cash in a wallet, given that it has been withdrawn from a savings account, may mean that it is deemed money for spending rather than saving, whereas money in a bank account that is accessed via an electronic payment mode may be deemed as money to be saved and not spent, even though the account is established for every-day expenses.

3.3.2: Proposition Formation

As outlined in Section 3.3.1, the study acknowledges the role that the physical characteristics of the payment mode plays in the formation of cognitions and emotions associated with available payment modes. The questions are premised on the notion that the payment mode (the stimulus) triggers responses that affects perceptions and behaviours during purchase transactions. Tyszka and Prybyszewski (2006) suggest that people tend to use the nominal value of money as an anchor when evaluating the value of goods, and that they neglect the real value of money. The bias occurs due to the inappropriate choice of anchor, or the

inadequate level of adjustment. More specifically, the tangibility of a cash based token creates awareness (conscious/unconscious) that a possession of value is being exchanged whereas the ‘ether’ based card transfer does not and that this awareness tempers choice behaviour at the point of purchase. When an electronic card is used, consumers may not at that specific point be mentally (or emotionally) ‘tuned in’ to the actual amount of money being spent. The handful of studies that examine this relationship between payment mode choices and mental accounting indicate that perceptions of the relationship between the price paid and how the benefits of the product purchased are perceived, varies across payment modes and that how people remember how much they have spent varies across the payment modes (Prelec and Lowenstein 1998; Soman, 2001). Given that only two studies directly examine these assumptions it is worthwhile exploring this notion. So directed by this understanding it is proposed that:

P.1. The cognitive and emotional elements that people associate with cash based payment mode will be different to those associated with a debit card based payment mode.

And, specifically that:

P1_a Perceptions of the price- benefit analysis of expenditures will vary across cash and debit card payment modes.

P1_b People’s perceptions of how they keep a mental tally of expenditures will differ across cash and debit card payment modes.

As discussed in Chapter Two, credit card research suggests that the volume and overall amount spent per purchase transaction increases when a credit card is used to enable payment. An issue, identified in Chapter Two, is that of ‘credit’. When a credit card is used, then borrowed money is being accessed. Though it is recognised that the ‘borrow’ may be only for a short time period, essentially at the time of the transaction the money is borrowed. Also, a credit card gives people at the time of purchase access to resources, beyond their saved capacity (see Manning, 2000; Durkin and Staten, 2002). When people use a debit card to facilitate transactions they are accessing their personal savings. However, both modes lack transparency and the decoupling effect proposed by Prelec and Lowenstein (1998) and Soman (2003) may impact on the intensity of the payment, irrespective of the credit factor.

If this is so then it is the transparency factor and not the credit factor that directs the purchase behaviour.

Though the studies report that the value (the overall amount spent) is greater when credit cards are used, the source of the value is not reported. It is sensible to assume that this is due to more expensive items in the product categories being purchased. In New Zealand, there is a price differential between manufacturers brands and distributors labels so it may be that more manufacturers brands are purchased when an electronic card is used to facilitate exchanges. Also apart from volume and value there is some evidence that the payment mode may impact on the type of products purchased. Thomas et al. (2011), report that the number of what they label 'vice' products increased when a card based payment mode is used. Though the evidence for this is flimsy, it is worthwhile investigating this possibility. Therefore the basic proposition is that:

P.2. Where consumers' access their personal savings to pay for transactions; the mode of payment selected will affect their purchase behaviour.

This proposition is augmented by the following supplementary propositions:

P2_a: The overall mean amount spent in a single transaction will be less via cash than via a debit card payment mode.

P2_b: The overall mean number of products purchased in a single transaction will be less via cash than via a debit card payment mode.

P2_c: The overall mean amount spent on indulgence products purchased in a single transaction will be less via cash than via a debit card payment mode.

P2_d: The overall amount spent on meals and drinks in a single transaction will be comparatively less via cash than via a debit card payment mode.

P2_e: The overall amount spent on non-food items in a single transaction will be less via cash than via a debit card payment mode.

P2_f: Where cash is used the overall amount spent on distributor (house) brands will be more than the amount spent on national brands.

P2_g: Where a debit card is used the overall amount spent on distributor (house) brands will be less than the amount spent on national brands.

Anchoring (assuming the mechanics of cognitive embodiment) provides a rationale for accepting that the physical nature of the payment mode influences our perceptions and thus our behaviour towards the payment mode and how we use it. One aspect that the literature posits and to an extent demonstrates is that the payment mode used, affects our mental accounting faculties. The literature also assumes that the physical attributes affect how we think and feel about parting with money. However other factors remain unknown. So one task of this study is to explore our mental and emotional associations with payment modes- specifically cash and card. In addition however the assumptions of Anchoring would suggest that these associations would direct how people think about the tokens and direct how such tokens are used. So it is proposed that:

P.3. There is link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?

3.6: Summary

This chapter identifies and explains the theories and concepts that direct the propositions. Central to the thesis is the notion that the physical characteristics of the tokens used to represent money in modern societies, influences the cognitions and emotions associated with the token. The underlying premise is that in modern societies, the historic use of cash has evolved associations – associations that derive from a society’s cultural values and norms and the physical nature of the cash that are different to those associated with card or indeed other electronic modes of payment transfers. The Chapter presents the rationale for electing to position the study within the Framing Paradigm arguing that the tokens, as a stimulus evokes responses that are guided by how the individual perceives the token and assumes that the responses are directed by the frames (points of reference used, i.e., the anchors) used in the context of such stimuli. It is further posited that the anchors are formed and reinforced by the process of cognitive embodiment. It is also proposed that these frames affect how we mentally account for our money and how we behave when paying for transactions.

The Chapter contends that the payment modes as stimuli elicit specific responses that are guided by pre-set conditions (anchor points) and that the resultant schemas direct our perceptions and thus responses.

CHAPTER FOUR

Research Design and Methodology

4.1: Chapter Overview

Previous chapters reviewed the literature pertaining to payment mode and purchase decisions. The review conclusions are that the antecedents of the variation in purchase behavior across payment modes are not known. Further, that the explanations currently used to explain the variation have not been scrutinized or substantiated. Accordingly, this study is designed to ameliorate the situation by addressing the following questions:

Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?

Is there a link between these associations and payment mode choice?

Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so, how?

The study has two broad aims: The first is to ascertain perceptions of cash and debit card payment modes and their relationship with payment mode selection. The second is to examine the relationship between payment modes and actual purchase behaviour. To manage these tasks, the study will be conducted in three phases. The first phase sits within the subjective-interpretive perspective, requiring phenomenological based data that will be acquired via focus group discussion and projective tests. The second phase is the development and testing of an instrument designed to capture perceptions of cash and debit card payment modes. The instrument will be developed from the data obtained in phase one and will be used to compare participants' normal or preferred payment with their perceptions of current payment modes available. The third phase requires the identification and recording of the amount spent and the characteristics of products purchased; participants' preferred payment modes and participants' perceptions of payment modes. Essentially these are data that can be quantified and statistically analysed.

In this chapter, the methodology for the research is discussed. The chapter begins by describing the research task, detailing and justifying the research design. It then outlines the sampling process and the specifics of data collection and analysis.

4.2: Research Approach

To address the research questions, the study needs to accomplish a number of tasks. One is concerned with gathering people's subjective experience of two specific money based tokens commonly used to enable payment for purchases: cash and debit cards. Another is to identify, quantify and compare the volume and value of the products purchased across these payment modes. A final task is to develop a self report instrument that captures payment mode perceptions and determine if these perceptions are related to payment mode choice.

The first task requires data that reflect the participants' personal perspective and interpretation, so a phenomenological approach to data collection is adopted. Though the intent is to identify individual perceptions, relativist ontology underpins this task as the assumption is that an individual's experiences and understandings of the world create a unique set of perceptions whilst recognising that some of these perceptions will be shared by others. This understanding directs the collection of individual and group sourced data. The remaining tasks require documentation of actual products purchased and payment mode used and the responses to a self-report questionnaire. As the intent is to compute this information and compare responses, data that can be quantified and statistically analysed is required. Hence, this study adopts a multi-phase, multiple method approach to data collection and analysis.

Multiple methods are useful in a research program when a series of projects are interrelated within a broad topic and designed to solve an overall research problem (Morse 2003: 196). It essentially refers to blending and integrating a range of data and methods involving simple to complex designs allowing "a more complete, holistic, and contextual portrayal of the unit(s) under study" (Jick, 1979, p.603). Although some researchers (e.g., Guba & Lincoln, 1988) argue that internal paradigmatic consistency and logic caution against such mixing, others note that mixed methods provide strengths that offset the weaknesses of studying a research

problem using a qualitative or quantitative approach alone (Johnson and Onwuegbuzie, 2004; Bahl and Milne, 2006; Bryman and Bell, 2007; Creswell and Clark, 2007).

The use of a mixed (multi) method approach or as it is often labelled *method triangulation* can be traced to Campbell and Fiske (1959), Denzin (1978) and Jick (1979). Two important notions underpin the mixed-method approach. One is that the research design should be driven by the philosophical assumptions underlying the purpose of the study and the questions that it seeks to answer (Johnson and Onwuegbuzie, 2004). Patton (2002) asserts that the need to gather the most relevant information is paramount and outweighs concerns about maintaining methodological purity. The main advantages of this approach are an increased confidence in the findings and enhanced interpretation and explanation. Mixed methods employ both inductive and deductive logic (Bahl and Milne, 2006; Creswell and Clark, Gutman and Hanson, 2003; Patton, 2002). That is, the researcher is open to what emerges from previous studies, and also to what may be a new discovery. A study may, for example, reveal certain patterns, an inductive approach; the verification of these patterns may involve a deductive approach.

The study adopts Blumer's (1978) view that social behaviour researchers should adopt a more naturalistic mode of enquiry based on qualitative study and inspection. This mode requires the researcher to form a close contact with the field of study whilst ensuring that strict controls are in place to ensure maximum control of confounding factors. The advantage of a field based study is that it produces behavioural data and allows a close relationship between data collection, theory construction and analysis; it is particularly suitable for areas where theory is sparse or highly abstract (Hayes, 2000). Field based studies have high ecological validity as the research and behaviour are less likely to be affected by the research setting, compared to an experiment conducted in a laboratory (Keppel, 1982).

However non- experimental field studies do have reliability and validity issues and, while it is not feasible to create a pristine research context, data quality and analysis accuracy will be managed by the use of multiple observers, coders and member checks in the case of the qualitative data collection and analysis. Scale development and testing will be via a test-retest procedure (Netemeyer, Bearden and Sharma, 2003). Validity issues are examined via EFA and CFA analysis (Gerbing and Anderson, 1988). Although all care is taken to provide

solid data, the issue of generalisability remains and so it is recognised that the findings of this study may only be applicable to the population studied.

4.3: Study Locus and Participants

As explained in Section 1.5 the type of purchase characteristics affects the payment mode choice - so the purchase context needs to be specified. As Section 2.5.1.1 shows, the majority of the studies are in the context of supermarket type purchases so, to enable useful comparisons with extant research, this study also uses the supermarket context.

Homogeneity of participation is deemed necessary for this research in order to limit confounding factors. Given the exploratory nature of the study, discussion would be enriched if the participants had a degree of shared life experiences so participants will be identified via a non-probability, criterion-based, purposeful sampling process (Hair, Lukas, Miller, Bush, and Ortinau, 2009; Patton, 2002). Non-probability sampling is when participant selection is based on the researcher's judgment regarding the characteristics of the population and the needs of the research (Fink, 2003a). The limitation of this approach is that there is no assurance of representativeness within statistical specification of error tolerance as it is based on certain assumptions about variability in key characteristics and relies on the adequacy of drawing up the population listing. Clearly then, regardless of the sample size, that such sampling represents the entire population cannot be known, so it is difficult to generalize the results beyond the specific sample used.

The only demographics that seem to consistently link to payment mode choice, in particular debit card use, are age, education and income (see sections 2.5.1 and 2.5.2). It is feasible however that life phase and ethnicity could also affect money perceptions and ethnicity, age and education details will therefore be identified. Income proved problematic due to ethical concerns raised by the University. Thus, although not a wholly acceptable solution, participants were drawn from postal code areas with household incomes. Although the relationship between gender and payment mode remains uncertain (See Sections 2.5.1 and 2.5.2), since as 73% females as compared to 27% males are the main household shoppers in New Zealand, females are selected as the target population (see Nielsen Reports, 2011).

Females aged 25 to 45, who live in households that consist of two adults and at least one child under the age of five and from demographically similar areas form the target population.

Participants for phases one and two were sourced from a community organisation - The Plunket organisation member database. Plunket is New Zealand's largest provider of support services for families with children under the age of five.¹ To engage support, rather than provide individual incentives (other than the travel costs involved in the focus group sessions) a donation was made to the Organisation. Invitations were placed in the Plunket Newsletter and posters and brochures were placed in selected play-group, health and meeting centres.

4.4: Phase One: Data Collection and Analysis Procedures

Phase One addresses the first question: *Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?*

The type of data required to answer this question should reflect the participant's view of the subject. Epistemologically, the phenomenological approach directs the collection of personal and subjective knowledge so many disciplines are comfortable with the ideas that underpin phenomenological research. That phenomenological approaches are also accepted by the neuro sciences is useful for this study since the study seeks to understand how the experience of the physicality of the payment modes shapes perceptions. According to Gallagher (2009) the neuro sciences recognise that physical brain activity by itself does not provide full explanation of the experience. So while the physicality of the tokens may produce a physical response in mind (and body), the important task is to understand how a person makes sense of

¹ Plunket is a national not-for-profit organisation, community-owned and governed. The organisation provides universal access to services for all children and families regardless of ethnicity, location or ability to pay. The Organisation provides access to baby health centres, play groups and parent education courses.

the experience. To do this requires identifying and interpreting and so requires that both conscious and unconscious thoughts be ascertained, partly by using projective methods.

Focus group sessions were considered by the researcher to be a viable way to collect data. The sessions employed the nominal group technique in which individuals write down their ideas silently and independently prior to a group discussion (Delbecq and VandeVen, 1971; Vendros, 1979). Individual perceptions were gathered via projective tests and responses to scenarios related to shopping experiences. Projective tests allow a subject to interpret (respond) from their own particular frame of reference and allow the collection of unguarded responses in order to reduce socially desirable answers, inhibition, and inability to respond directly. Essentially the subject is presented with a situation, inanimate objects or a third party and asked to express the thoughts that come to mind. “Though the use of ambiguous stimuli is recommended, the nature of the stimuli should offer sufficient direction to evoke some association with the concept of interest” (Churchill, 1991:322-324; Gordon and Langmaid, 1988:95). For this study the stimuli include bank notes of varying denominations, a specifically designed debit card (see appendix. 7 P.23) and shopping related scenarios. The individual components of the sessions comprise a set of tasks, presented in a work-book that the participants completed individually. Once the individual tasks were complete, participants engaged in a group discussion directed by a set of topics presented by the focus group facilitator. Prior to running the study groups, three pilot focus groups were held in order to build and refine the workbooks and to gauge the effectiveness of the topics as discussion points.

4.4.1: Pilot Group Sessions

A pilot study is a small scale preliminary study conducted before the main study in order to check feasibility or to improve the design of the research. A pilot study is usually carried out on members of the relevant population, but not on those who will form part of the final sample. Invites to participate were sent to AUT university faculty staff and PG students who reflected the characteristics of the test population. Seventeen people volunteered and three pilot focus groups were formed.

First Pilot Group Session: Interaction and feed-back from this session resulted in session management protocol adjustment, modifications to the work book content, clarification of task instructions and scenario content. One task required participants to list attributes and traits that they would associate with the bank notes and the card. They found this quite difficult to manage and suggested that a list of attributes would be helpful for them to describe the notes and cards. One of the tasks was to compare \$20 note and \$20 in a debit card, participants thought this was unrealistic as no one would have just \$20 in their debit card and so would not be able to make meaningful associations. So the \$20 stored in a debit card removed before the second pilot study.

Rather than providing a list of traits it was decided to test the use of personality projections based on the personification of objects. Two tests were selected - an animal and a shoe test. The Trent and Smalley (1992) animal test was selected. Participants were presented with the character descriptions of the animals (lion, otter, golden retriever and beaver) and asked to identify which animal they related to the payment modes. The shoe test is a list of shoe types² used to classify footwear. By doing so the intent was to provide participants with a physical anchor to avoid the possibility of their voicing abstruse associations (See Exhibit 4.1).

Second Pilot Group Session: This led to a further refining of the focus group protocols- mainly the task order. The participants were instructed to consider, if each bank note (\$20, \$50 and \$100) and the card was a shoe (or animal) - what it would be. They were then instructed to describe the type of person most likely to wear such a shoe and/or the occasion of use. A similar instruction was given for the animal test- participants, who were asked to consider if the animal was a person - what traits they would have. The shoe test worked well

² The use of shoes as an anchor point is selected rather than the use of animals (or alternative concrete anchors) based on two considerations. One, is the historic role of shoes –see Russell W. Belk (2003), "Shoes and Self", in *Advances in Consumer Research* Volume 30, eds. Punam Anand Keller and Dennis W. Rook, Valdosta, GA : Association for Consumer Research, Pages: 27-33 and the Language of Shoes Project: Verbal and non-verbal reflections of the self (Lancaster University <http://www.ling.lancs.ac.uk/staff/andrew/shoeproject.htm>). Another is the wide acceptance and knowledge of the meanings associated with shoe in the community- see various popular articles on shoes and personality <http://ezinearticles.com/?Shoes-May-Be-a-Personality-Indicator&id=3452752>, <http://girls-hideout.blogspot.com/2009/07/what-is-your-shoe-personality.html>

as participants managed to link the shoe types to the cash and card (see Exhibit 4.1 for the list of shoe types presented to the group). However participants had difficulty linking the animal types to the bank notes and card and the subsequent group discussion showed that this was linked to cultural factors. Participants thought that in addition to the shoe test a list of personality traits would also be helpful. They also suggested that, in addition to being allowed to handle the test items, images should be incorporated into the work book. Participants also pointed out that the \$50 note was not common and that people normally had \$10, \$20 or \$100 notes in their wallets and that it difficult for them to get any clear associations as the three notes were ‘too much’ for them to manage. Also, it was necessary to manage the time factor and so the group thought that removing the \$50 was an optimal solution.

Third Pilot Group Session: A list of personality traits adapted from <http://www.gurusoftware.com/GuruNet/Personal/Factors.htm> as the list presented in this Web site is quite comprehensive and comprises one or two word trait examples. Personality tests such as the Big five were not used as they present personally stated items- such as “*I have a good heart*” and linking such items without rewording ,to a \$20 could prove complex.

The only changes resulting from this session was the rewording of the scenarios - for example in the fit scenario, changing the gift giver from ‘*Mother*’ to a *special person (parent, sibling or best friend)* and the monetary value of the gift from \$100 to \$50. The majority of the group thought that the \$50 would be more realistic across a range of family types. This however was a difficult choice as the work of Webley, Lea and Portalska (1983) and Burgoyne and Routh (1991) note that gifts of money from siblings (unless from the older to the younger) is not acceptable nor is the gift of money across peers. The participants pointed out that they frequently gave their friends a shopping voucher – which the regarded as similar. The wording was changed and participants in the pilot and the formal studies did not seem to have an issue with the description. The participants thought the personality list helpful and were quite conversant with shoes types perhaps influenced by and reflecting the role of shoes in society (see Belk, 2003). This session also helped to refine the task order completion and the timing and form of the support material. This was considered important to avoid priming so part of the session management was to ensure that the work book was not presented as whole.

Exhibit 4.1: Shoe Types (after Kaiser et al. 1987)

Women's Shoe	Descriptions
High-heeled footwear	Shoes with heels 2 inches (5 cm) or higher. They are often commonly worn by women for formal occasions or social outings
Kitten heels	Low high heels from about 1.5 to 2 inches high, set in from the back of the shoe
Sneaker boot	Shoe that looks like an athletic shoe, but is equipped with a heel, making it a kind of novelty dress shoe.
Wedge Sandals	Sandals but have the ankles higher as if wearing a high heels shoe.
Mules	Shoes or slippers with no fitting around the heel (i.e. they are backless)
Slingbacks	Shoes which are secured by a strap behind the heel, rather than over the top of the foot.
Espadrilles	Casual flat or high heeled fashion sandals of a style which usually have a cotton or canvas upper and a flexible sole of rope or rubber
Pumps	Known in the UL as Ballerinas, are shoes with a very low heel and a relatively short vamps, exposing much of the instep.
Men's Shoe	Descriptions
Balmorals/Oxfords	An Oxford shoe is a style of leather shoe with enclosed lacing.
Bluchers/Derbys	The laces are tied to two pieces of leather independently attached to vamps, also known as open lacing.
Monk-straps	A buckle and strap instead of lacing.
Slip-ons	There are no lacings or fastenings. The popular loafers are part of this category.
Unisex	Descriptions
The flip-flop sandal	Sandal with basic design and function
Platform shoes	Shoe with very thick soles and heels
Moccasin	A soft shoe without a heel and usually made of leather.
Saddles shoes	Leather shoes with a contrasting saddle-shaped band over the instep
Slip-on shoes	A casual shoe without laces, often with tassels, buckles.
Boat shoe	Also known as deck shoe: similar to loafer, but more casual. Laces are simple leather with no frills. Typically has soft leather to avoid scratching a boat deck
Boots	Long shoe covering the ankle.
Slippers	For indoor use, commonly worn with pyjamas.
Athletic	Descriptions
Running shoes	Emphasis on cushioning
Track spikes	Lightweight; often with plastic or metal cleats
Cleat	Usually, worn playing rugby, football, & baseball
Golf shoes	Soft spikes made of synthetic plastic that cause less damage to greens.
Bowling shoes	They have hard rubber soles so as not to damage bowling alleys floor
Hiking shoes	Usually have high stiff fronts with many lace eyelets to provide ankle support on uneven terrain
Walking shoes	More flexible sole than running shoes, lighter in weight than hiking boot.
Cycling shoes	Are equipped with metal or plastic cleat to interface with clip-less pedals, as well as a stiff sole to maximise power transfer.

Exhibit 4.2: Workbook Tasks

First Test Set: This set involved presenting participants with bank notes (\$20, and \$100 denominations) and a debit card. The debit card was specifically designed so that it could not be confused with cards currently in circulation - the intent being to avoid bias linked to brand name recognition. Here participants completed word association tests.

Second Test Set: This set comprised three scenarios - two shopping scenarios (using cash and card payment modes) and one gift situation:

Imagine yesterday was your birthday, and a special person (parent, sibling or best friend) gave you a birthday card. You opened the envelope and found a NZ \$50 note in cash.

What thoughts and feelings come to mind? List the words that come immediately to mind. Do not analyse your responses. Do not think about the words. Just write down your first thoughts - even if you think they are odd or strange. Try to complete the task in no more than 3 minutes.

Third Test Set. This set involved presenting participants with two tasks designed to allow the participants to anchor their thoughts about the notes and debit cards. This required participants to link the characteristics of shoes to the bank notes and the card. They were also requested to identify, from a bank of personality traits, those they associated with the bank notes and the debit card.

A full version of the final version of the work book and management protocols is in Appendix 3 Pg.15-19.

4.4.2: Participant Selection

There are no guidelines as to the number of focus groups that should be used in a research project. The average Focus Group project consists of 4 to 6 groups, with some smaller projects holding only 2 or 3 groups and larger projects having as many as 10 to 15. Ritchie and Lewis (2003) advise that 4-8 would suffice. There is consensus that between 6-10 people per group is acceptable (Patton, 2002). Fifty six women volunteered, however the final participation number was thirty-one.

4.4.3: Data Collection and Analysis

Data were collected via five focus group sessions (FG1-7; Fg2-6; FG3-5;FG4-6;FG5-7). Once the initial briefing was complete participants were asked to complete the work book tasks (see Exhibit 4.1). Once the work book activities were complete the session moved to a group discussion. Focus group transcripts and individual workbook data were entered into Microsoft Word as rich text file and then imported into Nvivo version 8.0. The method of analysis followed Coffey and Atkinson (1996) who suggest generating codes from data, frequently revising the codes generated, grouping codes into categories and finally developing themes from the data. This procedure indicates the chain of evidence present in the analysis and describes precisely how the classification, theme identification and linking of key properties have been made.

There are two major validity threats with qualitative research: researcher bias and interviewee reactivity; that is ‘what the informant says is always influenced by the interviewer and the interview situation’ (Maxwell, 2005:109).

Addressing reliability and validity issues in qualitative research is complex in that the purpose and type of data do not lend themselves to the tests normally associated with reliability and validity issues in quantitative studies (see Wallendorf & Belk, 1989; Winter, 2000). Essentially, what needs to be established in qualitative research is accuracy in terms of bias reduction in data collection, reporting and interpretation. It is important that the data

gathered at a specific time and place be considered strong evidence for the explanations offered. Guba and Lincoln (1988) proposed four criteria for judging the soundness of qualitative research and explicitly offered these as an alternative to more traditional quantitatively-oriented criteria: **Credibility** - that the results of qualitative research are credible or believable from the perspective of the participant in the research; **Transferability** - the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings. This is in the hands of the researchers and requires a thorough job of describing the research context and the assumptions that were central to the research; **Dependability** - emphasizes the need for the researcher to account for the ever-changing context within which research occurs. The researcher is responsible for describing the changes that occur in the setting and how these changes affected the way the research approached the study, and **Confirmability** - refers to the degree to which the results could be confirmed or corroborated by others.

For this study, these have been addressed by clear statements of task, participant type and participant selection; Detailed reporting of procedures (see workbook and focus group protocols, see Appendix 2, Pg. 9-15). Multiple (and independent) focus group facilitators (Appendix 2, P.09); Transcriptions done by independent transcribers; Multiple coders and participant verification To minimise interpretation bias 'respondent validation' or 'member checking' was carried out (Maxwell, 2005:110; Creswell and Clarke, 2007). This was managed by having participants check and approve whether the findings accurately reflect their experience.

4.5: Phase Two: Questionnaire Development and Testing

To collect and analyse payment mode perceptions a psychometric instrument was required and such an instrument was developed and tested (see Chapter Six). Generating items is a crucial stage in scale development. For this study it was important that the items reflect the cognitions and emotions of the test population so the initial items were generated from the focus group data (see Exhibits 5.8 and Exhibit 6.3). The items were examined for clarity of meaning and expression by the researcher and members of Faculty and the final 67 initial items were endorsed by the focus group members. The psychometric properties of the scale

were initially examined via a test-retest process using an independent sample (Netemeyer, Bearden and Sharma, 2003). Ideally, this stage should have used a sample drawn from the target population, however the large sample size necessary for a scale test made this impracticable so participants were drawn from a pool of final year undergraduates and post-graduate students. 331 completed the first test and 259 of these participated in test two. Structural validity was determined via an exploratory factor analysis (EFA) process on test one and both EFA and confirmatory factor analysis using Amos software was run on test two (Gerbing and Anderson, 1988). This process resulted in a 34 item scale.

One hundred and eighty one participants in Phase three completed the 34 item scale and the psychometric properties evaluated via EFA/CFA procedures. Six factors (Emotions Cash, Emotion Card, Money management, Status/Pleasure, Liquidity and Gift behaviour).

4.6: Phase Three: Payment Mode Choice and Purchase Decisions

Phase three addresses the questions: *Is there a link between these associations and payment mode choice? Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so, how?* The type of data required to answer the first question is captured via the payment mode perception scale. The type of data required to answer the second includes details of products and brands purchased, total amount spent and number of items purchased and is captured by the supermarket receipts supplied by the participants.

Participants who met the criteria set out in Section 4.3 were solicited from the Plunket organisation member database. Five hundred were randomly selected and invited to participate in the study. Two hundred and forty three initial agreed to participate, but this dropped to 240 (48% response rate). Participants were then randomly assigned (with their agreement) to a specific payment mode - cash, debit card and control (participants asked to use their normal payment mode). Participants were asked to provide a supermarket docket for their weekly household shop for the week specified. The weekly supermarket shop is a feature of New Zealand family life and as the participants were aware of the request the

assumption was that those who agreed to participate shopped weekly, at a supermarket for their groceries.

This was to ensure that all the receipts were for the same week. Participants were instructed to place their shopping receipts and the completed Payment Mode Perception (PMP) questionnaire scale in the envelope provided. Envelopes were collected by the researcher during play group and parents' meeting sessions. One hundred and ninety two participants supplied their shopping dockets and a completed PMP questionnaire (final response rate=36%). Responses and final sample sizes across the test group are as follows:

Cash Payment Mode: Sixty-one participants returned their purchase dockets (76% response rate). Seven cases were incomplete in that either the respondent did not provide a purchase receipt along with the questionnaire or the questionnaire was incomplete. Two cases were excluded from the analysis as the items purchased were for re-selling and not personal consumption. These participants spent \$800 and \$700 in a single transaction. Fifty-two purchase receipts were retained for analysis.

Debit Card Payment Mode: Sixty-six purchase receipts and questionnaires were returned (82% response rate). Of the eighty participants assigned to this group, fourteen elected not to continue.

Control Group: Sixty-five participants supplied purchase dockets and questionnaires (Response rate 81%). One participant supplied incomplete questionnaires and one supplied a shopping docket for purchases totalling less than \$20, (the purchases were for sundry items and not representative of a weekly household shop and so were excluded from analysis). Sixty three cases were usable for analysis.

4.6.1: Data Entry and Analysis

The data comprised the purchase dockets for a household weekly supermarket purchase transaction and the participant's responses to the PMP scale. The items on the shopping receipts were coded into product categories. Product categories from a major super market online portal were used to establish coding classifications. (<http://www.foodtown.co.nz/>). The twenty-five categories identified in this site were collapsed into thirteen categories - see Exhibit 4.3. Alcohol and tobacco products were excluded as only some supermarkets stock alcohol and tobacco tends to be a separate purchase. In addition to the product categories and brands, the number of items per transaction and the total value of the receipt were also recorded. Demographic information included age, education, and ethnicity. The final data

set, in addition to the payment mode use and the demographic information, comprised the following data take from each receipt: total number of items, total value, number of items purchased in each of the product categories shown in Exhibit 4.3. Information on discounted items and brand type- manufacturer and distributor, was also collected. The two brand categories are necessary, as the supermarkets in New Zealand provide a substantial number of products under the retailer's own brand and are usually sold at a cheaper price than the manufacturers brand within the same positioning criteria (e.g. premium or low cost).

Data reliability involves issues relating to accuracy of coding and data entry (Kaplan and Goldsen, 1949; Kassarian, 1977; Kolbe and Burnett, 1991; Krippendorff, 2004; Rosengren, 1981; Ryan and Bernard, 2000). Coding instruction briefs were prepared to ensure commonality of coding procedures across coders. The coding process was a communal event so any issues were dealt with and agreements reached by consensus. To manage consistency and reliability, two groups of four were formed, with each coding ten randomly allocated receipts. The receipts were swapped and coded by the new group. Consistency across coded entries was computed at 98%. Inconsistencies were easily resolved by discussion as the data type is rather specific. Data coding and entry involved a two stage procedure. The first stage involved coding the items of the purchase receipt into categories and the second, identifying brand type and discounted items. The brand category comprised manufacturers' brands and distributors' brands. Data entry accuracy was managed by ensuring that the total value and number of items entered tallied with that on each docket.

Exhibit 4.3: Product Categories

	Category/Id	Description
1	Meal / A	Bakery, deli & chilled food, fruit & vegetables, meat and sea food, breakfast food, frozen food, meal ingredients
2	Drinks (hot & cold)/ B	Coffee, hot drink mixes, juice & fruit drink, milk shake mixes, powdered drink, soft drink, energy drink, tea, and water
3	Snacks/ C	Biscuits, crackers, and chips and snack bars
4	Confectionery/ D	Sweets, chocolate bars, chocolate blocks, chocolate box, sweet nut mixes and sweet bars, waffles
5	Desserts/ E	Cheese cake, cream puffs, éclairs, puddings, savouries, and pastries
6	Personal care/ F	Aromatherapy, condoms & lubricants, cosmetics, deodorants, hair care, oral care, sanitary products, skin care & shaving, soap, sun care products, tissue and accessories
7	Baby care/ G	Accessories, clothing, food, toiletries, cleaning, medicines, nappies
8	Kitchen & home ware/ H	Appliances, baking and cooking accessories, cutlery, crockery, kitchen utensils
9	Cleaning & home care/ I	Air freshener, batteries, cleaning products (bathroom & kitchen), floor cleaning, furniture polish, gardening, insecticide & pest control, laundry, light bulbs, rubbish and vacuum bags, toilet papers
10	Toys, parts & supplies/ J	Disposable dinner ware, games & puzzles, party preparation, toys.

11	Medicine & wellness/ K	First aid, pain relief, sports & weight management, health supplements
12	Miscellaneous	Items that do not qualify for any specific category (e.g. sewing needles)
13	Pet care	Dog food, cat food, pet accessories
The product categories from a major super market online portal were used to establish these coding classifications (see http://www.foodtown.co.nz/).		

A second data set comprised the responses to the PMP scale and demographic information. To identify the participants who normally use each payment mode, an item on the PMP scale, *I normally use cash to pay for my day to day purchases*, was used to identify the cash and card preference. All respondents who noted (1) I agree and (5) I disagree, were identified and separated to enable comparison.

Preliminary analysis involved descriptive statistics and purchase behaviour across the payment modes was examined via an Analysis of variance, (ANOVA). To determine if there is a relationship between payment mode perceptions and payment mode choice, factor and item means were compared via an independent means *t*-test.

The factors that are widely understood to affect external validity are sample selection, pretesting, research setting and multiple treatments on the same sample. In this study pretesting effects was avoided by using different samples for the pilot study and scale testing. The study avoided some of the issues, but not all related to research task influence. Participants were not given full details of the research, however the supply of a shopping receipt that would be scrutinised may have influenced their shopping behaviour, even though anonymity was guaranteed. The narrowness of the identified population and its coupling with purposeful sampling together preclude generalisation.

4.7: Summary

This chapter outlines and justifies the approach taken in developing the research design and describes the rationale for and the procedures used to obtain the final sample selected. It sets out the data collection modes and analytic approaches adopted. Issues relating to reliability and validity are discussed and procedures designed to minimise these are described.

There are two major validity threats with qualitative research: researcher bias and interviewee reactivity; that is ‘what the informant says is always influenced by the interviewer and the interview situation’ (Maxwell, 2005, p.109). Addressing reliability and validity issues in qualitative research is complex in that the purpose and type of data do not lend themselves to the tests normally associated with reliability and validity issues in quantitative studies (see Wallendorf & Belk, 1989; Winter, 2000). This research takes into account Guba and Lincoln’s (1988) four criteria for judging –soundness of qualitative research and explicitly offered these as an alternative to more traditional quantitatively-oriented criteria: credibility, transferability, dependability and confirmability.

For this study, these have been addressed by clear statements of task, participant type and participant selection; detailed reporting of procedures; transcriptions were done by independent transcribers. The study includes multiple coders and participant verification to minimise interpretation bias ‘respondent validation’ or ‘member checking’ was carried out (Maxwell, 2005:110; Creswell and Clarke, 2007). This was managed by having participants check and approve whether the findings accurately reflect their experience.

Chapter Five

Phase One: Results and Analysis

5.1: Introduction

This Chapter describes the process and procedures used to address the question: *Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?*

To guide analysis and facilitate the research task, examinable propositions were proffered in Chapter Three.

P.1. *The cognitive and emotional elements that people associate with a cash based payment mode will be different to those associated with a debit card based payment mode?*

Drawing on extant literature, two ancillary propositions are formed

P1_a *Perceptions of the price/benefit analysis of expenditures will vary across cash and debit card payment modes.*

P1_b *People's perceptions of how they keep a mental tally of expenditures will differ across cash and debit card payment modes.*

Data for this Phase is drawn from initial individual written reports of focus group participants and transcribed subsequent focus group discussions. The text was analysed for words and themes that reflect how the participants think and feel about the payment modes.

One task for this Chapter is the generation of items for a payment mode perception scale that will be used to examine the proposition in Chapter Seven that: *there is a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice.* These items were generated and are set out in Exhibit 5.8.

The Chapter commences by describing the data and how it was analysed. Results for the focus group projective tests are reported followed by the group discussions. Discussions and summary conclude the Chapter.

5.2: Data Type and Analysis

Individual written responses to the projective tests and the transcribed focus group discussion constitute the raw data for this phase. The first analytic stage involved reading, annotating and identifying initial objects of interest. Initial coding consisted of word identification and count and then a more focussed clustering and comparison. Themes were then identified, classified, summarised and interpreted.

In addition to the focus group discussion, individual perceptions were captured via three projective tasks:

Task One: This task involved presenting participants with bank-notes (\$20, and \$100 denominations) and a debit card and asking them to complete a word association test.

Task Two: Comprised three scenarios -- two shopping scenarios (using cash and card payment modes) and one gift situation with respondents asked to describe their thoughts.

Task Three: This required participants to link the shoe type (Exhibit 4.1) to the bank-notes and the card used in Task One. They were also requested to identify, from a list of personality traits, those they associated with the \$20 and the \$100 bank-notes and the specifically designed debit card. A copy of the workbook is in Appendix 2. Pg. 9-15.

The focus group transcripts and individual workbook data were entered into Microsoft Word as a rich text file and then imported into Nvivo version 8.0. The software allows either a “bottom up” or “top down” approach. The former is selected here as the intent is to go through the data and, directed by the research, create word nodes and search for relevant information (Braun & Clarke, 2006). The responses to the three projective tests and the group discussion transcripts were read in order to become familiar with the participants and their worldview. Once the transcription were in place the facilitator went through and identified participants- denote each one for each focus group as P1, P2 and so on (Warren & Karner, 2005). As Nvivo works best when data is prepared and cleaned, the word use and sentence structure were modified where necessary to create a clearer meaning. In this process, filler words such as “however,” weak verbs, and other words that do not add meaning to the

sentence were eliminated. Words that denote thoughts, uncertainties or pauses such as “um” and ‘huh hu’ were retained. All pronouns were coded with a unique number (P1/P2 etc.) and linked to the source. Similar words and phrases were grouped and treated together. If the meaning of words was metaphorical, the entire metaphor fragment was noted. Analysis was directed by the constant comparative method. Following the initial data preparation, coding began inductively - developing initial codes and moving thence to identifying themes and selective coding.

5.3: Participant Profile -Focus Group Sessions

Participants were solicited from The Plunket organisation member database. Posters and brochures were placed in the Plunket Newsletter, along with posters and brochures placed in selected playgroup and child health centres run by the Plunket Organisation. The invited females aged between 25 and 45 and live in the same suburban areas of Auckland (see section 4.4.2). Fifty-six volunteered, however the final participation number was thirty-one. Participants are evenly distributed across both age groups and suburbs; however education and ethnicity vary as does their professional profile (see Exhibits 5.1 and 5.2). New Zealand Europeans dominate the tertiary level, followed by the Chinese participants.

Exhibit 5.1: Demographic Profile

Age	Count	%	Birth Place	Count	%	
25-35	17	55	NZ Born	18	58	
36-45	14	45	Non-NZ Born	13	42	
Ethnicity	Count		Qualification			
			Master Degree	Bachelor Degree	Diploma	High School
NZ European	18	58	5	9	3	1
Chinese	7	22	4	2	1	0
Indian	4	13	1	3	0	0
Maori-Pacific	2	7	0	0	0	2

5.4: Results- Projective Tests

Initial analysis identified words and phrases that are presented as a basic word count. These are shown in Exhibits 5.2 to 5.5. Sample quotes are included reflecting on the key themes that emerge from of each of the tests. This is followed by a closing discussion on the results

of all three projective tests. A full list of the themes for all of the projective tests is in Appendix 5. Pg. 21.

Test: One

Participants were presented with a \$20 and a \$100 note and specifically designed debit card that they were informed has a stored value of \$100. They were asked to note down their ‘top-of- mind’ responses.

Projective Test One (a)

This test required participants to look at and to hold a \$20 and write down the words that come to mind. A summary of the words recorded are shown in Exhibit 5.2.

Exhibit 5.2: Projective Test One (a) Word Associations (\$20)

\$20 Notes	Count
Shopping/Spending	
Easy to spend	11
Lunch money	6
Bus fare	6
Pocket money	4
Petrol	8
Necessities (nappies, wipes, baby food, flea-market purchase)	2
Characteristics	
Familiar and common	6
Low denomination	5
Paper	2
Vanishes quickly	7
Sensible	2
Reliable	2
Emotions	4
Comfortable	2
I don't feel guilt	2

The most common words and phrases are to do with spending, more specifically spending on small day to day amounts. Others include words to the effect that the \$20 note is familiar (in the sense that everyone has one) and it is ‘comfortable’ to have one in one’s wallet; essentially, quickly spent without angst. The following quotes give a general idea of the main themes:

- *My first thoughts about \$20 cash is not enough, and doesn't last longer. \$20 is lunch money*

- *I prefer using cash. It does not hurt breaking \$20 note compared to \$100 note. I often carry around \$20 in my wallet*
- *I won't think much to spend cash \$20 to buy unnecessary things*
- *When I think of \$20 cash I see petrol money, nappies and wipes, baby food, common, everyday, useful, recyclable*
- *I generally carry \$20 cash in my wallet, in case I need it. Such as my bus pass declined, then I can still use the service using cash. This amount of money is common, reliable, and comfortable*

Projective Task One (b)

This test required participants to hold the \$100 note provided and write down their thoughts. Once this was completed they were then asked to hold a specifically designed debit card (having been told that it had a \$100 available to spend) and to write down their thoughts.

**Exhibit 5.3: Projective Test One (b) Word associations \$100 note/
\$100 in Debit Card**

\$ 100 Note	Count	\$100 in Debit Card	Count
Positive Thought		Positive Thoughts	
Enjoy spending	2	Excited	2
Excited to have it	2	Secure	2
Happy mood	4	Relaxed	2
Secure/Feel rich	1	Happy, joy, pleasure, fun	1
Negative Thoughts		Negative thoughts	
Worry of loss	1	Waste money	2
Breaking cash Hurts	1	Hate to check account balance	5
		Fear of loss [of card? (versus money)] and worrying	1
Shopping		Shopping	
Necessities (food, clothes, nappies, wipes, takeaways etc.)	2	Necessity (food, grocery, items on sale, petrol, baby food)	1
Special Appliances	2	Special (impulse purchase, online)	1
Characteristics		Characteristics	
\$100 is pink, old fashioned, reliable, tangible, user-friendly	1	Own money	4
		Low fees	2
		Ease	1
		Status	1
		Opportunity	3
		Access, freedom, lifestyle,	1
Money Management		Money management	
Control	2	Trackless spending	2
Savings	1	Overspend	1
Power to spend			
Ability to spend (on anything)	1		
Small value	1		

An initial word/phrase count identifies similar positive associations for both payment modes suggesting that what the token represents overrides the physical characteristic of the token.

However the negative thoughts differ, in that those associated with the debit card are to do with wasting money and the loss of the card - but not so much the \$100 note- concern here was losing the actual note- but spending it was not deemed wasteful unless being used to buy a small value item. The thoughts about losing the \$100 note are to do with actual loss of a specific value. The type of products associated with both does not differ, however the attributes/ characteristics do. Debit cards are associated with freedom, opportunity and status; cash is old fashioned and friendly. Debit cards are also associated with overspending and poor money management. Cash however is associated with control and saving money.

Quotes relating to \$100 Note

- *\$100 cash means fun and excitement of possessing the money. I withdraw cash to control my spending behavior. Small amount of cash in wallet also makes feel secured and happy. I think \$100 cash makes me feel better off, happy, puts me in a better mood; I feel successful*
- *Cash is more controllable*
- *I don't get to hold \$100 note very often*
- *Breaking \$100 hurts when it is for small purchases*
- *\$100 note is old fashioned, shopping small value items and is dirty as it passes through many hand in circulation*
- *I will associate cash \$100 note as wealth, cocaine, extravagance, and not secure or safe*

Quotes relating to \$100 stored and available in a debit card

- *The first thought is where to spend this money. When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left. I hate to check balance, it simply hurts me*
- *I do feel money in debit card is unreal and kind of intangible. It is hard to keep track of my spending if I am not fully aware of my spending habit*
- *I check my account balance regularly to know the balance and budget my spending accordingly*
- *I will be excited about having \$100 money. It is my money, I have earned it. I see value rather than cash or debit card*
- *When I think about \$100 in debit card, reminds me of opportunity and possibility to either spend or save. It reminds me of gift and associated excitement. When I have \$100 in debit card, I feel secured so it provides security*
- *\$100 in debit card is not real; it can't be touched or felt. I can't keep track of how much I am spending and what is left in my account. I think people get addicted to swipe card and indulge in materialistic life. I'd be inclined to waste the money on luxury items rather than worrying about my budget*

Projective Task Two (a)

For Projective test two participants were directed to read the following scenarios and note down their responses.

Scenario One

Imagine yesterday was your birthday, and a special person (parent, sibling or best friend) gave you a birthday card. You opened the envelope and found a \$50 note in cash.

Two clear themes emerged from the comments: Gratitude (two-thirds of the group expressed this sentiment): Treat/indulgence for 'self (again over two-thirds of the quotes reflect this sentiment). Only one comment that cash was unwelcome was noted and three participants commented on the fact that they would spend it on their children.

Sample Quotes:

- *My mother gave me \$50 cash on my birthday. I will be very pleased and appreciate this gift to buy something special for myself. It is warm and appreciation*
- *I want a gift better than money even [if] this gift is only \$5*
- *If I receive \$50 cash as gift from my mother is a gesture of generosity. I might feel guilt spending the money on myself so I will spend on my child to buy baby clothes*
- *When I receive Cash \$50 as gift I straightaway feel joy. I think it is special and could be spent on dinning out. It also reminds me of thank you to the person, gratitude towards the giver and I will definitely use that money to treat myself*
- *This \$50 cash gift is important to me; I will have fun with it. I describe it as nurtured pleasure*
- *\$50 cash gift from my mother. I will spend it on myself, possibly go out for lunch. I will be disappointed if I don't use it for myself*

Scenario Two

Imagine yesterday was your birthday, and a special person (parent, sibling or best friend) called you in the morning to let you know that they had direct debited \$50 to your account.

The overwhelming response to this scenario is that it would not be spent on something special and would just go into general revenue to be spent on household expenses. This view is expressed by over two thirds of the participants. About half indicated that they prefer to have cash as it makes the gift a bit more personal, depositing into an account is considered

cold. It seems that money in the debit account is utility. Interestingly, very few (5) comments expressed gratitude or considered the gift deposited to the bank account to be a generous act.

Sample Quotes

- *I will not regard \$50 direct debited to my account as gift. This amount of money will be lost within my savings and after someday I will forget about it*
- *\$50 direct debited to my account as gift is bit cold gesture; there is no personal or emotional attachment to it. This gift gesture is like trying to win brownie points by calling to kill the surprise. This gift giving gesture means obviously not really that close to me*
- *The word that comes to my mind associated with \$50 direct debited to my account as gift is disappeared, not tangible, forgotten, boring and impersonal*
- *If my mother deposit \$50 in my account later tells me about this gift, it will be another transaction to my account. It is formal and business like I would find it very strange; it wouldn't feel like a present, but more like she owed me money*
- *My initial thought about receiving \$50 as gift from my mother in account will be pleasant. I am grateful that she did a nice thing and I will be able to pay my bills When I receive money in my account it gets mixed up with other money and over time I might forget that I received \$50 from my other and will spend on things such as paying bills*
- *Yes but \$50 in card feels more fun, intangible. It feels a little like 'bill paying' when it arrives in the account. I would set it aside, and withdraw \$50 cash from ATM to derive the feeling of gift. I think physical gift makes more personal and is pleasurable*

Projective Task Two (b)

Participants were presented with the following shopping scenarios and asked to write a brief paragraph describing how they would behave in relation to the type and number of things they would buy.

Scenario One

Think of a weekly grocery shopping in a supermarket where you budgeted to spend only \$200 and you only have the option of using cash to pay for the purchases.

Selected quotes:

- *I'd take a calculator with me to be sure I didn't go over the \$200 cash. Out of habit tally up an approximate total for the items I am buying anyway so I can keep within a budget bracket but with a card it doesn't matter if I got over a little bit. If I was limited to the \$200 exactly I'd have to be more particular. I take time looking for discounted items, comparing prices and choosing items that are value for money anyway so that is the same for me no matter now I'm paying at the end. I'd probably use the whole \$200 or close to it if I had already worked out my budget*

- *I will carry a calculator and a list of items that I want to buy from the supermarket. I will get all the essentials first e.g. bread, milk, eggs. I will not take kids with. It would be nice to be able to buy some treats too. I would plan the weekly meals/school lunches and write a careful shopping list*
- *I will buy basic first, calculating as I shop in the supermarket. I will feel pressured not to go over budget at checkout. If some necessities one on special then stock-up and go without something that may be a treat*

Scenario Two

Your salary was deposited into your bank account that you use for day to day expenses and bills. Any money remaining after you have paid for the expenses is transferred to a savings account at the end of every month.

Think of a weekly grocery shopping experience in a supermarket where you budgeted to spend only \$200 and you only have the option of using your Debit Card to pay for the purchases.

Selected Quotes

- *I would check prices closely, only get essentials. Look for budget products, probably a quick shop*
- *When I know I have \$200 in my cheque account I'd more likely to buy less necessary items and not go over the limit*
- *I will just buy essentials and make sure that I don't exceed \$200 as transaction would decline which is embarrassing*
- *If I had \$200 to shop for my groceries would use about \$100 the rest I would stay as a credit on my debit card*
- *I can over spend. I wouldn't be as careful about checking the prices as I have a backup plan with the overdraft or extra dollar in account*
- *I'd find it difficult to add up the purchases while moving around the supermarket; might make it a bit more stressful than usual. I'd be more conscious of buying the cheaper brands and try to find items on special (even though \$200 is more than I normally need). Saying this I would feel a bit safer to carry a debit card than having notes in my wallet or pocket. I would still be price conscious and add up the total as I shop*
- *If I have to use my debit card, maybe, I will not check the price of the thing and just buy it. Because I will think that" oh I have money in my account I don't have to worry about it"*

Projective Task Three: Comparisons with Shoes and Human Personality Traits

For this test, participants were presented with a list of 'Shoe' types' (see Exhibit 4.1) and asked which type of shoe they would associate with each of the payment modes. Once they had completed identifying the shoe type they were asked to identify attributes that they

thought the shoe (that was linked to the payment mode) would have – these are shown in Exhibit 5.4. Once this task was complete, participants were then given a list of human traits (see Workbook –Appendix 2 Pg.13-14) and asked which they associated with each of the payment modes. The results are shown in Exhibit 5.5.

Exhibit 5.4: Shoes and Human Attributes Associated with Shoes

Type of Shoe	Debit Card	Note \$100	Note \$20
Work/Formal	9	13	3
Casual	19	2	21
Fashion	10	16	0
Athletic	4	3	10
UniSex	9	7	13
Attributes			
Male	1	1	0
Female	18	9	4
Common	12		13
Cheap	0		7
Comfortable	2		4
Dependable/Durable	1	5	
Exotic/sexy	2		
Expensive	3	6	
Status	4	5	
Fashion	3	3	
Carefree,(1) Essential, (1) Basic (1)			3

For this test, shoes such as high heels, Balmorals and kitten heels are clustered into the work/formal category, slingbacks with fashion shoes and pumps, slip-ons, mules, espadrilles as casual wear. Both the \$100 note and the \$100 debit card are strongly associated with work and/or formal shoes and with fashion. The main variation across the two is the association with casual shoes. Here the \$100 note dominates. That the attribute female is most commonly attributed is probably a function of the sample. Most similarity is noted with both the \$20 and the \$100 in the debit card. Both are seen ‘common’ by around two-thirds of the participants. Understandable as \$20 and the debit card are normal objects in a wallet. That the \$20 is described as cheap is probably a reflection of its purchasing power.

Exhibit 5.5: Human trait scores of \$ 20 and \$100 notes and \$100 in Debit Card

	Cash		Card \$100	
	\$20 Note	\$100 Note		
Comfortable	15	7	Comfortable	15
Confident		10	Confident	8
Dependable	14	4	Dependable	11
Expensive		11	Expensive	3
Fashion		6	Fashion	5
Fun seeking	2	4	Fun seeking	3
Happy	6	9	Happy	4
Pleasure	7	10	Pleasure	3
Problem solver	8	6	Problem solver	6
Relaxed	8	7	Relaxed	8
Value	1	9	Value	8
Wealthy		11	Quiet	4
Power	2	6	Restrained	7
Status		7	Stylish	5
Quality		4	Active	4
Attractive	3	16	Attractive	3
Carefree/not serious	9			4
Casual/easygoing	12			12
Independent				5
Lazy				3
Messy				3
Multitasking	2			4
Honest	10			3
Alternative	1			7
Hardworking	7			
Traditional	5			
Responsible	5			

The three projective tasks allowed individual perceptions of the payment modes to be captured. As evident in Exhibit 5.6 there are interesting differences between the \$20 and the \$100 and the \$20 note has some similarities with a debit card that allows access to a sum of \$100. Both in comparison to the \$100 note are considered common, easy-going, dependable and not as attractive as the \$100 note. The \$20 is however more honest and hardworking than the debit card. Many of the ideas expressed by the participants individually met with general support in the discussion sessions that followed.

Exhibit 5.6: Summary of findings

\$20 Note	\$100 Note	\$100 in Debit Card
The Token		
Easy to spend Doesn't last long Day to day necessities Happy to spend	Enjoy spending it, but hate to break it Worry about losing the note For necessities Traditional Increased shopping power	Enjoy spending it Worry about wasting it and about overspending For necessities Allows impulse purchases Convenient
As a gift		
N/A	Gratitude Enjoy spending on self (treats/indulgences) Enjoy spending on one's children	Would go into household revenue Would not spend on something special for self or others Cold and would not feel like a gift Minimal gratitude Minimal enjoyment
Shopping		
N/A	Would take calculator Plan purchases Check prices Focus on purchasing necessities	Probably take a calculator- if not, make mental count of purchases More unplanned purchasing
Characteristics and Traits		
Comfortable, casual, cheap Dependable ,honest, problem solver, hardworking/responsible Pleasure/happiness Traditional	Confident, expensive, comfortable, Pleasure/happiness, wealth/value	Comfortable, confident Hardworking

5.5: Results- Focus Group Sessions

Analysis of transcribed focus groups discussion identified eight themes, These have been labelled: *Awareness of spending, Money management, Liquidity, Security, Physicality, Gift, Emotions* and one that relates to *'Breaking the \$100 Note'*.- A number of quotes representing the general notions that participants expressed in relation to the payment modes are presented in Exhibit 5 .7.

Awareness of spending (see Exhibit 5.7a)

As the quotes demonstrate, the majority express the notion of being conscious of actually spending 'something' when cash is used, that cash assists in the 'mental counting' process at the time of or immediately after paying. There is also a reluctance to part with cash:

- *That's true I am more likely to spend thirty dollars on a credit card than the twenty dollars in my wallet*

However there is an indication that, once the cash is spent over time memory of what has gone has disappeared; whereas when using the card, at some point (usually when the bank statement is checked) you get a reminder that you have spent something. At the point of paying, there is a stronger conscious recognition (imprint) of the amount spent that appears not so strong when the debit card is used. For example the following extract from Focus Group Three gives an idea of the type of discussion:

So you said that you are more likely to spend more on the card than if spending cash? (Facilitator)

P1. Yeah

P2 It's a false sense of freedom and elbow room to spend a bit more of your own money so that's why it feels weird.

So with a hundred dollar cash? (Facilitator)

P1 I would restrict

P2. Definitely

P1 And it's embarrassing having to put things back when you get to the checkout so you have to be really careful about totalling as you go.

But with this hundred dollar debit you have access to something you might spend (Facilitator)

P1. Yeah I just wouldn't care I would guess it

Money Management (see Exhibit 5.7b)

Related to spending awareness is the notion of money management - as can be seen from some of quotes in Exhibit 5. Some of the issues that pertain to money management link to awareness - *and it's just a number on the (eftpos) screen.*

Though a few participants (only in three of the focus groups) expressed sentiments that they didn't care where the money was coming from, they would still look for bargains. But the overwhelming theme is that cash does help balance the budget. The following quote represents the sentiments of the majority of the participants across the sessions:

- *I also find it more uncomplicated because if you're using say a credit card or a debit card or smart card you run the risk of going into debit because you see something you like and you can get it but there are repercussions later on so with cash its really straight forward and simplistic and uncomplicated*
- *if I have cash I would think more about saving like think for saving or I have to save something I have only twenty left now if I have cash but if I have EFTPOS I don't think about saving I just oh I will pay in my next pay.*

Liquidity (see Exhibit 5.7c)

It was difficult to decide on an appropriate label for this theme. However the idea underpinning this theme is that once money is in the wallet it is for spending- especially small

denominations (\$5, \$10). On the other hand, there is an awareness that the money is being spent and the notion of 'if it's there, it is for spending' does not translate to the \$100 note. There was almost consensus that breaking a \$100 note was to be avoided. During the first focus group session, this issue of breaking the \$100 note emerged, and this was pursued in the subsequent sessions. Essentially, the issue revolved around having a \$100 note in the wallet and how the participants felt about spending it - comments included:

- *I feel like I could save it and put it towards something bigger where as if I have the same with twenties I just break it down and I think oh well that's a book, that's a coffee, that's a newspaper where as if I have a bigger denomination I feel like oh maybe I should put that aside because there might be a big purchase on something coming up*
- *Once the note is broken you might as well spend the lot*
- *You hold back*
- *It's important you don't want to break that hundred?*
- *I would also feel reluctant to break it.*
- *You don't want to break the hundred yeah,, no breaking the hundred*
- *But you sort of don't want to see it diminish, you want to see that hundred still intact*
- *If it's putting toward something decent I feel good but if I have to break it because I need some change for the bus I feel really bad*
- *Otherwise it would get just frittered away. You would break it buy something and then it would just fritter....Yeah once it's broken yeah it gone. Its frittered away*

Security (see Exhibit 5.7d)

The main concern with carrying cash is the sense of the irrevocability of the loss - once it's lost or stolen- that's it. Debit card seemed to provide some control over loss and it emerged as an important feature of debit card use

However a handful of participants observed that having cash gave them a feeling of security in that it was acceptable everywhere. The notion that you can survive even with a \$20 (but much more with a \$50 or a \$100) in your wallet was expressed by quite a few participants.

Money as a Gift (see Exhibit 5.7e)

The scenario emphasised the gift as coming from someone 'special'. Describing the person giving the gift was directed by a number of considerations: the donor-recipient's age, the occasion and the relationship of the donor-recipient. Webley, Lea and Portalska (1983) and Burgoyne and Routh (1991) note that gifts of money from younger to older generations are deemed unsuitable (however, their subsequent work indicates that this attitude was more prevalent among givers than recipients. Gifts of money from the older generation to the younger are acceptable, including money gifts from older to younger siblings and quite

possibly older to younger friends. However gifts of money between equals and peers are not acceptable. Though the issue of money among peers is a factor, the increasing use of generic gift shopping vouchers is something that was considered. The essential issue however for this study is the mode of delivery.

The focus group discussion reflected the findings of the projective tests - a gift of money in the form of cash is preferred over a direct debit. Not only is the process seen as cold and impersonal, the consciousness that it would be spent on something special varied - \$50 or \$100 note as a gift was preferred as cash. The sense of the projective tests is that money deposited into a bank account is utility money and the gift is impersonal. In some sense it becomes profane whereas the \$50 remains sacred (Belk and Wallendorf 1990).

Physicality (see Exhibit 5.7f)

This theme and awareness of spending generated the most discussion. As can be seen from the quotes in Exhibit 5.7f:

- *I like looking at \$100 note ,*
- *I feel as if I am parting with something when I had over cash*
- *It is just when I can hear coins I think I have actually got money. I feel richer but then I know that's not right*

The discussion surrounding the physicality in the first session resulted in the facilitator going in a slightly different tack by asking (relating to paying for products) - 'If you had to go to a totally new country (or planet) what would you take? The overwhelming response was Gold (or diamonds) and the majority agreed that the next best thing was cash - none would take the debit card. When asked why 'cash' the responses for the most part replied - well *you can see that it is money*. This question was asked in another group and the response was the same. During the discussion the issue became one of 'recognition', that is, would the value of gold be recognised? If not then it would probably be worthless, but in the end they thought that they would take it 'just in case'. The sense that cash didn't decline was also discussed, initially in relation to the notes, but as the discussion moved on, that the same value was in their debit account was recognised. The interesting aspect is that this was not the initial response.

Emotions (see Exhibit 5.7g)

The most reported emotion was in the context of receiving a gift of cash (the focus was on \$50/\$100) was 'excited'- excitement that they could indulge. This of course may be a reflection of the characteristics of those studied- females with young families. Females with young children tend not to have spare cash to spend on themselves. This of course may have biased the gift findings, as the gift of cash does not go into 'general revenue', but can be kept to spend whichever way they fancy.

The other emotion reported is a sense of sadness, this is different to pain and is more associated with sentimental nostalgic feeling of loss of something to which you were attached. experienced when parting with cash that does not occur when a card is used as well as a feeling of justified self-satisfaction, in the sense that being able to spend is a 'reward' for work done and it is more intense when cash is used. This awareness of concurrent emotions was generally agreed. The following extract (Focus Group Four) is an example:

P1. If it's a luxury thing depending on how much money I had if it's a kind of luxury item and I feeling a bit broke then I might not feel very happy about it but I never feel very happy about the money for shopping for the groceries. But otherwise if it was a present then I would feel very happy about buying a luxury thing. *Bargain* ..all those luxury items all those wonderful cheeses I had brought.

Doesn't matter how you pay? (Facilitator)

P1. Yes with the card you don't feel the, parting with it- No not as much

P3. Yeah

P2. Not as an emotional parting like I know it's gone obviously but not a kind of a real thing.....

So cash is more.....(Facilitator)

P1....more protective feeling – want to keep it safe

With the cash.....(Facilitator)

P3. Yeah- More responsibility with the cash because you get that realistic my hard money earned is disappearing

P3. Yeah so the experience is actually more heightened either way when you are using this cash and we are talking about this luxury situation.

P2. Exciting!!

Exciting? (Facilitator)

P3. Yeah, Yes a bit of a rush

P2. Yes – sort of - feels like I am in control. I think heightens is a really good word

P3. You can be a bit naughty with the cards because you don't have the absence of that feeling there's more responsibility I reckon

5.6: Discussion

This Chapter addresses the question: *Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?* The information supplied by the participants reported here suggests that for them it does.

For this study- the most relevant comparisons are those when the value of the token is the same. There is however some interesting observations between the cash based tokens. Certainly the represented value between the \$20 and \$100 notes is a factor; the reason for the attributes is not wholly explained by the difference in value. The \$20 is dependable, honest, hardworking, responsible and disposable. It is to be spent and to be spent without guilt or worry. It is easier to spend five \$20 notes than one \$100 note supporting the *Bias for the Whole* effect noted by Mishra *et al* (2006). The \$100 note is not to be 'broken'. The consensus is that once this happens it is easily spent. This support Raghurir and Srivastava's (2009) conclusion that the \$20 is fungible and the \$100 note is less so. Keeping the \$100 note whole is to conserve money. These viewpoints suggest a connection that is more than the value represented in the notes, because clearly five \$20 notes are the same as one \$100 note. But our schema of each is different and, given the value is the same; the physicality of the token must be a consideration.

One interesting point to emerge is that all the token forms are deemed comfortable -and this may be linked to the fact that they represent value. However both the \$20 note and the \$100 in the debit card are hardworking, dependable and 'easy-going' but the the \$100 note represented wealth and value. The \$20 note and the \$100 in the debit card are deemed 'common'. This is probably because they are omnipresent in the wallet - but the \$100 is rarer. This may be the reason it is imbued with different characteristics - again usage perhaps forming the schema.

Where the value is held constant but the form of the token is different their sentiments vary. The list of comments in Exhibit 5.7(f), attribute the notes to 'being' something and thus the own something tangible.

- *It is just when I can hear coins I think I have actually got money. I feel richer, but then I know that's not right*

Having a \$100 note, makes some people feel richer than \$100 stored in the card. When they hand over the note they are giving something away, as one quote demonstrates:

- *It is tangible whereas although the card is a tangible item what is inside the card or the background of the card in the bank is unknown*

The influence of the token on awareness of spending and money management is clearly evident and the differences are marked. Simply, when using cash awareness of spending is heightened, as expressed by sentiments such as:

- *I really see the cash going out of my pocket when I spend*
- *I really notice how much I have spent, I really try to track my purchases but never with a card*
- *Yeah, because it's visible and I spend it and I feel it's less but in the card it doesn't really feel like that*

With cash how much is spent is known, but not it seems with a card:

- *And it's just a number on a (eftpos) screen isn't it?*
- *More likely to spend more money with card*
- *Although I might probably notice more, maybe I might be more conscious of a budget if I had cash in my wallet because I would think I will just try and spend the cash*

Whilst some participants expressed a sense of sadness at parting with money there is also a sense of 'justice' associated with handing over the money and this sense of righteousness is heightened when they pay by cash. Also apparent is the importance of the type of purchase. If the product is a luxury or an indulgence, a pleasurable purchase, the parting with cash is equally pleasurable, and indeed as some participants point out- 'exciting'. So whilst there is this notion of heightened regret with the parting of cash this may not be true of all purchases. Though Zellermyer (1996:1) uses the term pain he says in effect that it describes the *emotions* that people experience when paying, he does not discount the idea of pleasant/positive emotions. Though Zellermyer made this observation, it has not been explored by subsequent researchers, who have for the most part, presumed pain.

The sense of sadness with parting with cash was most prevalent theme of discussion. Participants acknowledged this sadness with a sentimental nostalgic feeling of loss of something of value. They concur that this sadness is somewhat different experience, when a card is used for a transaction.

Participants feel money as gift in the form of cash is preferred over a direct debit. Cash conveys a personal and closeness whereas money as gift received in debit card seen as cold and impersonal. The consensus is that money deposited into a bank account is utility money and does not evoke emotional attachment to the gift. This supports Belk and Wallendorf, 1990, findings that cash remains sacred and money as gift in debit card becomes profane.

5.7: Proposition One Evaluation

The overall conclusions from the information supplied by the participants of the focus group sessions is that there is enough evidence to conclude, at least from the sentiment of these participants, that **Proposition One** is supported: *the cognitive and emotional elements that people associate with the payment modes does indeed differ*. There is also evidence that the participants' perceptions of how they keep a mental tally of expenditures differ across cash and electronic card payment modes. The evidence for the proposition that the perceptions of the price- benefit analysis of expenditures will vary across cash and debit card payment modes is equivocal. Though evidence is not strong at least two or more people in each focus group did express the thought that they got more enjoyment out of the purchases paid by cash; but this was only in the context of 'special' purchases. However a few did express a general discontent with purchases when they used their debit card. There is evidence that people perceive their ability to tally expenditure is better when they use cash. For example, participants voiced in focus group that:

- *I really see the cash going out of my pocket when I spend cash*
- *I really notice how much I have spent, I really try to track my purchases but never with a card*
- *Yeah, because it's visible and I spend it and I feel it's less but in the card it doesn't really feel like that*

With cash how much is spent is known, but not with a debit card. Following quotes provide evidence in support that mental tally of expenditures do differ across cash and debit card payment modes:

- *And it's just a number on a (eftpos) screen isn't it?*
- *More likely to spend more money with card*
- *Although I might probably notice more, maybe I might be more conscious of a budget*
- *if I had cash in my wallet because I would think I will just try and spend the cash,*

- *I don't feel that when I see the statement oh yes that's what I spent that on and that was a good deal any maybe that wasn't maybe I shouldn't have spent money on that.*
- *debit card or smart card you run the risk of going into debit because you see something you like and you can get it but there are repercussions later on so with cash its really straight forward and simplistic and uncomplicated*

5.8: Conclusion

In essence, the payment mode is a tool that facilitates the transfer of something of value with both parties in agreement. The task for this study is to determine if the tool used to affect the transfer, independent of the value attached influences perceptions and thus how the transfer is experienced. In doing so, it is assumed that the tools act as anchors. As outlined in Chapter Three, anchoring is a cognitive bias in which decisions are made based on an initial 'anchor.' Essentially, it is a process by which memory recall, state change or other responses become associated with (anchored to) some stimulus, in such a way that perception of the stimulus (the anchor) leads by reflex to the anchored response occurring. The value is embodied in the tool and the physical nature of that tool and our continued interaction allow cognitions and emotions to develop. So the physical nature of cash, a token where the value is demarked, clearly allows us to have an immediate experience of the 'value'. Electronic cards do not have this property. Whilst they represent a link to a stored resource, there is no immediacy of value. Hence the notion of transparency and the related notion of decoupling have credence and as evidenced by the participants, do impact on mental accounting (see Soman 2003). The physical factor of payment mode explains why transparency and decoupling of payment experience influence our emotional state, not necessarily an experience of pain but an experience of a number of emotions also dependent on the context and purchase situations.

Exhibit 5.7 Key Themes Identified

Exhibit 5.7 (a) AWARENESS OF SPENDING

- I remember what I spent on my cash but wonder where I spent my EFTPOS card but if it's a hundred dollar note I go oh yeah I spent that at that shoe shop.
- Yeah, because its visible and I spend it and I feel it's less but in the card it doesn't really feel like that.
- I really see the cash going out of my pocket when I spend
- I check the price before buying anything if I have cash
- Because little batches of five dollars here and ten dollars there I forget about Yeah and suddenly I look at my account and there nothing in there. Just doesn't feel as real
- Like what did I buy with that, I can't even think – like I spent this and later it doesn't add up to that but I guess with a debit card because I can go back to the internet banking I can actually see I spent this here and this here and there is I guess a written record. I mean I can keep receipts but I just usually keep them in my wallet
- yeah I tend to notice it afterwards I think oh I had a hundred in there and I think what have I done with those four other twenties there is only one left
- No because it just disappears so fast electronically you never actually have the money physically- there's more accountability with physical money- I remember where I have spent a note. You can see it diminishing with the actual note where as unless you are checking on line or whatever every day you don't see that. It's a false sense of freedom and elbow room to spend a bit more of your own money so that's why it feels weird.
- I really notice how much I have spent I really try to track my purchases but never with a card I done have a track after that
- That's true I am more likely to spend thirty dollars on a credit card than the twenty dollars in my wallet
- I don't feel a when I see the statement oh yes that's what I spent that on and that was a good deal any maybe that wasn't maybe I shouldn't have spent money on that.
- I feel like I are on more of a budget so I tend to notice more smaller things cost and what I have left whereas with a credit card I just spend it and not too worried about a budget
- I really notice how much I have spent I really try to track my purchases but never with a card

Exhibit 5.7 (b) MONEY MANAGEMENT

- Well if I've got the extra money then I would rather use the card because it doesn't matter if I go over because it won't be declined and I am more likely to spend more money
- Yeah I don't think I have difference from what I spend and how much I spend whether it is cash or debit card, eftpos its only eftpos I carry. I'll still search for the bargains I'll still compare prices, I'll still try and get as many items as I can for my money regardless of whether it is a hundred dollar note or a hundred dollars I am spending on my eftpos card.
- And its just a number on a screen isn't it?
- Perhaps I have that feeling of sadness sometimes at the end of the month when I do my internet banking
- Its like drawing out a hundred dollars in twenty dollars notes at the start of the week seems more budget conscious
- Although I might probably notice more, maybe I might be more conscious of a budget if I had cash in my wallet because I would think I will just try and spend the cash,
- if I have cash I would think more about saving like think for saving or I have to save something I have only twenty left now if I have cash but if I have EFTPOS I don't think about saving I just oh I will pay in my next pay.
- Resentful (*card use*). It is out of horrible necessity that I have to use it to buy stuff.
- I feel worried that I can see it going with the debit card it is at the end of the month where as with the cash I need to keep track of what I are actually doing with it.
- Well if I've got the extra money then I would rather use the card because it doesn't matter if I go over because it won't be declined and I am more likely to spend more money and not total it in my car
- More likely to spend more money with card
- I also find it more uncomplicated because if your if your using say a credit card or a debit card or smart card you run the risk of going into debit because you see something you like and you can get it but there are repercussions later on so with cash its really straight forward and simplistic and uncomplicated
- you said something a bit like that before it's (*cash*) a known measure
- I don't feel that when I see my statement Oh yes that's what I spent that on and that was a good deal and maybe that wasn't Maybe I shouldn't have spent my money on that

Exhibit 5.7 (c) LIQUIDITY

- if I had cash in my wallet because I would think I will just try and spend the cash, I feel like it disappears. If I have cash in wallet then suddenly its gone.
- I find with cash i would want to spend the entire lot Even if I had \$2 left and that would be for a toy for my daughter, Its for spending
- I feel like it disappears. If I have cash in wallet then suddenly its gone.
- I if I had cash in my wallet because I would think I will just try and spend the cash,
- If I have cash in my pocket I go Umm treat

Exhibit 5.7(d) SECURITY

- I worry about the safety of cash like I put it down my top if I have got my EFTPOS card there's no problem as no one can get access anyway but if its cash you are never going to get it back.
- You also run the risk of someone giving you incorrect change like um you know like when its electronic its all very straightforward and kind of
- Not as good as if it was a hundred dollars in my wallet. Somehow the tangible having the hundred dollar note in wallet makes I feel safe like I can't, I'm not sure it feels more valuable to me, for some reason like an asset
- I only have cash in my wallet I only think about it that in getting rid of that you don't want all that change in your wallet or all those notes because you might lose them and the fear is always there of losing them.
- I don't like to carry, I had to bank about five hundred and something dollars for plunked the other day and just the thought of carrying all that cash. I thought if someone grabs my bag that's gone but If you've got a card you just ring the bank and cancel it and you are ok

Exhibit 5.7(e) GIFT

- yeah my mother in law always sends hard cold cash in the post. Wow, I know it always seems but it always seems to get here she quite often sends a hundred or hundred and fifty bucks...wahoo because you think I can go spend that and you know its for you and you can go and do what have a facial or something frivolous. But then she started sending via Visa debits, the fun lost.
- Cash because if I got one hundred dollars cash for gift I feel happy and I want to spend something I want to buy something I never buy and if one hundred dollars in the card it just stay there for my if I go to restaurant I just spend it different if one hundred dollars cash I want to buy something I can
- If someone put a hundred dollars in my bank account I know it would go on bills but I know that if I was given a hundred dollars I would go, wow I can actually buy myself something really nice.

- **Exhibit 5.7(f) PHYSICALITY** I squirrel away hundred dollar notes you know as a safety valve Yeah
- So what does that represent to you that when its in intact like that what does it represent to you? (member of the groups asks) suppose wealth Yeah- Security- a back up plan
- It's interesting isn't it cause with a hundred dollar note one of my feelings about it is it could get lost I want to save it I want to put it away I don't want to spend it cause I could just easily spend it put it in my bank account cause otherwise I will buy something with it
- True - Cash doesn't decline
- I feel like I am parting with something if I hand over cash
- But then once again I spend it more readily but I can feel it and it is portable and I have the coins rattling around and even when I was younger if I had coins I felt more richer than if someone gave I \$2 notes or something.
- It is just when I can hear coins I think I have actually got money. I feel richer but then I know that's not right
- In my drawer at home I have a fifty dollar note that I have kept for three months since I sold something on trade me and in that time I have had plenty of twenties through my wallet but the fifty is really special and I keep it for something special, I don't know what but
- I like looking at a \$100 note.
- It is tangible whereas although the card is a tangible item what is inside the card or the background of the card in the bank account is an unknown.
- I feel richer. If I can actually touch or feel it or hear coins in my purse I feel rich. With a debit card or anything else, using EFTPOS, if I can't see it it doesn't seem as real.
- I hand over a twenty and I get three dollars twenty back in little bits and coins
- Its just more tangible than when I hand over a card and I just get a small piece of paper back
- I think with the debit card when I see the statement it just seems more like a transaction just and I don't really think of it as something I really had and that I don't have any more. Whereas with money when I hand over money I feel like I am giving something away.
- Yeah, I would feel richer having the \$100 note than I would having \$100 in my cash card.
- I would be more likely to spend it that on something more frivolous than I would money in my cash card.
- You asked if we saw these cards as having value with a hundred dollars yeah it still feels like a hundred dollars
- There is more control because I see it is almost real
- Yeah because you can see it you know you are spending money
- There is a tangibility to it like there is a because its weird isn't it because it feels more physical than that, feels more physical than that

Exhibit 5.7(g) EMOTION

- if I have five hundred dollars in like five hundred dollar notes I feel sort of embarrassed and because when people see it like at the supermarket they think you have more money than you really have or its is flashy like hundred dollars notes.
- People will come around and they will give you like fifty bucks or twenty bucks or a hundred bucks. Its quite exciting for a while cause I never ever have cash suddenly I have got a hundred bucks in my wallet so I just gradually go through it and I feel a bit sad when its gone.
- Well because its real money you actually feel like you are spending real money so you sometimes get that little bit of guilt.
- You can see the pile of notes diminishing where as you can't when you use electronic money you can't see that you can physically see that.-Its an emotional attachment to the cash And it's a familiarity too like its familiar like its measure is knowable
- We still use cash at our house but because my husband is a middle easterner they are kind of known for pulling out a roll of money and you know he likes to have cash and but I don't like having like hundred dollar notes I am quite happy with fifties and twenties
- I feel the pleasure in spending it but I also feel like a sadness that once you have handed it over that its gone but whereas with the debit card you don't feel that emotional for me its just I never had it in my hands so I don't feel the loss

Exhibit 5.8. Quotes for PMP Scale.

If I had \$100 in my debit account

I would be reluctant to use the money to pay for a low cost item (e.g. something under \$5)

I would be reluctant to spend it

Swiping card is easy and quick. At times I simply forget what I bought yesterday. I also do not have emotional attachment to money in debit card. I work hard to earn this money spend it fast and again work to earn more.

It seems \$100 in debit card is desperately waiting to be spent than the \$100 note. The card can't be broken up for one purchase and the rest to be spent on something else. Feels like that it can't be lost/stolen as easily.

I would feel confident

When I use debit card, I am carefree about the money, even the card has lost. It is also easy to use everywhere in New Zealand.

I can use debit cards internationally and on the Internet without having to have a credit card.

I would feel uneasy

I think that money in debit card is intangible money stored somewhere that I have no idea. I know it is my money but I have no control over it. If the infrastructure breaks down I might lose it. I do feel uneasy about it.

I would feel secure

When I have \$100 in debit card, I feel secured so it provides security.

Feels like that it can't be lost/stolen as easily.

I feel safe with some backup money. \$100 in debit card provides me with not much to worry about losing it. Money in debit card is safe and secured.

When I use debit card, I am carefree about the money, even the card has lost. It is also easy to use everywhere in New Zealand.

I would feel relaxed

The words that I can associate with my feelings, thoughts and emotions about \$100 in debit card is Internet, richness, books, and easy. I feel relaxed that my money is safe it will not be lost

I check my account balance regularly to know the balance and budget my spending accordingly. I feel relaxed about not paying interest on borrowed money and peace of my mind that I don't have debt.

I would feel affluent

When there is \$100 in debit card it usually feels like money for household grocery. It's kind of relaxed and casual. Because it's invisible, it runs out quietly and is easygoing. It does not produce the impression of wealthy/affluent as compared to cash.

I would not be conscious of how much I spend if I used a debit card to pay for purchases

It is practical and sensible whereas Eftpos spits out my accumulated savings without me noticing.

I wouldn't be as aware of spending it as I would be with cash.

I will have some kind of illusion that I have more money in my account but know it's not real.

A bit secretive, I don't know what the balance is; it isn't as upfront as cash. It is difficult to keep track of money coming and going.

I do feel money in debit card is unreal and kind of intangible. It is hard to keep track of my spending if I am not fully aware of my spending habit.

If I had a \$100 note in my wallet I would feel uneasy

Cash \$100 gives a feeling of wealthy and I am uneasy that I will spend unwisely that I could easily be robbed off or money can be stolen.

I think of cash/notes in my wallet as 'problem solvers'

\$100 Cash is enough to buy groceries for two days so problem solver and comfortable.

Cash helps solving problems; can be used in many situations; generally enough for making purchases of foods ran out; just right for everything; won't be rejected because of smaller denominations and changes.

\$20 note is problem solver, value, traditional, hardworking, and casual. It may solve some problem, like buying milk and coffee.

I am more likely to buy less necessary items when I use a debit card to pay for items

When I know I have \$200 in my cheque account I'd more likely to buy less necessary items and go over the limit.

Using my debit card to pay for purchases is pleasurable

I feel money in debit card more valuable and less easy to blow it than cash does. Shopping is more pleasurable I don't need to think much what I have or for tomorrow, I just simply enjoy the moment of shopping.

With debit card don't see the money going out, it's easy to blow out in the weekends

Having money in a debit card is safer than having it in a wallet

I would feel a bit safer to carry a debit card than having notes in my wallet or pocket. I would still be price conscious and add up the total as I shop.

\$100 in debit card is dependable, multitasking, restrained, responsible, and active. Good feeling of security, knowing it there.

Using a debit card helps me manage my budget/ money

Smart/debit card allows controlling my budget and keep my spending within my means rather than indulging myself in luxury when I can't in reality afford to do so.

\$100 in debit card means that I have money in bank account but this just numbers.

I am more likely to use my debit card and not cash to buy luxury items

I'd be inclined to waste the money on luxury items rather than worrying about my budget.

I buy more things with debit card as it feels comfortable at the time of purchase, though might regret later.

Smart/debit card allows controlling my budget and keep my spending within my means rather than indulging myself in luxury when I can't in reality afford to do so.

I will not buy any luxury item and basic only with cash; I would only buy those items that are necessary rather than stockpiling.

If I had a \$100 note in my wallet I would feel confident

I feel confident when hold \$100. I like \$100. I think holding \$100 note makes me feel more positive about my life.

\$100 note is confident, stylish, quality, wealthy, and power. Also when shopping I can choose more stylish/quality products which makes me feel confident in my life.

\$100 note is attractive, confident, fashionable, fun seeking, and expensive. It's a combination of how I would feel with a \$100 note in my hand, and the qualities that I attribute to people who throw them around.

\$100 note is attractive, confident, wealthy, happy, and expensive. \$100 note in my wallet gives me confidence and choice to make me happy.

I feel that high heeled shoe describes \$100 cash as people who wears those shoe are confident, have goals in life and enjoy power and status.

I often feel angry when I check my debit card statements

When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left. I hate to check balance, it simply hurts me.

It is practical and sensible whereas Eftpos spits out my accumulated savings without me noticing.

I buy more things with debit card as it feels comfortable at the time of purchase, though might regret later.

I hate to check balance, it simply hurts me.

'I cut up (destroyed) my credit cards and do not use them anymore, because I was spending to much and didn't save anything.'

If I had a \$100 note in my wallet I would consider it spent

Feels like a lot of money but know it would be spent very quickly without being able to have much to show for it. I will pay for a number of small items that I need to think once; Afterward, I feel it's gone and try to justify where I spent \$100.

It is good feelings to have \$100 cash in wallet. It will be broken once I purchase items and then spent on small essentials probably over two weeks. Possible I will use this money to pay for child care.

I would feel that \$100 cash is convenient and easy to use, and can be spent quickly.

My feelings, thoughts and emotions regarding \$100 note is food and supermarket. Generally this is the amount I spend on grocery shopping weekly. Often I take out cash \$100 from ATM for my weekly grocery shopping and try to stick to it.

It is good feelings to have \$100 cash in wallet. It will be broken once I purchase items and then spent on small essentials probably over two weeks.

Using cash to pay for purchases helps be reduce my spending

I see cash \$100 as my personal saving.

\$100 cash means fun and excitement of possessing the money. I withdraw cash to control my spending behaviour. Small amount of cash in wallet also makes feel secured and happy.

When I am holding cash \$100 note, I feel excited, I am holding money; \$100 cash in my possession which brings possibilities of doing something for myself and my family.

Holding \$20 cash means restriction to spending, it hurts when I spend it. It is ready cash.

Holding \$100 cash makes me feel yum. It is easier to understand and keep track of spending mainly because it is tangible.

Good, restricts my expenditure will find something for \$200 or close to not much lower i.e. up to \$200, then I might make a game out of how under \$200 I can go, that is smart shopping

I normally use a debit card to pay for the majority of my day to day purchases

When I think about \$100 in debit card, the words that come to my mind is EFTPOS, shopping, food, new shoes for my daughter, and every day.

\$100 in debit card. I use it every day.

I will be excited about having \$100 money. It is my money, I have earned it. I see value rather than cash or debit card.

I think of my debit card as a 'problem solver'

Attributes of \$100 in debit card is problem solver, independent, confident, value, alterative. It is solution to a problem. I have control over it. I use \$100 in debit card as budget tool.

Attributes of \$100 in debit card is problem solver, relaxed, value, comfortable and casual. It helps solving small problems. It can be used for small purchases conveniently. It is valuable but lacks transparency.

If I had a \$100 note in my wallet I would feel relaxed

When I am holding cash \$100 note, I feel excited, I am holding money; \$100 cash in my possession which brings possibilities of doing something for myself and my family. I really feel relaxed. I need worry and stress about money for the moment. Money in wallet makes me feel relaxed and no tension

I compare prices when I use cash to pay for my purchases

It is no different than paying by cash - although I may feel that if I didn't spend as much on the groceries what was left over would be extra savings on top of the possible savings from the cheque account. I suppose my feelings or attitude to this would depend on whether I was saving for something particular at any given time and therefore wanted to spend up the saving process. However if I got into a supermarket with a list I generally stick to it.

I would feel a bit safer to carry a debit card than having notes in my wallet or pocket. I would still be price conscious and add up the total as I shop.

I would check prices closely, only get essentials. Look for budget products, probably a quick shop.

I'd try to spend as close to \$200 as possible (\$199.99). In the cash scenario, I might feel pleased if I spend \$190, and then had \$10 for something during the week. I'd make a very careful shopping list and take a calculator. I'd probably spend quite a bit of time checking brands, per amount etc. to get the best deals. I'd be ruthless and there would be no treats. Other than the smaller amount to spend on the debit card seems the same as cash.

I will spend the same way as I use debit card.

If I had a \$100 note in my wallet I would be reluctant to spend it

I will buy essential and day to day items using cash; however, I will not spend too much, just buy grocery for the week. I will make sure I have enough money left over to pay for utilities (water, electricity). If I have \$100 I would most likely to save it. Cash makes me feel like saving as I see it.

I think \$100 cash is more physical, tangible and makes me feel rich, excited and I want to keep this money as it is without breaking. Breaking \$100 hurts when it is for small purchases.

\$100 in debit card is same as cash but have to be careful not to overspend

If someone gave me a \$100 note as a gift I would spend it on something special

Cash \$100 received as gift. I will use the money to buy things for my children. May be I will deposit the money in my child's bank account. Depending on my financial situation I might use this money to pay bills.

I will be embarrassed to think that my mother thinks I am going through financial hardship. On the other hand I will thank her for such a sweet thought.

I will be very pleased and appreciate this gift to buy something special for myself. It is warm and appreciation.

Cash \$100 received from my mother as gift would make me happy. I will indulge myself to alcohol & drinks; well it will be time to party. I will make sure I have \$ 20 left over for my hangover feed.

I will be thankful to my mother for giving me \$100 cash as gift. It is also nice and thoughtful of my mother. Next I will think about what I can buy for myself with this gift money. I might have a decent hair cut with this money.

The word that comes to my mind associated with cash \$100 gift is generous, beauty treatment, useful, and wanted.

If I receive \$100 cash as gift from my mother is a gesture of generosity. I might feel guilt spending the money on myself so I will spend on my child to buy baby clothes.

\$ 50 cash received as gift is like token money waiting to be spent. I will buy a nice top for myself.

I will feel lucky, thankful, needed, generous, surprised and personal to receive \$100 cash as gift from my mother.

Spend that \$100 in buying earrings and jackets.

I would use the money to go out to a café with my niece or one of my sisters.

When I receive Cash \$100 as gift I straightaway feel joy. I think it is special and could be spent on dining out. It also reminds me of thank you to the person, gratitude towards the giver and I will definitely use that money to treat myself.

That's lovely. I'll buy some clothes and show them to you on Sunday, or perhaps shoes for my baby.

I will be grateful that my mother is thoughtful to think that I am missing out of treat and this \$100 can be used to buy treat for myself. First thought will be what treat I should get. Do I need to keep the money separate and tell her later on what things I bought? Overall I will be surprised and excited.

When I receive \$100 cash as gift, I am thankful to the giver and happy to put with other money together to spend on necessities.

\$100 cash gift from my mother will annoy me initial as she got me again. However, I will be pleased to receive it and spend the money to buy something special for me and my family

I feel great. I need to put this \$100 aside to buy something in particular with it. Otherwise if I put in my wallet it will just disappear in the lot of other money i.e. household spending.

If I had a \$100 note in my wallet I would feel assured

Cash \$20 is not the assured possessions but can be used for a bit of cheap fun such as takeaways, DVD etc. on the other hand if I have \$100 note in my wallet I do feel assured unless the note is broken

I feel sad when I use my debit card to pay for purchase

When I have cash I know how much I have before I go shopping and how much I have afterwards. I can see what I have spent. But with a debit card I don't know. You don't have the same feeling. I generally feel guilt and as a consequence sad.

If a gift of \$100 were deposited into my debit account I would probably not use it to buy something special

I will not regard \$100 direct debited to my account as gift. This amount of money will be lost within my savings and after someday I will forget about it.

\$100 as gift in my account from my mother has no emotional attachment. I will be angry as this undermines my financial situation. It is just a number in the A/C.

The word that comes to my mind associated with \$100 direct debited to my account as gift is disappeared, not tangible, forgotten, boring and impersonal.

A debit card does not restrict how much I spend

I would purchase my normal amount of shopping and any remaining amount would stay in the account untouched.

When I am holding this debit card with \$100 in it makes smile and thinking about what I could spend it on.

When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left. I hate to check balance, it simply hurts me.

If there was no option of overdraft I would behave and feel restrained and will probably shop carefully.

Feels less restrictive, can go over if I need to so can be a bit more carefree and get some extras if I see them.

I try to control my spending, as otherwise I would overspend with my card.'

With cash I can feel how much I have spent, with a debit card, I do not ... encourages spending

Feels less restrictive, can go over if I need to so can be a bit more carefree and get some extras if I see them.

Debit card gives me an impression of overspending buy goods that I really do not need. I think money in debit card fulfils want rather than basic need.

Using a debit card to pay for transactions reduces the joy of shopping

When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left. I hate to check balance, it simply hurts me. Debit card payment dulls the joy of shopping also cash makes me think whether the purchase is value for money when I am handing out the physical cash.

I am more likely to overspend when I use a debit card

\$100 in debit card is stylish and happy but will be worried about over spending.

\$100 in debit card is same as cash but have to be careful not to overspend.

Holding this debit card and thinking about \$100 stored in it gives me an impression of overspending -buy goods that I really do not need.

I think money in debit card fulfils want rather than basic need. Swiping card is easy and quick. At times I simply forget what I bought yesterday. I also do not have emotional attachment to money in debit card. I work hard to earn this money spend it fast and again work to earn more.

I will spend more money than the budget. I wouldn't be as aware of spending it as I would be with cash.

It's not like that you are spending real money. Much easier and less to think about when you just swipe debit card.

Sometimes I will make a mistake and spend more than 100 and then I have to organise my account.

I like the sensation I get when I hold a \$100 note in my hand

Holding \$100 cash makes me feel yum. It is easier to understand and keep track of spending mainly because it is tangible.

Debit cards are modern also not factored

My feelings towards \$100 in debit card is freedom, access, credit, spend, and money.

I suggest more of a business world, more complex and allows for more active/multifaceted lifestyle.

If I had a \$100 note in my wallet I would feel secure

Small amount of cash in wallet also makes feel secured and happy.

I like the restraint I feel when I use cash to pay for my purchases

Holding \$100 cash makes me feel yum. It is easier to understand and keep track of spending mainly because it is tangible

I feel sad when I use cash to pay for purchases

When I use cash I see the money diminishing it makes me feel sad but I tend be more cautious how I spend my money.

If someone gave me a gift card of \$100 I would spend it on something special

I can tell straight way this would be odd thing for her to do. I think this would be a bit invasive perhaps, as though she is trying to help me out of financial trouble. I will be still grateful for her gesture but \$\$ will get swallowed up in my account and I would have to make much more effort to get a treat for myself.

I am happy to receive the gift card but is less exciting as the meaning of gift is diminished. I will probably spend this money on other necessary purchases or paying bills.

The gift card seems to be of lesser value although they both have same monetary value.

I'd prefer the smart card over the \$100 in debit though. Smart card allows controlling my budget and keep my spending within my means rather than indulging myself in luxury when I can't in reality afford to do so.

I don't like to use cash as it reduces the pleasure of shopping

When I use cash I see the money diminishing it makes me sad but I tend be more cautious how I spend my money.

Swiping card is easier than parting with actual cash. There is something with cash that makes me retain it for long, but I know I will use it anyway.

It hurts me to give my money to someone. Again, when I spend it for necessity I feel rewarded.

Holding \$20 cash means restriction to spending, it hurts when I spend it. It is ready cash.

I think both are same in term of value but I derive more pleasure using cash as opposed to using debit card to pay for something.

Cash reduces the pleasure of the shopping experience make me think more about the items you put in the trolley.

I restrict how much I spend when using cash to pay for my purchases

Debit card feels less restrictive, can go over if I need to so can be a bit more carefree and get some extras if I see them.

By using cash it's easy to control the budget, also it saves on transaction costs. I tend to feel bad after the purchase. It's convenient to use EFPOS but it incurring transaction fees and it's easy to go over the budget.

I withdraw cash to control my spending behaviour. With cash I would spend less; watch the budget more closely

The thoughts of cash \$100 is associated with spending limit, dollars & cents, and Chin-Chin sound of money.

If I had a \$100 note in my wallet I would feel affluent

Cash \$100 gives a feeling of affluent/wealthy and will spend unwisely and I could easily be robbed off or money can be stolen

I will associate cash \$100 note as wealth, affluence, cocaine, extravagance, and not secure or safe. Flashing \$100 cash to me is sign of wealth; many illegal activities are centered on cash transaction as there is no trace of transactions being carried out. Cash \$100 gives a feeling of affluent and will spend unwisely and I could easily be robbed off or money can be stolen.

I feel rich when I hold \$100 cash in my hand. I think the real money in hand makes me feel that way. Chinese love to carry bundles of notes around themselves as it gives them the feel of their wealth and also they can flash notes around them.

Wealthy: For me it still represents a show of wealth, a bit flashy. Hard working: It reminds me of hard work to earn that amount.

'My parents always used cash. You know, the older generation still prefer cash.' 'Cash is still king... a businessman with many cash notes in their wallet shows that he is affluent. It shows that he is rich. Cash is still, king.'

If a gift of \$100 were deposited into my debit account I would probably use it to buy something special

\$100 direct debited to my account as gift is bit cold gesture; there is no personal or emotional attachment to it. This gift gesture is like trying to win brownie points by calling to kill the surprise. This gift giving gesture means obviously not really that close to me.

I like cash better.

It's not the same as cash as the money gets lost in the abyss of direct debits and automatic payments. I am not going to spend it straight away so it's more difficult to attach a physical/emotional meaning to the money.

If my mother deposit \$100 in my account later tells me about this gift, it will be another transaction to my account. It is formal and business like I would find it very strange; it wouldn't feel like a present, but more like she owed me money.

\$100 direct debited to my account means swallowed into hold with other money in the account. I still thank you the person but loses the appeal as I won't see it.

It will be lost among other transactions. I will have no special attachment to this money. It is just a number in account.

When I receive money in my account it gets mixed up with other money and over time I might forget that I received \$100 from my other and will spend on things such as paying bills.

I feel that it is for bills, to spend on useful items. It's not the same as cash as the money gets lost in the abyss of direct debits that I set for monthly bills (electricity, phone, water). In this case I am not going to physically spending the cash so it's more difficult to attach a physical gift with this type of money.

Yes but \$100 in card feels more fun, intangible. It feels a little like 'bill paying' when it arrives in the account. I would set it aside, and withdraw \$100 cash from ATM to derive the feeling of gift. I think physical gift makes more personal and is pleasurable.

I will withdraw the money to buy gift for myself as it was intended for, otherwise it would more than disappear and I would never notice it really being there.

When I receive \$100 in my account as gift, I find it difficult to track in my account. I'll have to spend it soon, so I don't lose track of it.

If I have cash in my wallet it is money to be spent

To me cash in wallet is to spend on day to day item (e.g. coffee, snacks) and will be spent on small items.

I'd take \$200 out from ATM, I will spend the same way I spend cash \$200. Buy a big shopping 50 on meat 50 on fruit/veggies, \$100 on all other things.

When I hold cash in my hand is the money for food, supermarket, lunch, and ATM-cash machine

I will go to the ATM and take cash out to buy groceries and the monthly left in my account I will transfer in to savings account and the money left after spending for groceries.

Cash is old-fashioned

My feelings and thoughts regarding \$100 cash is traditional way of living. I do not want to carry huge amount of cash as I feel unsafe

Cash \$100 is pink in colour, old fashioned, and patterned.

I think cash \$100 note is old fashioned, shopping small value items and is dirty as it passes through many hand in circulation.

Cash is traditional way of paying.

I tend to think I have more money in my debit card account than I actually have

I will have some kind of illusion that I have more money in my account but know it's not real.

I do feel money in debit card is unreal and kind of intangible. It is hard to keep track of my spending if I am not fully aware of my spending habit.

\$100 in debit card is not real

I think that \$100 debit card is intangible money stored somewhere that I have no idea

I always lose track of my money in account when using debit card, but I do have an idea of approximate value but not exact numbers

\$100 in debit card is not serious. Better to save then spend it; it seems less somehow than I have \$100 cash in hand.

I normally use cash to pay for the majority of my day to day purchases

Slippers describes \$20 note because of the attribute of being common and day to day living

Cash (coins/notes) can be used everywhere

I tend to use cash occasionally but love the feelings of carrying \$100 cash everywhere. Some places do not accept cards but cash is accepted everywhere

I use it now and then and I love the feel of carrying actual cash rather than swiping cards all the time.

Cash is acceptable everywhere especially, when you do not have the option of using EFTPOS terminal or ATM machine.

If I had a \$20 note in my wallet I would consider it spent.

I think cash \$20 is very disposal and once broken reduces in value.

To me \$20 cash is low value and will be spent on small items.

When I hold \$20 cash I feel it is common and I do lots of buying with cash; it vanishes before I start realising where I spent the money. It also reminds me of stack of bill.

I won't think much to spend cash \$20 to buy unnecessary things

I don't have to analyse every twenty dollar I spent. I realise that \$20 doesn't go very far-so it's a small expenditure. \$20 note is a bit of mental threshold when evaluating being thrifty vs. having a blow out.

\$20 is standard amount to carry in wallet. It is common and is intended for everyday use. I think cash \$20 is very disposal and once broken reduces in value.

\$20 cash means day to day expenses. Once withdrawn is the money to be spent on necessities.

Most places will accept a debit card

I often use cash to buy vegetables from local shops where they only accept EFTPOS or cash. I prefer using cash as it is acceptable everywhere.

Debit card is easy to use everywhere in New Zealand

\$100 in debit card as I often use it (by me anyway).

When I hold this \$100 in debit card, I feel that it is very familiar and I use it every day. It also feels like a credit card, without having the credit limit but I can use it buy online such as air ticket.

I would restrict my spending if I could only pay by cash

Holding \$20 cash means restriction to spending, it hurts when I spend it. It is ready cash.

\$20 cash means day to day expenses. I like the colour green. I tend to withdraw cash from ATM to control my spending behaviour.

When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left.

Holding \$20 cash means restriction to spending, it hurts when I spend it. It is ready cash.

\$100 cash means fun and excitement of possessing the money. I withdraw cash to control my spending behaviour. Small amount of cash in wallet also makes feel secured and happy.

Stressed because I would have to check all the prices and not go over \$200. I would spend less; watch the budget more closely. I will also worry about carrying cash.

I buy fewer unnecessary items when I use cash to pay for my purchases

I would stick strictly to the shopping list. But I would reassess at the checkout & if went over would send non essential items back. This is my actual weekly budget and I can stick to it would not buy any wine that week though.

I would buy cheaper options for example home brands and wine on specials. I would also need to take a calculator to make sure you did not surpass two hundred dollars

When I can only use cash to pay I look for discounted items

I'm glad because I'm spending cash. I know how much should spend. These days grocery is expensive so I can do the grocery shopping. I buy what I need, and what's on special.

I will no but any luxury item and basic only; I would only buy those items that are necessary rather than stockpiling.

I would check prices closely, only get essentials. Look for budget products, probably a quick shop.

A debit card provides convenience, ease

I feel that \$100 in debit card provides convenience, ease, and safety in day to day life. However, I do not like the option that some else can watch over my shoulder where and what I spend the money.

I tend to over- estimate the amount of money I have in my debit card account.

A bit secretive, I don't know what the balance is; it isn't as upfront as cash. It is difficult to keep track of money coming and going.

I think people get addicted to swipe card and indulge in materialistic life

I think that \$100 debit card is intangible money stored somewhere that I have no idea

I have no emotional attachment to \$100 in debit card; I do not feel excited. It is just numbers to me.

\$100 in debit card is not real

I do feel money in debit card is unreal and kind of intangible. It is hard to keep track of my spending if I am not fully aware of my spending habit.

I feel unsafe and at risk if I have a lot of money in my wallet

- *I hardly use cash unless going to a flee market.*

I would feel a bit safer to carry a debit card than having notes in my wallet or pocket. I would still be price conscious and add up the total as I shop.

Using my debit card to pay for purchases helps reduce my spending

- *The money in card can't be broken up for one purchase and the rest to be spent on something else. Feels like that it can't be lost/stolen as easily.*

I have control over it. I use \$100 in debit card as budget tool.

If I had a \$100 note in my wallet I would be reluctant to use the \$100 note to pay for a low cost item (e.g. something under \$5)

- *For me cash or debit card is same as both stores value.*

- *It does not hurt breaking \$20 note compared to \$100 note. I often carry around \$20 in my wallet to buy low cost item.*

\$100 cash is powerful, because of the value and its purchasing power. \$100 cash is useful and always desirable. Make me feel want it more and more. I will not break this loved possession, once broken it's gone.

I am not conscious of how much I spend when paying by cash

I'd find it difficult to add up the purchases while moving around the supermarket; might make it a bit more stressful than usual. I'd be more conscious of buying the cheaper brands and try to find items on special (even though \$200 is more than I normally need).

When I hold \$20 cash I feel is common and I do lots of buying with cash; it vanishes before I start realising where I spent the money.

Feels like a lot of money but know it would be spent very quickly without being able to have much to show for it. I will pay for a number of small items that I need to think once; Afterward, I feel it's gone and try to justify where I spent \$100.

I won't think much to spend cash \$20 to buy unnecessary things.

Using a debit card gives me higher social status

A debit card is a modern alternative that is easy to carry in small wallets, so very stylish. It's reliable and suggests the owner is open-minded to try new things they are the innovators in the society.

To the casual observer, the debit card would look like a credit card; therefore, feel more stylish, expensive and wealthy.

I use cash to buy cheap items

\$20 note is not serious, relaxed, pleasure, comfortable, and casual. \$20 notes seem to be in ready supply, money machines mainly issue them. Cash \$20 is not the assured possessions but can be used for a bit of cheap fun such as takeaways, DVD etc.

I'd find it difficult to add up the purchases while moving around the supermarket; might make it a bit more stressful than usual when I use cash. I'd be more conscious of buying the cheaper brands and try to find items on special (even though \$200 is more than I normally need).

Pump is the shoe I will use to describe cash \$20 note. A pump is cheap and can be used in many occasions without even noticing.

A pair of sandals from the warehouse best describe \$20 note, it is cheap and carefree.

I will describe \$20 note as a pair of sandal and a cheap sneaker.

If I have to spend money in cash I will definitely check price of the thing and I will calculate how much I am going to spend.

Debit cards are more sophisticated than cash (coins/notes)

It reminds me of professional and prompt services, modern lifestyle and freedom.

By u cards are fashionable.

When I hold \$100 in debit card are regulations regarding electronic transactions. It reminds me of professional and prompt services, modern lifestyle and freedom.

I check my debit account balance regularly

I check my account balance regularly to know the balance and budget my spending accordingly. I feel relaxed about not paying interest on borrowed money and peace of my mind that I don't have

Generally I buy necessities using debit card. It reminds me of checking account balance before I go for major purchases.

When I use debit card I tend to spend more and I simply get trackless of how much I have spent and how much is left. I check my balance regularly to be in control of spending.

When I think about \$100 in debit card it reminds me of checking account balance before I go for major purchases.

I spend more when I use my debit card

\$100 cash is enough to use for some activities or fun, but short for those serious fun or activities. It's cash, have the itchy feeling to spend it quickly.

When I use my debit card, I know it is my money but I have no control over it.

If I have to use my debit card, maybe, I will not check the price of the thing and just buy it. Because I will think that "oh I have money in my account I don't have to worry about it"

When I think about \$100 in debit card first thing comes to mind is grocery shopping. Generally I buy necessities using debit card. It reminds me of checking account balance before I go for major purchases.

It seems \$100 in debit card is desperately waiting to be spent than the \$100 note.

It is exciting feeling that I want to spend it quickly.

I don't need to think too much before I am shopping. I will walk around the supermarket and pick the things I need. I would buy milk, bread, child's milk powder, nappies, meats, vegetables, may be also cleaning powder.

I can over spend. I wouldn't be as careful about checking the prices as I have a backup plan with the overdraft or extra dollar in account.

100 stored in debit card is dependable easy going, lazy, comfortable, and casual.

It's not like that you are spending real money. Much easier and less to think about when you just swipe debit card.

Using cash to pay for purchases is pleasurable

I think the value of cash is important to me compared to \$100 in debit card. I think both are same in term of value but I derive more pleasure using cash as opposed to using debit card to pay for something.

\$100 note is aggressive, fun seeking, wealthy, and expensive. The \$100 notes are red and I generally don't see them very often. I would only ever have one if I had to pay for a large item in cash.

People use to flash them around long time back. But now most people pay by EFTPOS/ debit card. There is something a bit novel and fun about \$100 note.

Cash reduces the pleasure of the shopping experience make me think more about the items you put in the trolley.

Chapter Six

Development and Validation of the Payment Mode Perception Scale

6.1: Chapter Overview

This chapter describes the development and testing of a psychometric measure that will allow the examination of the question: *Is there a link between the cognitive and emotional elements that people associate with payment modes and payment mode choice?* It will also enable identification of the most influential factors that are associated with payment mode choice.

As stated in the previous chapters, the aim of this study is not to gather the cognitions and emotions that are experienced at the point of, and at the time of paying, but to ascertain perceptions of payment modes that will provide insight into possible cognitions and emotions experienced when paying for transactions.

For practical and testing reasons, this is best done by a psychometric instrument. The scale development follows the guidelines advised by Netemeyer Bearden and Sharma (2003:14): Steps One and Two - construct definition and item generation; Three and Four – Testing and Finalising.

The intent is to gauge reliability by undertaking a test-retest with participants drawn from a different population to that of the main study. A final validation process is conducted on the questionnaires completed by the participants of the payment mode study.

The chapter commences by justifying the needs for such an instrument and then describes the item development process and instrument validation.

6.2: Justification

The development of such a scale is deemed necessary for this study as existing scales that measure perceptions of money do not examine perceptions of the payment modes that facilitate money transfers. Existing scales measure aspects such as relationship between perceptions of money and specific personal attributes such as; sensation seeking, risk taking, materialism and ethics (Zuckerman, 1983; Wong and Carducci, 1991; Sciortino, Huston and Spencer, 1987; Richins and Rudmins, 1994; Tang, 1992, 1993, 1995). Other scales measure clusters of traits, e.g., the Furnham, Kirkcaldy and Lynn, (1994) Money belief and behavioural scale (MBBS). This scale is composed of 60 belief statements that are represented by six factors: power, retention, security, inadequacy, effort and ability. The money importance scale (MIS) Mitchell, Dakin, Michel and Gray (1998) measures value and importance of money, personal involvement with money, time spent thinking about financial affairs, knowledge of financial affairs, comfort in taking financial risks, skills in handling money and money as a source of power and status. The single attempt to link emotions with payment mode use is that by Thomas et al. (2010) where pain of payment was assessed by the use of a happy-sad face scale and a list of words identifying negative associations. No reliability/validity factors are reported and the researchers assume pain indicated by choosing a sad face and words associated with pain.

6.3: Pre Test One

The psychometric properties of the scale were examined via a test-retest process using the same (matched) sample Netemeyer et al. (2002:44). 331 third year or postgraduate students participated in the first test and three weeks later 259 of the 331 completed a revised questionnaire. To minimize the social desirability we included an additional uncertain column in the five point scale (Worcester and Burns, 1975 and Garland 1991). Participants were asked to provide a unique identifier, preferably their female parent's first name, to match their response in test two. De Vellis (2003) and Netemeyer et al. (2003) suggest examining reliability based on the correlation between a set of scale items. The idea is to assess "temporal stability", that is, how consistently the correlations of items across two administrations of the scale to the same individual should represent the extent to which the

latent variable determines the observed score. The test-retest reliability result is shown in Pretest Two (Table 6.5)

The 67 items were evaluated on a five-point Likert type scale. A key issue in using the Likert-type scale is to generate sufficient variance among respondents for subsequent statistical analysis (Hinkin, 1995). The reliability of responses increases steadily from a 2-point scale to a 5-point scale (Lissitz and Green, 1975, cited in Hinkin, 1995) then levels off. Therefore, a 5-point scale is more appropriate to generate sufficient variance of response. An additional column (uncertain) was added that asked participants to 'tick' if they were uncertain about particular item(s) thus minimizing the social desirability response, as suggested by Worcester and Burns (1975) and Garland (1991).

6.3.1: Pre Test One - Item Generation

The data from the focus groups sessions is the main source for item generation. Responses to workbook and focus group transcripts were entered into Microsoft Word as a rich text file and then imported into Nvivo version 9.0. The method of analysis of the data follows the procedure set by Coffey and Atkinson (1996), that is, generation of codes derived from data, frequent revisions of the coding, grouping of the codes and the development of categories and finally the development of themes from the data. To maintain process rigour, the data was coded into nodes and then trees by one researcher and verified by a second researcher. The types of themes identified are listed in Exhibit 6.1, 6.2 and 6.3. Initial coding classified the themes and generated items. The transcribed content that supports each of the payment mode associations and forms the basis for the items is shown in Exhibits 5.8.

Exhibit 6.1: Payment Mode Associations

Example Quote	N	Example Quote	N
Calculated shopping with cash	20	Debit card links over spending	18
Indifferent to cash or debit payment mode	16	Cash is physical and reliable	14
Debit card means savings	14	Debit card encourages spending	13
Money in debit card is numbers and value	13	Money in debit card unreal	11
Cash makes me feel rich and happy	10	Cash is more acceptable	9
Debit card means modern life style	9	Without worry shopping with card	8
Cash is traditional	7	Cash means savings	7
Cash is opportunity & relief	7	Cash limits spending	7
Debit card is safe & secure	6	Debit card –overestimate	6
Breaking \$ 100 cash note hurts-pp	2	Cash means unwise spending	5
I hate to check balance	5	Debit card feels less restrictive	5
Cash more control over money	5	Cash reduces the pleasure of shopping	3
Cash is real	3	Smart Card feels lesser value	1
Hurts spending cash	2	People get addicted to swiping card	2
Debit encourage spending on luxury item	13	Debit card dulls the joy of purchase	2
Cash seen as token waiting to be spent	1	Debit card means online shopping	1
Can't keep track of spending with debit card	1		
No control over debit card spending	1		

Exhibit 6.2: Qualitative Themes

Themes	Cash – 33 Item	Debit Card – 34 Items
Positive Emotions	8	8
Money as Gift	3	3
Money Management	5	5
Spending Control	6	6
Behaviour	3	4
Negative Emotions	8	8

An initial pool of 90 items was generated from the 63 themes shown in Exhibit 5.8 and via extra discussion with university students and staff. Some items were removed because of duplication and non relevance. The items were then re-assessed by a panel comprising university students and staff and focus group participants. Focus group members were included as Maxwell (2005:110) recommends “respondent validation to minimise interviewee reactivity”, so items were re-assessed by the focus group participants. This resulted in an initial set of 67 test items (see Exhibit 6.3).

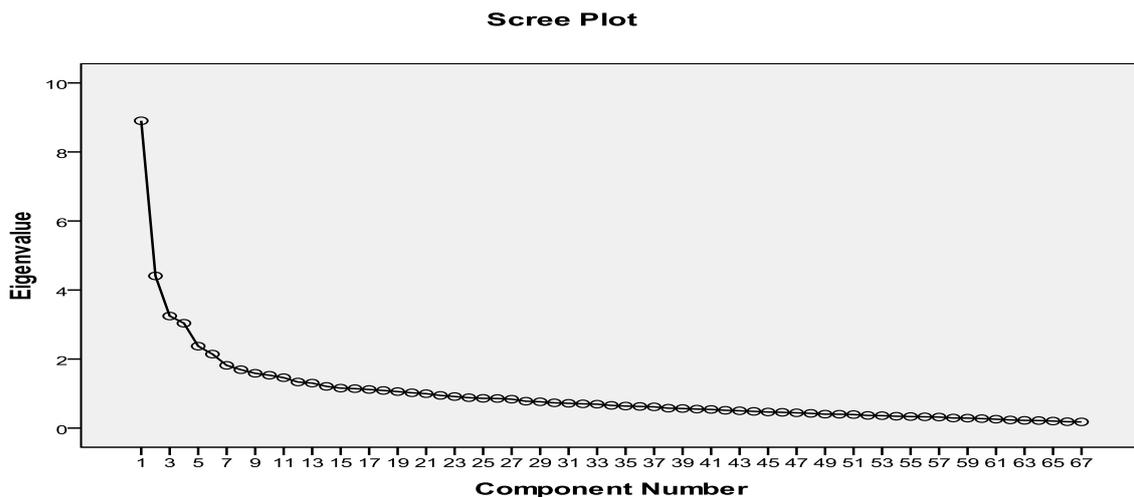
6.3.2: Pre Test One - Data Preparation

Normality of dataset was assessed via skewness and kurtosis. Twenty items out of sixty-seven reveal skewness and 9 items show kurtosis above the normal range exceeding the acceptable level of ± 2 for skewness and ± 3 for kurtosis. Data transformation using square

root (sqrt) was applied to normalize the data. This procedure resulted in normalized data that was suitable for analysis. Hair, Black, Babin, Anderson and Tatham (1998) suggest that when the sample size is more than 80, the effect of non-normality is minimised. After transformation, five items still exceeded the acceptable range, but were retained because the sample size is large enough to offset the effects of non-normality (See Appendix. 4 p.20).

Exploratory factor analysis indicate Bartlett's test and Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) test within the acceptable range. The correlations between 67 items were significant at $p < 0.001$ level. The overall Kaiser-Meyer-Olkin was 0.810 also within the range (greater than .70). The principle component method with oblique rotation was chosen for dimension and level analysis.

Figure 6.1: Scree Plot



The scree plot shows Eigenvalues against number of factors. The initial factor solution resulted in 10 factors solutions with Eigenvalues greater than one. These 10 factors explained 51% of variance with a significant drop is noticed from seventh to six factors thus a six factor solution can be considered appropriate (See Figure 6.1).

Exhibit 6.3: Pre-Test One -Scale Items

1. I use cash to buy cheap items
2. I check my debit account balance regularly
3. Using cash to pay for purchases is pleasurable
4. Cash is old-fashioned
5. Cash (coins/notes) can be used everywhere
6. Most places will accept a debit card
7. When I can only use cash to pay I look for discounted items
8. If I had a \$100 note in my wallet I would be reluctant to use the \$100 note to pay for a low cost item
9. Debit cards are modern
10. I like the restraint I feel when I use cash to pay for my purchases
11. A debit card does not restrict how much I spend
12. I think of cash/notes in my wallet as 'problem solvers'
13. I am more likely to use my debit card and not cash to buy luxury items
14. Most places will accept cash
15. Using a debit card saves time
16. I use cash to pay for the majority of my day to day purchases
17. I think of my debit card as a 'problem solver'
18. I restrict how much I spend when using cash to pay for my purchases
19. I am not conscious of how much I spend when paying by cash
20. Using a debit card gives me higher social status
21. Debit cards are more sophisticated than cash (coins/notes)
22. I spend more when I use my debit card
23. If I had a \$100 note in my wallet I would feel affluent
24. I like using cash to pay for my purchases
25. If a gift of \$100 were deposited into my debit account I would probably use it to buy something special
26. I tend to think I have more money in my debit card account than I actually have
27. If I had a \$20 note in my wallet I would consider it spent.
28. I would restrict my spending if I could only pay by cash
29. I buy fewer unnecessary items when I use cash to pay for my purchases
30. A debit card provides convenience, ease
31. I tend to over-estimate the amount of money I have in my debit card account.
32. I feel unsafe and at risk if I have a lot of money in my wallet
33. Using a debit card to pay for transactions reduces the joy of shopping
34. I am more likely to overspend when I use a debit card
35. I like the sensation I get when I hold a \$100 note in my hand
36. If someone gave me a gift card of \$100 I would spend it on something special
37. If I have cash in my wallet it is money to be spent
38. I like the sensation I get when I hold my debit card in my hand
39. I don't like to use cash as it reduces the pleasure of shopping
40. I like having cash (coins/notes) in my wallet
41. If I had a \$100 note in my wallet I would feel secure
42. I feel sad when I use cash to pay for purchases
43. If I had a \$100 note in my wallet I would be reluctant to spend it
44. If someone gave me a \$100 note as a gift I would spend it on something special
45. If I had a \$100 note in my wallet I would feel assured
46. I feel sad when I use my debit card to pay for purchase
47. If a gift of \$100 were deposited into my debit account I would probably not use it to buy something special
48. If I had a \$100 note in my wallet I would feel uneasy
49. I am more likely to buy less necessary items when I use a debit card to pay for items
50. I prefer to use cash to pay for the majority of my day to day purchases
51. Using my debit card to pay for purchases is pleasurable
52. Having money in a debit card is safer than having it in a wallet
53. Using a debit card helps me manage my budget/ money
54. If I had a \$100 note in my wallet I would feel confident
55. I often feel angry when I check my debit card statements
56. If I had a \$100 note in my wallet I would consider it spent
57. I prefer to use a debit card to pay for the majority of my day to day purchases
58. Using my debit card to pay for purchases is pleasurable
59. If I had a \$100 note in my wallet I would feel relaxed
60. I compare prices when I use cash to pay for my purchases
61. I would not be conscious of how much I spend if I use a debit card to pay for purchases
Consider that you have a debit card with \$100 available to use and tell us how you would respond to the following statements:
62. I would be reluctant to spend it
63. I would feel uneasy
64. I would feel confident
65. I would feel secure
66. I would feel relaxed
67. I would feel affluent

Exploratory Factor Analysis revealed 32 items that formed six factors (see Table 6.1- *positive emotions, negative emotions, status/pleasure, spending control, usage/behaviour, and money as a gift*). The overall scale reliability was good (Cronbach Alpha .892). Fifteen items (see Exhibit 6.4) had loadings below 0.30 and so were eliminated (Churchill, Ford and Walker, 1974). Sixteen were considered borderline in that they scored 0.38 and above so because of the potential richness of these items they were retained for the next test. One item was reworded -this process was managed via a focus group session comprising experts and student participants. This process resulted in a 49 item scale for Pre-test Two.

Table 6.1: Exploratory Factor Analysis –Pretest One

Positive Emotions (8)	Absolute Loading	Status/pleasure (6)	Absolute Loading
1. \$100 note feel assured(Q39)	.728	1. Sensation with debit card(Q30)	.703
2. I would feel relaxed(Q66)	.727	2. Debit card gives me higher social status(Q2)	.624
3. I would feel secure(Q65)	.717	3. Cash reduces pleasure of shopping(Q31)	.589
4. \$100 note feel confident(Q50)	.714	4. Debit card sophisticated(Q4)	.579
5. I would feel confident(Q63)	.714	5. Debit card pleasurable to use(Q46)	.566
6. \$100 note feel relaxed(Q59)	.693	6. Debit Card Problem solver(Q58)	.563
7. \$100 feel secure(Q34)	.600		
8. I would feel affluent(Q67)	.535		
Spending control (7)		Usage/Behaviour (3)	
1. Cash reduces spending(Q55)	.646	1. I prefer to use debit card(Q57)	.756
2. Cash restricts amount spending(Q33)	.617	2. Use cash majority(Q56)	-.747
3. Cash only restricts spending(Q17)	.596	3. Debit card convenient(Q20)	.428
4. \$100 note reluctant to spend(Q37)	.545		
5. Buy unnecessary items cash(Q18)	.502	Negative emotions (5)	
6. Use cash look for discount(Q19)	.487	1. I tend to think I have more in card(Q12)	.674
7. I would be reluctant spent(Q62)	.463	2. Angry checking bank statement(Q51)	.645
Money as Gifts (3)		3. Overestimate money in debit card(Q21)	.628
1. \$100 gift in account(Q9)	.808	4. \$100 note in wallet consider spent(Q52)	.566
2. \$100 cash as gift (Q38)	.801	5. Cash in wallet consider spent(Q10)	.467
3. Gift card \$ 100 gift(Q28)	.747		

Exhibit 6.4: Deleted Items in Pretest One

1. I use cash to buy cheap items
2. I check my debit account balance regularly
3. Using cash to pay for purchases is pleasurable
4. Cash is old-fashioned
5. Cash (coins/notes) can be used everywhere
6. Most places will accept a debit card
7. Debit cards are modern
8. I like the restraint I feel when I use cash to pay for my purchases
9. A debit card does not restrict how much I spend
10. I think of cash/notes in my wallet as 'problem solvers'
11. I am more likely to use my debit card and not cash to buy luxury items
12. Most places will accept cash
13. Using a debit card saves time
14. I use cash to pay for the majority of my day to day purchases
15. I think of my debit card as a 'problem solver'

6.3.3: Pre Test One- Internal Consistency Assessment

Reliability for internal consistency is based on correlations. The internal consistency of the scale is evaluated via examining inter-item correlations, items-to-total and Cronbach alpha. According to De Vellis (2003) internal consistency reliability is the measure of homogeneity of the items within the scale. The logic is that the relationships among items are logically connected to the relationships of the items to the latent variable; therefore, high inter-item correlations suggest that items are all measuring the same thing. De Vellis (2003) and Netemeyer, et al. (2002) suggest evaluating the item-to-total correlations for internal consistency assessment. An item-total correlation test checks whether an item is consistent with the average behaviour of the other items in the scale. A Pearson's correlation below .30 indicates low correlation. The most common test for internal consistency is Cronbach's Alpha (Netemeyer, *et al.*, 2003). Cortina (1993) cautioned not to apply alpha when assessing dimensionality because interrelatedness of items within a scale does not imply unidimensionality (the existence of one latent construct underlying a set of items) (Hattie, 1985). What constitutes minimum acceptable alpha level is debated, however, "a widely advocated level of adequacy for alpha is .70" (Netemeyer et al. 2003, p.58). EFA and scale reliability analysis shows that not all dimensions were equal or above 0.70 levels alpha but overall average alpha value meets the acceptance (See Table 6.2).

The correlations within dimensions (positive emotions, negative emotions, control spending, status/pleasure, money as gift and behaviour/usage) show all items are correlated moderately (See Table 6.5). There is no clear guideline to what constitutes moderate *inter-item* correlations. For example, Robinson, Shaver, and Wrightsman (1991) advocate average inter-item correlations of .30 and Peterson (1994) ask for .31 and an overall average alpha of .80. Clark and Watson (1995) consider average inter-item correlations of .15 to .50 across construct to be acceptable. The items-to-total correlation (the correlation of the item and the sum score of the other items) show all items within dimensions are internally consistent. Correlations of less than 0.30 for *item-to-total* correlation are considered weak (de Vaus, 2004). The "behaviour/usage" factor shows weak correlations between the items, less than .20 and below. These items were retained at this stage because they identified payment mode perceptions.

Table 6.2: Inter-Item and Item-to-Total Correlations

Positive Emotions (8)	Items-to-total	Q39	Q66	Q65	Q50	Q63	Q59	Q34	Q67
Q39	.661	1							
Q66	.638	.425**	1						
Q65	.652	.405**	.674**	1					
Q50	.628	.587**	.319**	.379**	1				
Q63	.672	.419**	.622**	.683**	.455**	1			
Q59	.585	.500**	.429**	.329**	.507**	.360**	1		
Q34	.505	.562**	.246**	.251**	.467**	.243**	.571**	1	
Q67	.505	.286**	.442**	.525**	.330**	.529**	.223**	.221**	1
Inter-item		0.45	0.46	0.43	0.44	0.38	0.40	0.22	
Control Spending (7)		Q55	Q33	Q17	Q37	Q18	Q19	Q62	
Q55	.480	1							
Q33	.485	.399**	1						
Q17	.440	.339**	.332**	1					
Q37	.333	.228**	.259**	.204**	1				
Q18	.364	.296**	.230**	.307**	.097	1			
Q19	.432	.272**	.324**	.260**	.177**	.284**	1		
Q62	.271	.187**	.180**	.114*	.261**	.085	.189**	1	
Avg. inter-item		0.29	0.27	0.22	0.18	0.18	0.19		
Gratification (6)		Q30	Q2	Q31	Q4	Q46	Q58		
Q30	.536	1							
Q2	.447	0.337	1						
Q31	.400	0.343	0.262	1					
Q4	.406	0.308	0.319	0.217	1				
Q46	.452	0.436	0.267	0.232	0.253	1			
Q58	.438	0.314	0.284	0.289	0.258	0.309	1		
Avg. inter-item		0.35	0.28	0.25	0.26	0.31			
Negative Emotions(5)		Q12	Q51	Q21	Q52	Q10			
Q12	.573	1							
Q51	.431	.350**	1						
Q21	.534	.679**	.393**	1					
Q52	.355	.246**	.249**	.198**	1				
Q10	.308	.238**	.198**	.147**	.308**	1			
Avg. inter-item		.378	.267	.172	.308				
Gift Mode (3)		Q9	Q38	Q28					
Q9	.625	1							
Q38	.683	.604**	1						
Q28	.605	.505**	.580**	.567**					
Avg. inter-item		.554	.580	.567					
Usage/Behaviour (3)		Q57	Q56	Q20					
Q57	.221	1							
Q56	.045	.438**	1						
Q20	.229	.238**	.196**	1					
Avg. inter-item		.277**	.194**	.194**					

Table 6.3: Coefficient Alpha After Initial Item Purification

Constructs	Cronbach Alpha
Positive Emotions	0.859
Negative Emotions	0.683
Spending Control	0.699
Behaviour	0.687
Gift	0.795
Status/pleasure	0.713
Overall Average	0.739

6.4: Testing and Finalising: Pre-Test two

The item purification process in pre-test one resulted in 49 items standing the test of reliability (See Exhibit 6.5). Three weeks later the revised questionnaire was administered to 259 students who also participated in pre-test one. The sample size for pre-tests one and two show variable to observation ratios of 1:4.9 (67:331) and 1:5.8 (49:259) respectively. Flynn and Percy (2001) recommend a variable-to-observation ratio ranging from 1:4 to at least 1:10 for each set of scales to be factor analysed. Hair, Black, Babin, Anderson and Tatham (2006) suggest that at this sample size only loading of ± 0.50 or greater should be considered statistically significant.

Exhibit 6.5: 49 Item Scale in Pre-test Two

1. I am not conscious of how much I spend when paying by cash
2. Using a debit card gives me higher social status
3. Debit cards are more sophisticated than cash (coins/notes)
4. I spend more when I use my debit card
5. If I had a \$100 note in my wallet I would feel affluent
6. I like using cash to pay for my purchases
7. If a gift of \$100 were deposited into my debit account I would probably use it to buy something special
8. I tend to think I have more money in my debit card account than I actually have
9. If I had a \$20 note in my wallet I would consider it spent.
10. I would restrict my spending if I could only pay by cash
11. I buy fewer unnecessary items when I use cash to pay for my purchases
12. A debit card provides convenience, ease
13. I tend to over- estimate the amount of money I have in my debit card account.
14. I feel unsafe and at risk if I have a lot of money in my wallet
15. Using a debit card to pay for transactions reduces the joy of shopping
16. I am more likely to overspend when I use a debit card
17. I like the sensation I get when I hold a \$100 note in my hand
18. If someone gave me a gift card of \$100 I would spend it on something special
19. If I have cash in my wallet is money to be spent
20. I like the sensation I get when I hold my debit card in my hand
21. I don't like to use cash as it reduces the pleasure of shopping
22. I like having cash (coins/notes) in my wallet
23. If I had a \$100 note in my wallet I would feel secure
24. I feel sad when I use cash to pay for purchases
25. If I had a \$100 note in my wallet I would be reluctant to spend it
26. If someone gave me a \$100 note as a gift I would spend it on something special
27. If I had a \$100 note in my wallet I would feel assured
28. I feel sad when I use my debit card to pay for purchase
29. If I had a \$100 note in my wallet I would feel uneasy
30. I am more likely to buy less necessary items when I use a debit card to pay for items
31. I prefer to use cash to pay majority of my day to day purchases
32. Using my debit card to pay for purchases is pleasurable
33. Having money in a debit card is safer than having it in a wallet
34. Using a debit card helps me manage my budget/ money
35. If I had a \$100 note in my wallet I would feel confident
36. I often feel angry when I check my debit card statements
37. If I had a \$100 note in my wallet I would consider it spent
38. Using cash to pay for purchases reduce my spending
39. I prefer to to use a debit card to pay for the majority of my day to day purchases
40. Using my debit card to pay for purchases is pleasurable
41. If I had a \$100 note in my wallet I would feel relaxed
42. I compare prices when I use cash to pay for my purchases
43. I would not be conscious of how much I spend if I use a debit card to pay for purchases
Consider that you have a debit card with \$100 available to use and tell us how you would respond to the following statements:
44. I would be reluctant to spend it
45. I would feel uneasy
46. I would feel confident
47. I would feel secure
48. I would feel relaxed
49. I would feel affluent

6.4.1: Pre-Test Two- Data Preparation

Some of the items show skewness and kurtosis's values exceeding the acceptable level of ± 2 for skewness and ± 3 for kurtosis (See Table 6.4). The skewed items were transformed and normalized in SPSS by computing the square root (Sqrt) of each item to normalize weakly skewed items and the logarithm (Log10/Ln) of each items to normalize more strongly skewed items.

Table 6.4: Pre-Test Two – Skewness and Kurtosis Before Transformation

	Skewness	
1	I don't like to use cash as it reduces the pleasure of shopping	5.7
2	If I had \$100 not in my wallet I would be reluctant to spend	6.0
3	I am not conscious of how much I spend when paying by cash	4.5
4	I feel unsafe and at risk if I have a lot of money in my wallet	7.4
5	Having money in a debit card is safer than having it in a wallet	4.8
6	I prefer to use a debit card to pay for majority of my purchases	4.0
7	I feel sad when I use debit card to pay for purchases	-4.9
	Kurtosis	
1	I often feel upset when I check my debit card statement	3.66

The z-scores for detecting univariate outliers, and the Mahalanobis distance for detecting multivariate outliers, were computed. Mahalanobis distance suggests no outliers in data ($D^2/df < .001$). Hair et al (2006) suggest when the sample size is larger than 80, z-score exceeding 3 to 4 would be considered as outliers. The highest absolute standardized value (z-score) was 2.1016 and 2.79 (“If I had \$100 note in my wallet I would be reluctant to spend on lower value item) and (debit card is convenient to use). The first item relates to “Liquidity” dimension and the other to “Usage-Behaviour”. The item’s z-score is within the acceptable range of 3 to 4. The common acceptance is if a z-score is positive, it’s corresponding score is above (greater than) the mean. The items identified: “\$100 cash reluctant to spend on low value item” and “debit card convenient to use” indicate an interesting pattern - these items were rated higher and above the sample mean. This suggests a pattern of mental accounting (positive and negative motions) where denomination effect shows an individual is more reluctant to part with \$100 cash on small value items in daily purchases. Another interpretation could be the link between the representative and emotional value of one hundred dollars cash and convenience of debit card use.

6.4.2: Pre-Test Two - Internal Consistency Assessment

In terms of test-retest reliability the scale was re-administered to 259 people 2-21 days after its first administration. The first pre-test indicate overall reliability was Cronbach .892 and second pre-test was 0.843. The purpose of test-retest reliability shows how constant scores remain from one occasion to another. The rationale underlying reliability determinations of this type is that if a measure truly reflects some meaningful construct, it should assess that construct comparably on separate occasion (De Vellis, 2003).

In terms of test-retest reliability the scale was re-administered to 259 people 2-14 days after its first administration. Overall reliability for Pretest One was Cronbach .892 and the second Pretest was 0.843. The purpose of test-retest reliability is to show constancy of response across tests. The test-retest result shows a Pearson correlation of .699 with statistically significant responses. The rationale underlying reliability determinations of this type is that if a measure truly reflects some meaningful construct, it should assess that construct comparably on separate occasion (De Vellis, 2003).

Table 6.5: Assessing Test-Retest Reliability and Response Bias (Pre-Test 1 &2)

		Pretest One	Pretest Two	Cron Alpha	Sample	Mean Difference	t	Sig. (2-tailed)	Time elapsed between pre-tests
Pretest One				.892	331	2.905	- .516	.606	2-14 days
	Pearson Correlation	1	.699**						
	Sig (2-tailed)		.000						
	N	331	259						
Pretest Two				.843	259	2.977			15-19 days
	Pearson Correlation	.699**	1						
	Sig (2-tailed)	.000							
	N	331	259						

A formal test of response bias was adapted following the procedure suggested by Oppenheim (1966), cited in Gaur, Mukherjee, Gaur, and Schmid (2011). The test compares responses received in 21 days apart between Pre Test 1 and 2. The *t*-tests revealed no significant difference between the early and late respondents.

Churchill (1979) urges that before factor analysis is carried out, the coefficient alpha should be computed and the items not performing should be removed to avoid meaningless factor solution. Four corrected item-to-total correlations were identified near to zero, and these items are candidates for deletion. The deletion of the four items in Table 6.5 increased Cronbach alpha from 0.69 to 0.71.

Table 6.6: Corrected Item-to-Total Correlations

Items	Status	Items-to-total correlations
I am not conscious of how much I spend when paying by cash	Removed	-.01
I feel unsafe and at risk if I have a lot of money in my pocket	Removed	.006
If I had \$100 note in my wallet I would feel uneasy	Removed	.018
I prefer to use cash to pay for majority of my purchases	Removed	.035

Table 6.7: Coefficient Alpha Before Initial Item Purification

Constructs	Cronbach Alpha
Positive Emotions	.879
Negative Emotions	.640
Spending control	.624
Behaviour	.589
Liquidity	.790
Gift	.612
Status/pleasure	.640
Overall Average	.690

Table 6.8: Variance Explained and KMO & Bartlett Test

Dimensions	Initial Eigenvalues	
	Total	% of Variance
Positive Emotions	6.532	19.793
Usage/Behaviour	2.732	8.279
Negative Emotions	2.304	6.982
Spending Control	1.873	5.676
Money as Gift	1.719	5.208
Liquidity	1.369	4.149
Status/Pleasure	1.352	4.098
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.814	
Bartlett's Test of Sphericity	Approx. Chi-square	2725
	Df	528
	Sig	.000

The 45 items were examined to factor analysis suitability. This was done via Bartlett’s test and the Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) test. The Bartlett’s test show, when taken overall, the correlations were significant at $p < 0.001$ level (see Table 6.7) This suggests that the correlations matrix had significant correlations among at least some of the 45 items (Hair et al, 2006). The overall Kaiser-Meyer-Olkin was 0.814. Hair et al., (1998) suggest MSA of .70 as acceptable. The MSA value for 45 items range from .889 to .930.

EFA is often cited as the first step in scale development and item removal (De Vellis, 1991; Spector, 1992; Sweeney, Hausknecht and Soutar, 2000). EFA with oblique rotation was chosen for dimension and level analysis.

6.4.3: Pre-Test Two - Item Reduction and Exploratory Investigation of Dimensionality

Three criteria were adopted for item deletion in exploratory factor analysis. The first criteria were fulfilled via scale reliability analysis. The other two relate to checking communalities and absolute loading and cross-loading.

Criterion One: The communality of the variable should be above 0.50. The communality for a variable represents the amount of variance accounted for by the factor solution for that particular variable. A common norm is to consider that at least one-half of the variance of each variable must be taken into account. Therefore, items with communalities less than 0.50 were considered as not having sufficient explanation and were deleted. Following communality criteria of item reduction, three items were excluded from analysis (Table 6.8)

Table 6.9: Item Communalities less than 0.50

I am more likely to buy less necessary items when I use a debit card	.247
Using debit card helps me manage my budget/money	.132
I would not be conscious of how much I spend if I used a debit card to pay for purchases	.403

Criterion Two: All items that did not have an absolute loading of at least 0.40 on any factor were eliminated (Churchill, Ford and Walker, 1974). 6 items did not load in factor analysis.

Exhibit 6.6: Items id not Load in Factor Analysis

- | | |
|----|---|
| 1. | I am more likely to buy less necessary items when I use a debit card to pay for items |
| 2. | I prefer to use a debit card to pay for the majority of my day to day purchases |
| 3. | I tend to think I have more money in my debit card account than I actually have |
| 4. | I feel unsafe and at risk if I have a lot of money in my wallet |
| 5. | Using my debit card to pay for purchases is pleasurable |
| 6. | I would feel uneasy |

Criterion Three: Requirements of unidimensionality, items “should measure one factor or construct, and only this factor or construct” (Clark, Watson, 1995). Hair et al. (2006) suggest deleting the cross load item if the difference between the absolute value of the two loading is less than 0.25.

One item “If I had \$100 note in my wallet I would be reluctant to spend it” cross-load on Negative Emotions (0.484) and Control Spending (0.506) with absolute loading less than 0.25 were retained.

Five items were reworded and retained (Exhibit 6.7).

Exhibit 6.7: Items Reworded and Retained in Pre-Test Two

- | | |
|----|---|
| 1. | I am not conscious of how much I spend when paying by cash |
| 2. | I would not be conscious of how much I spend if I use a debit card to pay for purchases |
| 3. | A debit card provides convenience, ease |
| 4. | I don't like to use cash as it reduces the pleasure of shopping |
| 5. | I don't like to use cash as it reduces the pleasure of shopping |

14 items were deleted from the scale as they had either poor corrected item-to-total correlations, low commonalties or cross loading, suggesting these items generated more noise than information.

Exhibit 6.8: The Items that were Deleted in Pre-Test Two

- | | |
|-----|---|
| 1. | If I had a \$100 note in my wallet I would feel affluent |
| 2. | I buy fewer unnecessary items when I use cash to pay for my purchases |
| 3. | I feel unsafe and at risk if I have a lot of money in my wallet |
| 4. | I like having cash (coins/notes) in my wallet |
| 5. | If I had a \$100 note in my wallet I would feel uneasy |
| 6. | I am more likely to buy less necessary items when I use a debit card to pay for items |
| 7. | Using a debit card helps me manage my budget/ money |
| 8. | Using my debit card to pay for purchases is pleasurable |
| 9. | I prefer to use a debit card to pay for the majority of my day to day purchases |
| 10. | I would be reluctant to spend it |
| 11. | I would feel uneasy |
| 12. | I tend to think I have more money in my debit card account than I actually have |
| 13. | Using a debit card to pay for transactions reduces the joy of shopping |
| 14. | I feel sad when I use my debit card to pay for purchase |

6.4.4: Pre Test Two - Final Factor Analysis

Kim and Mueller (1978) suggest using principle components analysis and subsequent direct oblimin rotation with DELTA value set at zero to evaluate factor dimensions. Initial EFA revealed seven factor solutions. The EFA process included removing items indicated as unusable in the EFA, in addition to using Cronbach alpha and removing items with squared multiple correlations less than 0.40 and corrected item-to-total correlations of less than 0.50. Scale length was also optimized by removing the weaker items in favor of almost identical stronger items. Finally 29 items stand the test of scale reliability (Table.9). The constructs were identified capturing positive and negative emotions, usage/behaviour, spending control, gift, liquidity and status/pleasure dimensions. ($\alpha=0.844$) (KMO and Bartlett's test =.814, approx. Chi-Square= 1725, df. =528, Sig=0.000).

The initial Eigen value dropped from 1.35 (7th factor) to 0.819 (8th factor). The first seven factors explained 55% of variance, a significant drop of Eigen value from 7th to 8th factor justifies seven factor solutions.

Table 6.10: Factor Analysis- Pattern Matrix

Positive Emotions (9)	Absolute Loading	Status/pleasure (4)	Absolute Loading
1. \$100 note feel confident (Q36)	.797	Debit card higher social status (Q2)	-.720
2. \$100 in card feel confident (Q46)	.722	Debit card sophisticated (Q3)	-.704
3. \$100 note feel secure (Q24)	.721	Like the sensation to hold debit card (Q8)	-.678
4. \$100 note feel assured (Q28)	.714	Like having cash in wallet (Q23)	.420
5. \$100 note feel relaxed (Q42)	.702	Liquidity (3)	
6. \$100 in card feel affluent (Q49)	.693	Cash in wallet spent (Q21)	-.723
7. \$100 in card feel relaxed (Q48)	.677	\$100 in wallet spent (Q38)	-.698
8. \$100 in card feel secure (Q47)	.672	\$20 in wallet spent(Q11)	-.691
9. Like the sensation to hold \$100 note (Q19)	.597		
	.		
Money Management (5)		Usage/Behaviour (3)	
1. Cash reduces spending (Q39)	.734	1. I prefer to use debit card (Q41)	.734
2. Cash restricts spending (Q12)	.722	2. Debit card convenient (Q14)	.699
3. Spend more with card (Q4)	.717	3. Debit card Safer (Q34)	.625
4. I tend to overestimate in Debit card (Q13)	.695		
5. More likely to overspend with card (Q18)	.687	Negative emotions (2)	
		1. \$100 in card feel uneasy (Q47)	.699
		2. Feel sad using cash (Q25)	.638
Money as Gifts (3)			
1. \$100 cash as gift (Q27)	.846		
2. Gift card \$100 (Q20)	.818		
3. \$100 gift in account (Q7)	.783		

6.4.5: Pre-Test Two - Scale Reliability and Validity

Consumer researchers are in agreement that common method variance (attributable to the measurement method rather than to the construct) is a potential problem that threaten validity in behavioural research (Podsakoff, MacKenzie and Lee, 2003). The common method bias is a problem because they are a main source of measurement error. Bagozzi and Yi (1991) cited in (Podsakoff, MacKenzie and Lee, 2003) noted that main source of this bias is systematic measurement error. The source of systematic error can be attributed to the form of measurement (“content of specific items, scale type, response format and general context”) (Fiske, 1982, pg. 81-84). At a more abstract level, method effects might be interpreted in terms of response bias such as halo effects, social desirability, acquiescence, leniency effects or yea-and na-saying (Fiske, 1982, p.426). Podsakoff et al. (2003) advised that there are two primary ways to minimise and controls for method bias (a) the procedural design of the study (b) statistical controls.

Procedural remedies involve identifying predictor and criterion variables and minimising the bias through design of the study Podsakoff et al. (2003). One of the ways is obtaining data from different source on the scale item. Although the initial items came from two sources (the focus group sessions and from staff and students) most of the items were focus group sourced- but ultimately validated by group discussion with staff and students. The temporal, proximal psychological and methodological separations were introduced in the design of the study. For example, the Test-Rest of the questionnaire items had a three week gap period. A psychological separation was created via the use of a cover story and obscuring the main objective of the study. The response format was manipulated via change in the ordering of the items and presenting varying number of items. To minimize the social desirability we included an additional uncertain column in the five point scale (Worcester and Burns 1975 and Garland 1991). Another attempt to minimise the detrimental effect of common method bias is statistical remedies. The most commonly used technique is *Harman’s single factor test* (cf. Anderson and Bateman, 1997; Greene and Organ, 1973) this requires the factors to be unrotated this was done during the factor analysis and showed a seven factor solution.

6.4.6: Assessing Construct Validity

There several ways of demonstrating construct validity. The most common approach is Campbell and Fiske's (1959) MTMM approach. The construct validity assessment involves assessing convergent and discriminant validity of the scale items. But this was not used the procedure suggested by Fornell and Larcker (1981) was used.

There are a number of ways to demonstrate convergent validity via structural model correlations (SMC). The second via correlation- where inter-item and item to total correlations must be greater than .30 or above. Cronbach alpha of .6 or above indicates internal consistency of items and demonstrates convergent validity (See Table 6.2; 6.3; 6.5 & 6.6).

Discriminant validity can be demonstrated in several ways: correlation, factor and average variance extracted Fit index. The less stringent test is correlation (Straub, 1989). The third approach AVE. If the average variances extracted by the correlated latent variables are greater than the square of the correlation between the latent variables then discriminant validity obtains (Fornell and Larcker, 1981). Another way to test whether the factors discriminate from each other is to determine whether the manifest indicators are best represented by three, two, or one latent construct. This can be done via comparing ECVI and AIC indexes in CFA result. The lower the values of ECVI and AIC (taking into account chi-square and other fit indexes) for the test model shows evidence of discriminant validity.

Having established constructs of the scale, a confirmatory factor analysis (CFA) was run. Bollen (1989) suggest testing the factor model against a null model in which no factor is considered to underlie the observed variables, correlations between observed indicators are zero and variances of the observed variables are not restricted. Three separate CFA were conducted. First, both cash and debit card factors together, and individually (See Table 6.11).

- Seven factor solution
- Cash factor solution
- Debit card factor solution

Table 6.11: Confirmatory Factor Analysis: Pretest Two

Payment Mode	χ^2	<i>df</i>	χ^2/df	RMSEA	NFI	CFI	GFI	AGFI	SRMR
Null	2856	528	5.409	0.31	.000	.000	.434	.399	.294
7 factor	748	461	1.62	.049	.740	.877	.853	.821	.047
Cash									
Null	732	55	13.327	0.218	.000	.000	0.583	0.500	.400
3 Factor	49.93	41	1.217	.0290	.931	.9868	.966	.945	.038
D/Card									
Null	774	66	11.736	.204	.000	.000	.584	.508	.333
4 Factor	68.60	48	1.4290	.0407	.911	.970	.958	.931	.04

Fornell and Larcker (1981) present a method for assessing the convergent validity of two or more factors. Here, a researcher compares the AVE of each construct with the shared variance between constructs. If the AVE for each construct is greater than its shared variance with any other construct, convergent validity is supported. This procedure is adopted in this study to show convergent validity.

Discriminant validity was achieved via conducting a paired construct test (Jorsekog, 1971), and applying Fornell and Larcker (1981) technique. Another way to test whether the factors discriminate from each other is to determine whether the manifest indicators in CFA are best represented by three, two, or one latent construct. ECVI and AIC indexes in CFA result was compared to assess discriminant validity. The lower the values of ECVI and AIC (taking into account chi-square and other fit indexes) for the test model shows evidence of discriminant validity.

For this research, given resource constraints and sample size, the discriminant validity is demonstrated via Fornell and Larcker's (1981) partial least square (PLS) procedure, Bagozzi and Heatherton (1994) correlations method and CFA fit index (AIC and ECVA). PLS was chosen as the most appropriate statistical technique for assessing construct validity for two reasons: PLS is particularly well suited to small sample size, such as, sample size <300. The second reason is that PLS can be used where data is multivariate non-normal. As indicated, the data from this study is considered multivariate non-normal.

The first involves examining the construct reliability and validity of multi-item variables for perceptions of payment mode. Reliability of item was determined by examining the Cronbach alpha on individual items-to-total correlations; satisfy the threshold of 0.7 for each constructs. Test of composite reliability/convergent validity is necessary when multiple measures are

used to measure individual constructs. For each of the item, the closer the statistics to one is better, and a modest threshold is 0.70 and least is .50 (See Table 6.11).

Table 6.12: Demonstrating Convergent Validity in Pretest-Two

	Composite Reliability	Cronbach Alpha	Average Variance Extracted
Positive Emotions	0.80	0.87	0.75
Spending Control	0.50	0.62	0.52
Liquidity	0.70	0.79	0.65
Negative Emotions	0.64	0.69	0.70
Usage/behaviour	0.60	0.60	0.65
Status/Pleasure	0.65	0.60	0.66
Gift	0.61	0.63	0.73

Convergent validity is supported on composite reliability measure for PMP Scale though the “Spending Control’ dimension is slightly weak. The ‘Spending Control’ dimension captures the notion of mental accounting, a view well supported in behavioural economics literature. Another reason for retaining the spending control construct relates to the sample characteristics. These are young business students, highly familiar with card use *per se*. This construct needs further exploration on diverse samples as Churchill (1979) recommends re-examination of constructs for reliability and validity measures using independent and more diverse data set.

Fornell and Larcker (1981) suggest using average variance extracted to assess convergent validity. The average variance extracted (AVE) statistics clearly exceeded 0.50 for all dimensions; the highest being for “Positive Emotions” construct and lowest was on “Spending Control’. A threshold of greater than 0.50 is recommended (Chin, 1998; Fornell and Larcker, 1981). That is, 50% or more variance should account for each construct. This indicates acceptable convergent validity for the constructs (physicality, control, disposable, attribute and modernity).

The discriminant validity of the scale was investigated via two procedures. First, by ensuring that the correlation between constructs is less than 1 (Bagozzi and Heatherton, 1994). This is done by examining the confidence interval surrounding the estimate. If the correlation plus or minus two standard errors produces the value of 1, discriminant validity is not supported (Sweeney and Soutar, 2001, p.210). The correlations between constructs were estimated, the

highest correlations were between “Positive Emotions” and “Spending Control” dimension (.419). The associated confidence interval was .76 and .88 for the highest correlation.

Second, Fornell and Larcker’s (1981) discriminant validity test was conducted. This test requires examining correlations between constructs and comparing these to the square root of the AVE statistics. The average variance extracted for each construct should be greater than the squared structural path coefficient of the construct. In the present study the requirement is met for all pairs of constructs Table 6.12 clearly shows the square root of the AVE is greater than the correlations that are in the off-diagonal element, indicating acceptable discriminant validity for each constructs. The scale also demonstrates predictive validity because the standardized paths are greater than 0.2 and most of the loadings greater than 0.60 (Fornell and Larcker, 1981). Using this as a guide, the Perceptions of Payment Mode (PMP) measure is satisfactory in terms of its productiveness.

Table 6.13: Pre Test -Two -Discriminant Validity

	Positive Emotions	Money Management	Mentally Spent	Usage/ Behaviour	Gift	Gratification	Negative Emotions
Positive Emotions	.864						
Money Management	.259	.716					
Mentally Spent	.216	.094	.807				
Usage/ Behaviour	.170	.228	.317	.808			
Gift	.221	.232	.351	.125	.741		
Gratification	.317	.06	.123	.148	.340	.810	
Negative Emotions	.271	.271	.228	.340	.241	.341	.791

* Replaces 1's with Square Root of AVE for that latent variable. Square root of the AVE's in the off-diagonal > latent constructs

Exhibit 6.9: Pre-Test Items Removed from the 49 Item Scale

If I had a \$100 note in my wallet I would feel affluent
I like using cash to pay for my purchases
I buy fewer unnecessary items when I use cash to pay for my purchases
I feel unsafe and at risk if I have a lot of money in my wallet
I like the sensation I get when I hold my debit card in my hand
I like having cash (coins/notes) in my wallet
I feel sad when I use my debit card to pay for purchase
If I had a \$100 note in my wallet I would feel uneasy
I am more likely to buy less necessary items when I use a debit card to pay for items
Using a debit card helps me manage my budget/ money
I prefer to use a debit card to pay for the majority of my day to day purchases
Using my debit card to pay for purchases is pleasurable
If I had a \$100 note in my wallet I would feel relaxed
I would be reluctant to spend it
I would feel uneasy

The validation resulted in fifteen items being removed from the forty nine item scale and two reworded. It was thought that the reason the items *I tend to think I have more money in my debit card account than I actually have* and *Using a debit card to pay for transactions reduces the joy of shopping* were not performing, possibly due to wording issues. These were presented to the members of the focus group and colleagues. The consensus was that the items were clumsy and so they were reworded to: *I tend to over- estimate the amount of money I have in my debit card account*, and *using my debit card to pay for purchases is pleasurable* and retained

The final thirty four item scale was completed by the field study participants (Phase Three) and the validation process is described in the following section.

6.5: Field Study- Scale Validation Process

The purpose of this instrument is to capture the payment mode perceptions of the people who agreed to participate in Phase Three of this study. One hundred and eighty one participants from Phase Three of the study completed and returned the thirty-four item scale (Exhibit 6.10).

6.5.1: Scale Purification

The factor analysis was run on 34 items and offered a 10 factor solution. The item-to-total correlations were calculated for all dimensions. As in the first stage, items that created a sudden drop in the plotted item to total scale correlation pattern were dropped and these six items were excluded from the final factor set as the three factors containing these items were also below the recommended value of .70 (see Table 6.13). The items removed are:

I am not conscious of how much I spend when paying by cash

If someone gave me a gift card of \$100 I would spend it on something special

If I had a \$100 note in my wallet I would be reluctant to spend it

I compare prices when I use cash to pay for my purchases

I would not be conscious of how much I spend if I use a debit card to pay for purchases

Using cash to pay for purchases reduce my spending

Exhibit 6.10: The Thirty-four Item Scale

- | | |
|--|---|
| 1. | I am aware of how much I spend when I use cash to pay for purchases |
| 2. | Using a debit card gives me higher social status |
| 3. | Debit cards are more sophisticated than cash (coins/notes) |
| 4. | I prefer to use cash to pay for the majority of my day to day purchases |
| 5. | If a gift of \$100 were deposited into my debit account I would spend it on something special |
| 6. | I like the sensation I get when I hold my debit card in my hand |
| 7. | If I had a \$20 note in my wallet I would consider it spent |
| 8. | I would restrict my spending if I could only pay by cash |
| 9. | A debit card is convenient to use |
| 10. | I tend to over- estimate the amount of money I have in my debit card account |
| 11. | I spend more when I use cash to pay for purchases |
| 12. | I am more likely to overspend when I use a debit card |
| 13. | I like the sensation I get when I hold a \$100 note in my hand |
| 14. | If someone gave me a pre-paid gift card of \$100 I would spend it on something special |
| 15. | If I have cash in my wallet it is money to be spent |
| 16. | Paying by cash reduces the pleasure of shopping |
| 17. | If I had a \$100 note in my wallet I would feel secure |
| 18. | If I had a \$100 note in my wallet I would be reluctant to spend it |
| 19. | If someone gave me a \$100 cash as a gift I would spend it on something special |
| 20. | If I had a \$100 note in my wallet I would feel assured |
| 21. | Using my debit card to pay for purchases is pleasurable |
| 22. | Having money in a debit card is safer than having it in a wallet |
| 23. | If I had a \$100 note in my wallet I would feel confident |
| 24. | I often feel upset when I check my debit card statements |
| 25. | If I had a \$100 note in my wallet I would consider it spent |
| 26. | Using cash to pay for purchases helps me reduce my spending |
| 27. | I feel sad when I use cash to pay for purchases |
| 28. | If I had a \$100 note in my wallet I would feel relaxed |
| 29. | I compare prices when I use cash to pay for my purchases |
| 30. | I am aware of how much I spend when I use a debit card to pay for purchases |
| Consider that you have a debit card with \$100 available to use and tell us how you would respond to the following statements: | |
| 31. | I would feel confident |
| 32. | I would feel secure |
| 33. | I would feel relaxed |
| 34. | I would feel affluent |

Table 6.14: Summary of Final Results from Exploratory Factor Analysis – Field Study

Positive Emotions Debit Card (4)	Item-to-total	Absolute Loading	Cronbach
Q33) I would feel relaxed (\$100 D/Card)	.795	.854	.883
Q31) I would feel confident (\$100 D/Card)	.774	.826	
Q32) I would feel secured (\$100 D/Card)	.788	.806	
Q34) I would feel affluent (\$100 D/Card)	.626	.696	
Social and Personal Gratification (6)			
Q6) I like the sensation I get when I hold my debit card in my hand	.595	.743	.786
Q2) Using a debit card gives me higher social status	.603	.709	
Q21) Using my debit card to pay for purchases is pleasurable	.585	.590	
Q11) I spend more when I use cash to pay for purchases	.404	.588	
Q16) Paying by cash reduces the pleasure of shopping	.585	.609	
Q3) Debit cards are more sophisticated than cash (coins/notes)	.481	.588	
Positive Emotions Cash (4)			
Q20) If I had a \$100 note in my wallet I would feel assured	.661	.777	.859
Q17) If I had a \$100 note in my wallet I would feel secure	.710	.772	
Q28) If I had a \$100 note in my wallet I would feel relaxed	.669	.730	
Q23) If I had a \$100 note in my wallet I would feel confident	.780	.734	
Money Management (6)			
Q12) I am more likely to overspend when I use a debit card	.650	.694	.742
Q30) I am aware of how much I spend when I use a debit card to pay for purchases	.138*	-.619	
Q10) I tend to over- estimate the amount of money I have in my debit card account	.500	.500	
Q24) I often feel upset when I check my debit card statements	.552	.541	
Q26) Using cash to pay for purchases helps me reduce my spending	.541	.521	
Q8) I would restrict my spending if I could only pay by cash	.530	.529	
Mentally Spent (3)			
Q25) If I had a \$100 note in my wallet I would consider it spent	.581	.874	.696
Q15) If I have cash in my wallet it is money to be spent	.549	.766	
Q7) If I had a \$20 note in my wallet I would consider it spent	.413	.544	
Gift Mode(3)			
Q14) If someone gave me a pre-paid gift card of \$100 I would spend it on something special	.479	.797	.688
Q19) If someone gave me a \$100 cash as a gift I would spend it on something special	.567	.747	
Q5) If a gift of \$100 were deposited into my debit account I would spend it on something special	.479	.653	
Behaviour (2)			
Q22) Having money in a debit card is safer than having it in a wallet	.44	.871	.592
Q9) A debit card is convenient to use	.44	.687	
Awareness (2)			
Q1) I am aware of how much I spend when I use cash to pay for purchases	.144	.768	.247
Q29) I compare prices when I use cash to pay for my purchases	.144	.521	
Negative Emotions			
Q18) If I had a \$100 note in my wallet I would be reluctant to spend it	.200	.742	.344
Q27) I feel sad when I use cash to pay for purchases	.200	.447	
Sensation			
Q13) I like the sensation I get when I hold a \$100 note in my hand	.081	.736	.149
Q30) I am aware of how much I spend when I use a debit card to pay for purchases	.081	.472	

These three factors were excluded from the CFA analysis. The CFA analysis was run on a 7 factor and a 6 factor model. The understanding is that the model that best fits data will be considered acceptable as a final scale.

The **seven factor** model includes: Emotions (two emotion factors, social and personal gratification, money management, mentally spent, gift mode and benefits

The **six factor** model includes: Emotions (two emotion factors, social and personal gratification, money management, mentally spent and gift mode.

Table 6.15: Confirmatory Factor Analysis: Field Study

Payment Mode	χ^2	df	χ^2/df	RMSEA	NFI	CFI	GFI	AGFI	SRMR
Null	2504	378	6.62	.167	.000	.000	.405	.791	.400
7 factor	564	329	1.74	.060	.775	.889	.830	.791	.070
Null	2353	325	7.24	.176	.000	.000	.397	.348	.067
6 factor	381	280	1.36	.042	.838	.950	.880	.850	.423

Table 6.14 presents the chi-square goodness-of-fit statistics; baseline comparisons fit indices, and model comparison statistics. Although chi-square values for all three models are statistically significant, the baseline comparison fit indices of NFI for the 7 Factor model are poor (range, .740-.838). Though the NFI for the six factor model is low, the other elements meet the required criterion for each element

6.5.2: Demonstrating Validity

The average variance extracted (AVE) statistics clearly exceeded 0.50 for all dimensions, the highest being for “Positive Emotions: Debit card”. Constructs meeting a threshold of greater than 0.50 is recommended. This indicates acceptable convergent validity for all the constructs.

Table 6.16: Demonstrating convergent validity

No	Name of Construct(s)	Composite Reliability	Average Variance Extracted
1	Positive Emotions: D/ Card	0.808	0.833
2	Money Spent	0.654	0.722
3	Social and Personal Gratification	0.550	0.652
4	Gift Mode	0.611	0.694
5	Money Management	0.546	0.649
6	Positive Emotions: Cash	0.766	0.802

All dimensions (Table 6.16) show AVE greater than .50, suggesting these dimensions explain the variance extracted, e.g. items capturing positive emotions explains 80% of variance and lowest is “Spending Control” dimension consistent with Pre-test Two.

Exhibit 6.11: Factor Dimensions

No	Item Name	Composite Reliability	Average Variance Extracted
1	Affluent	0.864	0.879
2	Relaxed	0.814	0.838
3	Secure	0.782	0.813
4	Confident	0.768	0.803
Positive Emotions Cash			
1	Confident	0.722	0.771
2	Secure	0.759	0.797
3	Relaxed	0.793	0.822
4	Assured	0.788	0.819
Money spent			
1	\$20 note spent	0.714	0.765
2	Cash in wallet spent	0.611	0.693
3	\$100 note spent	0.636	0.709
Gratification			
1	Social Status	0.518	0.630
2	Sensation	0.553	0.653
3	Pleasurable	0.572	0.666
4	Sophisticated	0.558	0.657
Gift Mode			
1	\$100 direct debited to account	0.620	0.700
2	\$100 Gift card	0.627	0.705
3	\$100 note	0.586	0.677
Money Management			
1	Overestimate Money	0.544	0.647
2	Upset checking bank statement	0.542	0.646
3	Cash restrict	0.565	0.662
4	Cash Reduce	0.562	0.660
5	Overspend	0.517	0.629

As for study two, Fornell and Larcker’s (1981) discriminant validity test was performed. The AVEs were greater than the correlations, indicating acceptable discriminant validity for each construct. The scale also demonstrate predictive validity as the standardized paths are greater than 0.2 and most of the loadings greater than 0.60 (Fornell and Larckers, 1981).

The EFA resulted in a twenty eight items, a seven factor solution; however the CFA process indicates that the six factor solution is a better fit. Three factors identified have been labelled: Emotions (two emotion factors, social and personal gratification, money

management, mentally spent and gift mode. The solution separated the cash/debit card related (positive) emotions. That no negative associations were sustained reflects the focus group view that having money (no matter how it is accessed) was always positive. What are identified in the scale are the specific positive associations. Also identified is a factor representing social and personal pleasure (status and sensations) linked to the payment modes. One item loading in this factor is somewhat inexplicable (Item 11 - *I am more likely to overspend when I use a debit card*), this may be linked to the notion of pleasure - but it is essentially, a mental accounting factor and would be expected to load with the money management factor. The remaining factors identify items pertaining to money management, gift mode (given as cash or by direct debit).

Although the six factor solution has a low NFI, all other CFA criteria are met as well as the validity tests. So the scale is deemed acceptable as a measurement tool that will enable examination of the proposition that: *the emotional and cognitive associations that people have with cash based tokens and electronic cards are related to their choice of payment mode.*

Even though the scale is acceptable for the purposes of this study, to improve robustness, more initial field work is required. The ninety items are drawn from the study population sample and this presents two concerns: one is the small number of initial items, and the other is the narrowness of the base from which the items were drawn. Further development of the scale should focus on item reassessment and writing as 'good' items are essential to scale validity (Clarke and Watson, 1995).

Chapter Seven

Phase Two: Analysis and Results

7.1: Chapter Overview

This Chapter describes the process and procedures used to address the questions:

Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so How?
Is there a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?

Verifiable propositions (see Exhibit 7.1) were developed from these questions in Chapter Three and are examined in this Chapter. Proposition Two will be examined via ANOVA based analysis and Proposition Three via comparing factor means and *t*-test procedures

Sections 7.2 and 7.3 describe the data preparation process and sample characteristics. Section 7.3.1 describes the control group purchase patterns with the remaining sections reporting the analysis and results that pertain to Propositions two and three.

Exhibit 7.1: Propositions

P 2. Where consumers access their personal savings to pay for transactions, the mode of payment selected will affect their purchase behaviour.

P2a: The overall mean amount spent in a single transaction will be less via cash than via a debit card payment mode.

P2b: The overall mean number of products purchased in a single transaction will be less via cash than via a debit card payment mode.

P2c: The overall mean amount spent on indulgence food products purchased in a single transaction will be less via cash than via a debit card payment mode.

P2d: The overall amount spent on meals and drinks in a single transaction will be comparatively less via cash than via a debit card payment mode.

P2e: The overall amount spent on non-food items in a single transaction will be less via cash than via a debit card payment mode.

P2f: Where cash is used the overall amount spent on distributor (house) brands will be more than the amount spent on national brands.

P2g: Where a debit card is used the overall amount spent on distributor (house) brands will be less than the amount spent on national brands.

P 3. Payment mode perceptions are related to choice of payment mode selected

7.2: Data Cleansing and Preparation

7.2.1: Data Cleansing

One hundred and ninety two (192) shopping receipts and completed PMP questionnaires were returned. Data cleansing resulted in: 52 cash users, 66 debit card users and 63 from the control group; a total of 181 usable receipts and questionnaires.

Preliminary analysis generated descriptive statistics and running statistics to check normality of data, missing data and outliers. Normality is the most fundamental assumption in statistical analysis which greatly influences the validity of the results. Two points need to be considered- large sample sizes reduces the detrimental effects of non-normality; when group comparison is made by tests such as in ANOVA and so the researcher need not be over concerned with violations of non-normality.

Normality of the Demographic Data

Normality of the three demographic variables (*age, education and ethnicity*) is examined by testing their homoscedasticity (Hair et al., 2010). If variances are significantly unequal, the homoscedasticity assumptions are rejected, implying that the distribution of the variable is not normal. Normality tests show that education and age have normal distribution (Levene = 2.5, $p > .05$, $p = .645$, $P > .05$). Distribution for NZ European and Asians is also normal (Levene = .966, $p > .05$), however distribution for NZ European and Maori-Pacific (labelled Pacific Island group) is not normal (Levene = 4.872, $p < .05$). One possible explanation could be that the control group participants from the Pacific Islander high use of cash compared to card based payment modes, affected the skewness of data for the cash group.

Normality of Purchase Receipt Data

The Kolmogorov–Smirnov (K-Test) test was used to assess normality of the purchase data. The convention is that a Sig. value greater than 0.05 indicates normality of the distribution.

Four product categories of household purchase (confectionery, dessert, kitchen ware, and pet products) shows a non-normal distribution with $p < .05$ level. These categories also recorded the lowest value and volume; therefore, negative skewness is suspected. This may be due to spending more on necessity products and less on other product categories. Histograms show that that few categories (confectionery, dessert, kitchen ware, and pet products) did not meet normality assumptions. Data were not transformed to meet statistical normality for two reasons: 1) data transformation changes the nature of raw data collected from field and 2) there is evidence that a slight departure from normality would not affect statistical analysis viability. The suggestion is to identify an appropriate level of effect size and sample size to determine the significance level. Hair et al., (1998) exemplar is followed in determining sample size for this research (See Table 7.1.) Sample size for this stage of data analysis is one eighty-one at $\alpha = .05$ confidence level and effect size ranging between .411 and .990.

Table 7.1: Power Levels of Two Means: Variations by Sample and Effect Size

Sample Size	alpha (α) = .05	
	Effect Size	
	Small	Moderate
20	.095	.338
40	.143	.598
60	.192	.775
80	.242	.882
100	.290	.940
150	.411	.990
200	.516	.998

Checking ANOVA Assumptions

ANOVA is underpinned by three assumptions: the data for each experimental group must be an independent random sample; the population variance must be same for all experimental conditions- constant variance, and the data for each experimental group is normally distributed (Norusis, 2002). For this study, samples were randomly allocated to each payment mode. The constant variance assumption was checked via Levene's test of homogeneity of variance. This test assumes that the two population variances are equal. In this study, Levene's statistics is $F=2.76$, $p = .099$ (Appendix 6.Pg.22). The result shows that variances between the cash and debit card group are significantly different on total dollar spent by participants of purchase. For four categories (confectionery, dessert, kitchen ware, and pet products) normality of actual purchase receipt data has not been assumed. However, with

large sample sizes, small deviations from a normal distribution do not affect the results of a *t*-test or ANOVA.

7.2.2: Data Entry and Management

Data coding, cleansing and entry procedures are described in Chapter Four (Section 4.6.1). The coded items were entered into three spread sheets – representing each payment mode category. The independent variables comprised – demographic (age, education and ethnicity); the total number of items, total value, and the thirteen product categories, discounted items and manufacturer or distributor brand – a total of 21 variables.

7.3: Sample Profile

Participants’ age, education and ethnicity are relatively even across the payment modes. Education and ethnicity (tertiary and NZ European) have a strong association with the debit card payment mode choice (see Table 7.2).

When given free choice (control group) the number of cash users is low with no NZ Europeans electing to use cash. The use of cash is most popular amongst tertiary educated Asian and Pacific Islanders. Credit card users are evenly distributed across the age groups with education being a key factor in credit card choice. Overall, when given choice, participants elect to use a card based payment mode, primarily a credit card.

Table 7.2: Participant Profile by Payment Mode

N=181			Cash (52)		Debit Card (66)		Control (63)					
							Cash (5)		Credit (40)		Debit (18)	
Age	25 to 35 yrs	98	28	54%	33	50%	2	40%	21	52%	14	78%
	36 to 45 yrs	83	24	46%	33	50%	3	60%	19	48%	04	22%
Education	Secondary	45	27	51%	15	22%	0	0%	2	5%	1	6%
	Tertiary	136	25	49%	51	78%	5	100%	38	95%	17	94%
Ethnicity	NZ European	80	18	35%	36	55%	0	0%	17	43%	9	50%
	Asian	66	17	32.5%	18	27%	3	60%	20	50%	8	44%
	Pacific Islander	35	17	32.5%	12	18%	2	40%	3	7%	1	6%

Since the use of cash and debit card was allocated by the research, it is not sensible to draw conclusions about demographic factors for the test groups other than report profiles. The control group choices however provides some insights. The literature shows that income and education correlate with credit card ownership use (Klee 2004; Lee and Kwon 2002). This pattern appears to be reflected in the present study. Though ethnicity appears to be a factor in the instance of the Pacific Islander group, this group sits in the low income category in New Zealand so that it may not be the ethnicity factor, but income and thus access to credit.

Previous research found debit card use to be affected by age and education and gender (Prendergast, 1993; Borzekowski et al.2006; Jonker 2005; Loix, Pepermans and Van Hove 2005; Foscht, Maloles 3rd, Swoboda and Chia, 2010). The gender element served as a sample criterion for this study and age does seem to be a factor. The study by Prendergast in 1993 is a New Zealand study and he reports that debit card users are younger – given the seventeen year gap between his and the present study, one could expect that the age factor would not be significant given the age range of the sample. However the difference is substantial with the older age group using more cash and interestingly, education seems to be a strong indicator of cash use- but it is also directed by ethnicity, with the tertiary Asian and Pacific Islander driving the cash use in the control group. However the small number of participants in the control group precludes generalisation and compromises confidence in the results.

7.4: Results

Three set of results are presented. The first set is an analysis of the control group, inter payment mode comparison and comparisons with the two test groups- the cash and the debit card payment modes. The second set of analysis is examining the variation in purchase behaviour across the two test groups. The final set is an analysis of the payment mode perceptions and their relationship with payment mode choice.

7.4.1: Control Group Examination

An issue for the study is the composition of the control group as the majority (40/64%) of the participants allocated to the control group elected to use their credit card. Eighteen participants used their debit card (28%) with just five (8%) choosing cash. Because this possibly renders the control group a ‘credit card’ category it was decided to compare each of the payment mode categories within the control group and across the two test groups (Cash and Debit Card users).

7.4.1.1: Control group-within group comparison

To enable an effective within group comparison, cash and debit card users were collapsed into a new group labelled ‘owned money’. Comparison of volume and value purchase shown in Table Two. Though, the ANOVA result is not significant ($F=2.860$, $p=0.0960$), the average spend in value figure differs by the average dollar spend (credit users spend 29% more than those who used personal savings). The number of items purchased between those who used owned money and credit card is also not statistically significant ($F=2.047$, $p=0.158$). However, a closer evaluation shows credit card users also bought more products.

Table 7.3: Control Group-Within Group Comparison

Within Control Group comparison				One-Way ANOVA	
		N	Mean (\$)	F	Sig
Average Spend	Owned Money	23	119	2.860	0.096
	Credit	40	168		
No. of items purchased	Owned Money	23	35	2.047	0.158
	Credit	40	45		

7.4.1.2: Control Group-Test Groups Comparison

(1) Cash users: Control and Test Group

The comparison with the cash group shows cash users spend \$49 less than debit card users. To gain further insights, the credit card users were isolated from the control group and the ‘owned money’ group were compared against the cash and debit card.

The only significant difference observed is between the control group (owned money) and the debit card test group ($F=4.30$, $p=0.04$). To determine if this was due to the influence of the cash users in the control group, the cash and debit users in the ‘owned money’ category were separated. Cash users in the control group spent an average of \$75, whereas debit card users spent \$130 and credit users \$167. The sample size is however too small to make a definitive conclusion, but there is an indication that cash users do spend less; that debit card and credit card users spend more, with credit card users spending more than debit card users.

Table 7.4: Control group-Test Groups Comparison

Average Spend			One-Way ANOVA		
	N	Mean	F		Sig
Cash	52	117.5	2.70		0.100
Control	63	150.0			
Debit Card	66	166.0	0.73		0.390
Control	63	150.0			
Cash	52	117.5	0.003		0.956
Control (owned money)	23	118.7			
Debit Card	66	166.0	4.30	P=0.04	0.041
Control (owned money)	23	118.7			
Cash	52	117.5	4.91	P=0.02	0.029
Control (credit card)	40	168.0			
Debit Card	66	166.0	0.01		0.921
Control (credit card)	40	168.0			
Number of items purchased					
Cash	52	36	1.20		0.270
Control	63	42			
Debit Card	66	46	0.80		0.380
Control	63	42			
Cash	52	36	0.02		0.880
Control (owned money)	23	35			
Debit Card	66	46	3.60		.0620
Control (owned money)	23	35			
Cash	52	36	2.63		0.102
Control (credit card)	40	46			
Debit Card	66	45	0.00		0.988
Control (credit card)	40	45			

The cash test group compared to the (control) credit card users spend \$50.5 (on average) less than the credit users ($F= 4.91, p=0.029$). The result is consistent with extant literature that the use of credit increases spending (Hirschman, 1979; Prelec and Simester, 2001; Soman, 2001; 2003; Raghubir and Srivastava, 2008; Hafalir and Lowenstein, 2009). However the number of items purchased across the control group payment modes were not significantly different ($F = 2.63, p=0.102$). This may be due to the credit card users buying more expensive items, or the more expensive manufacturers brands. To examine the latter, the control (credit users) were compared to the cash user test group and there is a significant difference (Table 7.5); credit card users do buy more manufacturers brands.

Table 7.5: Average Spend on Manufacturer’s Brand vs. Private Label

Manufacturer’s Brand	N	Mean	Std. Deviation	Std. Error	One-Way ANOVA	
					F	Sig
Cash	52	74.0	74.7	10.3	7.55	.007
Control group (Credit users)	41	121.6	92.0	14.3		
Private label						
Cash	52	48.0	46.7	6.4	.120	.730
Control group (Credit users)	41	44.79	43.6	6.9		

7.4.1.3: Summary of Control Group Analysis

The analysis of the control group data reveals the following:

- Though the difference is not statistically significant the credit card users in the control did buy more items and spent more than the non-credit mode users. The lack of statistical significance may be a function of sample size.
- That cash users spend less than both debit and credit card users
- That debit card users spend less than credit card users.

Groups	Average Spend		
	Cash \$	Debit \$	Credit \$
Control Group	75	130	167
Test Groups	117.5	166	N/a

7.4.2: Proposition Two Evaluation

To address the question: *Does the payment mode used affect the volume, value, brands/products purchased in a single transaction? If so How?* This section provides a summary of the findings that relate to Propositions Two: *Where consumers access their personal savings to pay for transactions, the mode of payment selected will affect their purchase behaviour* is evaluated by examining specific purchase conditions that are described in seven ancillary propositions

Examination of proposition 2a: *The overall mean amount spent in a single transaction will be less via cash than via a debit card payment mode.*

Table 7.6 shows the overall descriptive statistics and One-Way ANOVA of payment mode effect on total amount spent.

Table 7.6: Average Spend by Payment Mode

N=118	N	Mean Spend	Std. Deviation	Std. Error	
Cash	52	\$117.5	94.6	13.1	
Debit	66	\$144.3	95.41	11.7	
Average Spend by Payment Mode		df	One-Way ANOVA	F	Sig
Between Groups		1		7.41	.007
Levene Statistic	df1	df2			
	1	116		0.418	0.519

Levene's test is used to assess the homogeneity of variances $F= 0.418, p= 0.519$ indicating variance assumption is satisfied. On an average, cash users spend less ($M=\$117.5$) compared to debit card users ($M=\$144.3$). The results from the One-Way ANOVA (Table 7.4) shows the difference to significant $F= 7.41, p=.007$; so there is support for Proposition 2a.

Examination of proposition 2b: *The overall mean number of products purchased in a single transaction will be less via cash than via a debit card payment mode.*

On an average, those who used cash bought less number of items ($M=36$) compared to the group that used debit card ($M=46$). Debit card users bought 10 items more on an average compared to cash users.

Table 7.7: Average Items Bought across Payment Mode

N=118	N	Mean Spend	Std. Deviation	Std. Error	
Cash	52	36	26.3	3.65	
Debit	66	46	22.5	2.71	
Number of items bought by Payment Mode		df	One-Way ANOVA	F	Sig
Between Groups		1		4.54	.035
Levene Statistic	df1	df2			
	1	116		0.25	0.62

Levene’s test of homogeneity of variance with $p=0.62$, indicates the data is suitable for ANOVA analysis (Table 7.7). The result from the One-Way ANOVA indicate that the overall mean number of products purchased in a single transaction is less via cash than via a debit card payment mode, $F= 4.54$, $p=0.035$. So Proposition 2b is supported.

Examination of proposition 2c: *The overall mean amount spent on indulgence food products purchased in a single transaction will be less via cash than via a debit card payment mode.*

Whilst what is termed ‘indulgence’ food products is determined by individual viewpoints, for this study indulgence foods are categorised as those that, in most instances would be deemed not necessary and within the categories identified in Exhibit 4.3- *snack*, *confectionary* and *desserts* are classified as indulgence foods.

As the results in Table 7.8 shows users of debit cards spend more, but do not buy more though the difference is statistically significant. So the support for Proposition 2c is equivocal. One possible explanation could be smaller sample size could have restricted statistical significance.

Table 7.8: Indulgence Food Product by Payment Mode

N=118	Payment Mode	Mean Spend	One-Way ANOVA	
			F	Sig
Snacks (\$)	Cash (52)	\$9.3	1.713	0.193
	Debit (66)	\$12.4		
Snacks (Qty)	Cash (52)	4	0.257	0.613
	Debit (66)	4		
Confectionary (\$)	Cash (52)	\$3.8	1.299	0.257
	Debit (66)	\$6.3		
Confectionary (Qty)	Cash (52)	0	2.635	0.107
	Debit (66)	1		
Dessert (\$)	Cash (52)	\$1.2	1.134	0.289
	Debit (66)	\$1.9		
Dessert (Qty)	Cash (52)	1	1.812	0.181
	Debit (66)	1		

Examination of proposition 2d: *The overall amount spent on meals and drinks in a single transaction will be comparatively less via cash than via a debit card payment mode.*

This proposition suggests that the overall amount spent on food and drink products in a single transaction will be less via cash than via a debit card payment mode. Table 7.8 shows that on average, debit card users spent \$10 more on meals than cash users $M=98.7$. (See Table 7.9)

Table 7.9: Food and Drinks by Payment Mode: Average Spend

N=118	Payment Mode	Mean Spend	One-Way ANOVA	
			F	Sig
Meals (\$)	Cash (52)	\$89.2	7.4	0.008
	Debit (66)	\$98.7		
Drinks* (\$)	Cash (52)	\$7.7	2.6	0.109
	Debit (66)	\$11		

The results from the One-Way ANOVA indicate mixed results:

The amount spent on meals ANOVA $F=7.4, p=0.008$,

The amount spent on drinks ANOVA $F=2.6, p=0.109$

So proposition in terms of meals has support, but the drinks category does not.

Examination of proposition 2e: *The overall amount spent on non-food items in a single transaction will be less via cash than via a debit card payment mode.*

Table 7.10: Non-Food Items by Payment Mode: Average Spend

N=118	Payment Mode	Mean Spend	One-Way ANOVA	
			F	Sig
Personal Care (\$)	Cash (52)	\$5	5.3	0.024
	Debit (66)	\$11		
Home Cleaning (\$)	Cash (52)	\$10	0.129	0.720
	Debit (66)	\$11		
Kitchenware (\$)	Cash (52)	<\$1	10.8	0.001
	Debit (66)	\$2		

Table 7.10 shows that there is partial support for proposition 2e, as only the personal care and kitchenware categories showing a significant difference.

Examination of propositions 2f and 2g:

Where cash is used the overall amount spent on distributor (house) brands will be more than the amount spent on national brands

Where a debit card is used the overall amount spent on distributor (house) brands will be less than the amount spent on national brands.

The ANOVA results show that there is no significant difference in spending by cash and debit card users on distributor’s brand (Table 7.11), however debit card users spent significantly more on manufacturers brands.

Table 7.11: Manufacturers and Distributors Brands: Average Spend

N=118	Payment Mode	Mean Spend	One-Way ANOVA	
			F	Sig
Distributor Brands	Cash (52)	\$48	0.22	0.64
	Debit (66)	\$44		
Manufacturers Brands	Cash (52)	\$74	12.99	0.000
	Debit (66)	\$125		

Exhibit 7.2: Proposition Two: Evaluation

P2a: The overall mean amount spent in a single transaction will be less via cash than via a debit card payment mode.	Supported
P2b: The overall mean number of products purchased in a single transaction will be less via cash than via a debit card payment mode.	Supported
P3c: The overall mean amount spent on indulgence products purchased in a single transaction will be less via cash than via a debit card payment mode.	Not supported
P3d: The overall amount spent on meals and drinks in a single transaction will be comparatively less via cash than via a debit card payment mode.	Partially supported
P3e: The overall amount spent on non-food items in a single transaction will be less via cash than via a debit card payment mode.	Partially supported
P3f: Where cash is used the overall amount spent on distributor (house) brands will be more than the amount spent on national brands.	No supported
P3g: Where a debit card is used the overall amount spent on distributor (house) brands will be less than the amount spent on national brands.	Supported

7.4.3: Discussion

There is enough evidence to conclude that there is some support for three of the ancillary propositions, and partial support for two. Only one – Proposition P3c- *The overall mean amount spent on indulgence products purchased in a single transaction will be less via cash than via a debit card payment mode*, is not supported. This is contrary to the findings of the Thomas *et al.*, 2010 study. However for the present study, this course may be driven by research effects, in that participants, realising that they would be providing their shopping docket, may have curbed their expenditure on indulgence products as the actual number purchased is exceedingly small. So one cannot conclude that the findings of the Thomas *et al.* 2010 are not the case. Given this, it can be concluded that there is support for Proposition Two. Since the participants knew that they would be paying by each of the payment modes, the transaction cost influence is removed. Therefore it can be concluded that payment mode use does impact the number and type of products purchased.

This, coupled with the findings of previous studies does suggest that the payment mode use affects purchase behaviour, with the use of cash having a greater degree of impact than the use of cards (debit or credit). However there is a variation across card use and it would seem that the use of personal savings does temper expenditure. It may well be that our mental accounting facility is not totally off-set by the lack of transparency and the element of credit serves to increase opacity; perhaps due to the fact that actual payment is in the future.

Overall, the number of items does not vary significantly indicating that debit card users are spending more per item. This is also evident by the observation that debit card users buy more manufacturers than cash users, but the same amount of distributors brands.

Though it is possible that the 'cash' used in a transaction may have been acquired via borrowed money, where cash is also 'owned' money, then the only difference is the electronic nature of the transaction.

7.5: Proposition Three Evaluation

To examine proposition four- *Is there a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?*

The score on the scale item "I prefer to and normally use cash" was used to isolate people's preference for cash and card. The range was 1 for *I agree* and 5 for *I disagree* this resulted in a total of 118 responses, 42 of whom say the normally use cash and 76 who did not (the assumption is that either debit or credit card modes are preferred)

Only participants who marked 1 (The payment mode preference and the dimension developed in Chapter 6 were compared). Of 118 samples, forty-two responded that they normally use cash and rest seventy-six said they normally used debit card. To ascertain if there is a difference in the cognitive and emotional associations across payment modes, the composite mean score for the factors identified (see Table 6.13) were computed and compared. These are reported in Table 7.12.

Table 7.12: Comparisons of Factor Means

Dimension	Debit Users			Cash Users			<i>t</i>	df	Sig. (2-tailed)
	Mean	Std Dev	Std Error	Mean	Std Dev	Std Error			
Positive Emotions Cash	3.07	1.13	.124	2.44	1.192	.184	-2.894	123	.005
Positive Emotions Debit	2.93	.96	.106	2.42	1.1	.17	-2.696	123	.008
Gratification	3.64	.82	.09	3.08	1.24	.192	-3.038	123	.003
Money Management	2.75	.76	.083	2.48	.955	.147	-1.711	123	.090
Mentally Spent	3.04	1.084	.119	2.91	1.19	.184	-.620	123	.537
Money as Gift	2.75	1.02	.112	2.32	1.24	.191	-2.065	123	.041
Usage/ Behaviour	1.58	.851	.093	2.38	1.27	.197	4.151	123	.000

Positive Emotions cash: $t(df=123)=-2.89, p<.05$. So the critical $p=.05$ is ± 1.96 . The t value -2.89 is greater than ± 1.96 . This suggests that two groups differ in their perception.

Positive Emotions debit card: $t(df=123)=-2.696, p<.05$. So the critical $p=.05$ is ± 1.96 . The t value -2.696 is greater than critical value ± 1.96 . This suggests that two groups differ in emotions associated with payment mode.

Gratification: $t(df=123)=-3.03, p<.05$, the critical $p=.05$ is ± 1.96 . The t value -3.03 is greater than ± 1.96 . This suggests that two cash and debit card group differ in gratifications associated with payment mode.

Usage/Behaviour: $t(df=123)=4.15, p<.05$. So the critical $p=.05$ is ± 1.96 . The t value 4.15 is greater than ± 1.96 . This suggests that two groups differ significantly on usage behaviour.

Money as Gift: $t(df=123)=-2.06, p<.05$. The critical $p=.05$ is ± 1.96 . The t value -2.06 is greater than ± 1.96 . This suggests that two groups differ in the way they perceive money as gift.

The factor “money management” and “mentally spent” factor’s $t(df=123) = -1.711$ and $t(df=123)=-0.620$ are less than critical $p=.05$ (± 1.96), so they did not differ cash and card payment mode preference. When the factor means are compared only four show significant variation- the two emotion factors, gratification and Money as Gift. The usage/behaviour factor is also significant but this was not included in the six factor solution (See Table 6.10) as this was deemed a function of the low alpha’s (common where factors have low item numbers), it was included at this point as it provides some additional information. Mainly that although debit card users are stronger in their agreement that cards are both safer and convenient, cash users agree- though to a lesser extent.

To enable a more complete understanding of the underlying differences- the mean scores for the items in each factor are shown in Table 7.13. It should be noted that the monetary value available via both modes is the same.

Responses on items related to emotions show that:

- Participants who prefer debit cards consider that the debit card allows them to feel more relaxed confident, secure and affluent than does cash
- Participants who prefer cash feel that having cash lets them feel more relaxed, confident, secure and affluent than a debit card.
- Participants who prefer to use debit cards find using their debit card pleasurable
- Participants who prefer cash do not find using a card pleasurable

Although a significant difference is noted in the Gift factor, the item driving this is the different view on what should be done with a gift of \$100 deposited into a debit card. Those who prefer cash are more inclined to agree that they would use it to buy something special, whereas those who prefer the debit card mode are less likely to spend the money on something special. This is consistent with the views expressed by the focus participants in this study.

Both groups have similar views in two factors (no significant difference- Mentally Spent and Money management. The factor 'Mentally Spent' describes the notion that cash in a wallet is 'spent' money and both groups agree that this is so. The factor 'Money Management' describes how the use of the payment modes affects their money management ability. Both groups agree that debit card use, impairs their money management ability and that the use of cash does help to reduce spending. People who prefer to use cash also like the sensation of holding a debit card. Both groups agree that they do not spend more when they use cash- and the debit users demonstrate a stronger agreement.

7.6: Summary

For this study, participants knew before they engaged in the shopping task which payment mode they would be using- thus eliminating the transaction costs as a factor in payment mode choice. There is evidence that would allow the conclusion that there is support for

Proposition Two that- *where consumers access their personal savings to pay for transactions, the mode of payment selected will affect their purchase behaviour.* Three of the ancillary propositions – *that the amount spent and the number of items purchased is less when the cash mode is used* and that *debit card users are more likely to buy manufacturers labels* are supported. Less difference is noted when comparisons are across the type of product purchased- in this instance food/ non food items. The variation lies with the purchase of personal products and kitchen items with the debit card user buying more in terms of value. The comparisons across the various payment modes selected in the control group shows that cash users spend less than both debit and credit card users and debit card users spend less than credit card users. However it needs to be remembered that the control group sample size is too low for any definitive conclusions.

There is some support for proposition three- *that there is a link between the cognitive and emotional associations that people have with specific payment modes and their payment mode choice?* When the factor means are compared only four show significant variation- the two emotion factors, gratification and money as gift. Relating to the emotion factor those who prefer debit card consider that the debit card allows them to feel more relaxed confident, secure and affluent than does cash and they find using the card pleasurable. Those who prefer the cash mode associate cash with feeling relaxed confident, secure and affluent and find using cash pleasurable. Though the gift mode factor showed a difference, the basis of this difference is how a gift of \$100 to a debit account should be spent. The cash group would spend it on something special whereas the debit group think it would probably be used for non-specific purposes. Both groups perceive that debit card use impairs their ability to manage their money and that the use of cash helps to reduce spending. Both groups agree that when they have cash in their wallet- it is money to be spent.

One observation that can be made is that people who prefer to use cash- associate it with a pleasurable activity so that the assumption that the use of cash translates to an experienced psychological pain may need to be reassessed. Though Zellermyer's work is influential, in that he introduced the notion of psychological pain, the focus of his study was on bill payments in relation to time of payment and the source (products purchased). In this context he observed that 'choosing how to pay may be more a function of habit than by immediate hedonic considerations'. He does not clarify what is meant by hedonic but implies that when

habit is present, the pain of paying effect ceases to exist (Zellermayer 1996:67). Thus it may be that where a payment mode is the preferred mode, given the findings of the present study, the concept of pain associated with the parting of cash may need to be re-examined.

Table 7.13: Mean Item Score: Field Study

Positive Emotions Debit Card (4)	Mean	
	Debit	Cash
Q33) I would feel relaxed (\$100 D/Card)	2.8	2.5
Q31) I would feel confident (\$100 D/Card)	2.8	2.2
Q32) I would feel secured (\$100 D/Card)	2.8	2.1
Q34) I would feel affluent (\$100 D/Card)	3.3	2.7
Social and Personal Gratification (6)		
Q6) I like the sensation I get when I hold my debit card in my hand	3.9	3.4
Q2) Using a debit card gives me higher social status	3.8	3.4
Q21) Using my debit card to pay for purchases is pleasurable	1.6	3.1
Q11) I spend more when I use cash to pay for purchases	4.0	3.1
Q16) Paying by cash reduces the pleasure of shopping	3.6	2.6
Q3) Debit cards are more sophisticated than cash (coins/notes)	3.1	2.9
Positive Emotions Cash (4)		
Q20) If I had a \$100 note in my wallet I would feel assured	3.0	2.5
Q17) If I had a \$100 note in my wallet I would feel secure	3.0	2.3
Q28) If I had a \$100 note in my wallet I would feel relaxed	3.1	2.6
Q23) If I had a \$100 note in my wallet I would feel confident	3.0	2.4
Money Management (6)		
Q12) I am more likely to overspend when I use a debit card	2.7	2.7
Q30) I am aware of how much I spend when I use a debit card to pay for purchases	2.4	2.0
Q10) I tend to over- estimate the amount of money I have in my debit card account	3.1	3.0
Q24) I often feel upset when I check my debit card statements	3.2	2.7
Q26) Using cash to pay for purchases helps me reduce my spending	2.7	2.2
Q8) I would restrict my spending if I could only pay by cash	2.3	2.2
Mentally Spent (3)		
Q25) If I had a \$100 note in my wallet I would consider it spent	3.2	3.0
Q15) If I have cash in my wallet it is money to be spent	2.8	2.8
Q7) If I had a \$20 note in my wallet I would consider it spent	3.1	3.0
Gift Mode(3)		
Q14) If someone gave me a pre-paid gift card of \$100 I would spend it on something special	2.2	2.2
Q19) If someone gave me a \$100 cash as a gift I would spend it on something special	2.7	2.3
Q5) If a gift of \$100 were deposited into my debit account I would spend it on something special	3.3	2.3
Behaviour (2)		
Q22) Having money in a debit card is safer than having it in a wallet	1.6	2.2
Q9) A debit card is convenient to use	1.5	2.5
Awareness (2)		
Q1) I am aware of how much I spend when I use cash to pay for purchases	1.6	1.0
Q29) I compare prices when I use cash to pay for my purchases	2.5	1.5
Negative Emotions (2)		
Q18) If I had a \$100 note in my wallet I would be reluctant to spend it	3.2	2.8
Q27) I feel sad when I use cash to pay for purchases	3.6	3.7
Awareness/sensation (2)		
Q13) I like the sensation I get when I hold a \$100 note in my hand	2.5	1.9
Q30) I am aware of how much I spend when I use a debit card to pay for purchases	2.4	2.0

Chapter Eight

Conclusions, Contribution and Future Research

8.1: Introduction

Identifying a need for more research to be conducted into payment mode effects, this thesis examined the notion that the physicality of the payment mode used to effect a transaction affects consumers' perceptions and behaviour when purchasing products. To this end the cognitive and emotional associations that people have with payment modes were examined to ascertain if, and if they do, how these associations impact on payment mode choice and how the payment mode selected impacts on purchase behaviour. This chapter revisits the research questions introduced in Chapter 1 and shows how each of these was addressed. The theoretical, methodological, managerial and societal contributions of the research are outlined, and limitations of this present research explained. Finally, directions for future research are proposed.

8.2: Conclusion Related to the Research Questions

This research set out to examine the cognitive and emotional associations that people have with payment modes and to ascertain if and how these associations impact on payment mode choice and how the payment mode selected impacts on purchase behaviour. To focus the study task, three research questions were formed:

- Do the cognitive and emotional elements that people associate with cash based payment mode, differ from those associated with a debit card based payment mode?
- Does the payment mode used; affect the volume, value, brands/products purchased in a single transaction? If so, how?
- Is there a link between the cognitive and emotional elements that people associate with payment modes and payment mode choice?

Research Question One: Do the cognitive and emotional elements that people associate with a cash based payment mode differ from those associated with a debit card based payment mode?

To address this question, a phenomenological based data collection mode was adopted and data were obtained through five focus group sessions. The data reflect participants' unique perspective as well as those shared by the group. The focus group sessions followed nominal group techniques that captured individual perceptions via workbook tasks and projective tests and group based discussion.

Results show, that for the participants in this study, the cognitive and emotional elements associated with cash and debit card modes do indeed differ.

Distinct difference in emotional, responses to the payment modes include:

- Both forms of payment are considered acceptable
- A \$100 note is associated with pleasure and happiness whereas 100 dollar stored in a debit card is associated with hard work.
- A \$20 note is considered honest and hardworking.
- A \$20 note and a debit card with stored \$100 are both deemed to be comfortable, dependable and easy-going.
- Cash is viewed as money- a debit card- access to money. A common view of cash is that you *can see it is money*- it is real.
- A marked reluctance to 'break' and thus spend a \$100 note this is more marked when using it to buy low value items and items that are not considered 'special'. No such associations with \$100 stored in a debit card are reported
- An expressed enjoyment when paying by cash in the context of 'special' purchases
- The '*Power*' factor varies in that \$100 cash increase spending power, participants' associate cash with wealth and necessary means to enjoy spending. No such associations with \$100 stored in debit card were noted. Cash is associated with increased power but money in debit card is related to wasting or overspending.

The distinct differences in cognitive responses include the following:

- When cash is used there is a heightened awareness that something of value is being transferred.
- More effective transaction value computing (consciously and unconsciously) when cash is used.
- Better money management and spending control.
- Small denomination notes were considered ‘spent’. In essence, once it is removed from a savings account it is essentially ‘mentally spent’.
- When a debit card is used the awareness that something of value is being transferred is low especially when paying for low-cost items such as snacks, bus-fares and take-away meals. When cash is used the participants saw it disappearing; but with the card, the reality of the expenditure only hits when the bank statement arrives.
- When given an absolute amount (e.g., \$100) to spend, for their supermarket purchases the majority (slightly more for the cash payment mode) report the use of a calculator and planning irrespective of payment mode used. However the temptation to ‘overdraw’ on the card is omnipresent.
- Impulse purchases were thought to increase when the debit card is used.
- A reluctance to carry cash for fear of loss and so deemed the card as the ‘safer’ mode; awareness of electronic fraud was relatively low.

This thesis suggests that the physical characteristics of the payment mode used, affects consumers’ perceptions and behaviours. Explanation as to why this should be so is based on the notion that *the mind is inherently embodied because its processes must be neutrally instantiated and because our perceptual and motor systems play a foundational role in concept definition and in rational inference* (Anderson, 2003:105). The underlying premise is that the inherent physical differences of both – the visual representation of value with the cash token and the ‘access’ feature of the card coupled with varied historical associations (*electronic cards are a relatively recent technology*), affects perceptions and thus behaviours associated with the use of each.

Given the historic use of cash, it is most likely that people have developed an established set of responses to the cash token (the stimulus), i.e., a cognitive bias. This set of responses functions as anchor points (reference points) that direct perceptions and behaviour when the

token is used, perceptions and behaviours that differ to those that occur when a debit card is used. The findings show that there is indeed different responses to the tokens used a difference that the participants link to the physical nature of both.

One difference recognised and examined by researchers such as Soman (2001) is the quality of our mental accounting. Soman (2001) suggests that cash use assists in the remembering of how much money being spent whereas use of card does not. So the physicality of payment mode influences the price-benefit analysis and tallying of mental accounts. This study found that people felt their ability to tally expenditures were better with cash than a debit card. The common view is that one can see the actual value being transferred from hand to hand using cash whereas debit card obscures this awareness of transfer.

Research Question Two: Does the payment mode used affect the volume, value, of brands/products purchased in a single transaction? If so, how?

To address this question a field based data collection mode was adopted. Two hundred and forty participated in this field study and were randomly assigned to a specific payment mode - cash, debit card and control (participants asked to use their normal payment mode). Participants were asked to provide a supermarket docket for their weekly household shop for the week specified. The findings show that:

- The volume and the value of purchase in a single transaction increase when a debit card is used to enable payment. The amount spent on indulgence food product purchased in a single transaction did not vary across payment modes. This finding contradicts the findings of the Thomas et al.. (2011) study where the researchers found that that debit and credit card users spend more on unhealthy and impulsive product than cash users. One possible explanation could be smaller sample size that could have restricted statistical significance.
- Though, debit card use increases spending per transaction, that more items are purchased is not evident.
- The amount spent by debit card users on 'meal' making items is significantly higher than the cash users, though debit card users also spent more on non-alcoholic beverages the results is not statistically significant.

- Debit card users spend more on personal care and kitchenware items than home cleaning product. One possible explanation could be cleaning product is necessity and so use (and therefore purchase) is not discretionary. There is no significant difference across the payment modes on distributor's brand; however debit card users spent significantly more on manufacturers' brands.

The overall conclusion reached is that when cash is used less money is spent and fewer products are purchased per transaction than when a debit card is used. However the type of card also has an influence in that when a debit card is used the volume and value per transaction is less than when a credit card is used.

The finding of this study contradicts with Bounie and Francois (2009) notion that transaction size determines the choice of payment mode. Since, participants were assigned to cash and debit card condition- they knew before they engaged in shopping task which payment mode they would be using- thus eliminating the transaction cost as factor in payment mode choice.

Research Question Three: Is there a link between the cognitive and emotional elements that people associate with payment modes and payment mode choice?

To address this question, participants who also participated in the supermarket purchase study by providing their shopping docketts (N=118) also completed a payment mode perception questionnaire. The score on the scale item "*I prefer to and normally use cash*" was used to identify their preferred payment mode. The composite mean score of the identified factors was compared across cash and debit card users. When the factor means are compared only four show significant variation- the two emotion factors, gratification and money as gift. Essentially, participants consider that their preferred mode allows them to feel more relaxed confident, secure and affluent and gives them a sense of pleasure when using the token.

Perceptions associated with receiving the same amount of money as cash or paid into a savings account differed. The preference is for a gift of money to be given in cash especially if it is a small amount (e.g., \$50/\$100). If cash is received the participants agreed that they

would spend it on something special but if paid into their account they would be more likely to use it for non-specific purpose.

Both groups, irrespective of their preferred mode preference have similar views in regards to money management. Both groups thought that cash in wallet is mentally spent; i.e., that once the cash is withdrawn from a savings account it is for spending. Both groups agreed that debit card impairs mental tallying of expenditures.

8.3: Theoretical Contribution

Since their introduction, much has been written about electronic card use. The topics examined include, among others, adoption, use, security and fraud. Much of the literature is relevant to business, e.g. the role of banks and retailers in the introduction and management of card based payment systems. A substantial amount of research examines cross-country adoption and use patterns. An aspect that has been given scant attention is how consumers perceive electronic cards vis-à-vis cash and how their use, influences purchase decisions. This study sits in this last domain. Although there is increasing attention to this aspect, there is still, little substantial knowledge. This study adds to our knowledge in a number of ways:

- Extends the credit card research of Hirschman (1979); Feinberg, 1986; Cole, 1998; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; Raghurir and Srivastava, 2008). The present study found that credit card use does increase the volume and value of goods purchased and that debit card use does also- but not to the same extent.
- Extends and confirms the findings of Soman (2003) where Soman asserts that the transparency of payment mode influences the quality of our mental accounting at the point of purchase. This study extends and confirms the work of Prelec and Loewenstein (1998) (*decoupling theory*) and Somans (2003) (*transparency theory*). These theories in essence argue that the use of a card reduces transparency and thus decouples the mindfulness of the act.

- This study clarifies the pain of paying concept. Extant literature makes assumption that paying via cash is associated with experiencing pain (Prelec and Loewenstein, 1998; Soman, 20003; Raghurir and Srivastava, 2008; and Thomas et al. 2011). However, the basis of this assumption is weak as only Thomas et al (2011) measures the degree of pain experienced in relation to payment mode, other only assume the cash-pain relationship. Zellermayer (1996) examines the degree of pain-pleasure experienced with the purchase type and the association with payment mode. He found that pleasurable purchases are just likely to be paid by cash or other modes of payment. This study extends Zellermayer (1996) study by identifying other emotional association that people have with payment mode. In this study participant's report where the paying was routine and for small amounts they were not really conscious of any emotion. For special purchase some felt that it was rewarding spending money. When handing over larger amounts they did report a sense of sadness at parting with money. What emerged from this study is that consumers are more 'aware' that they are parting with something of value- whether pain, pleasure, irritation was experienced was a function of the type purchase. The results of this study indicate that this area of needs further study.

- This study extends and confirms bias for whole effect and denomination effect. For example, respondents viewed it is easier to spend (five) \$20 note than one \$100 note- this finding is consistent with Mishra et al (2006) bias for the whole effect. \$100 note is not be broken, it hurts breaking \$100 note. The consensus is once \$100 note is broken it is easily spent, supporting Raghurir and Srivastava (2009) denomination effect.

- Extends our knowledge base and understanding of how consumers view the tokens used to payment for transactions. Their perceptions of payment mode are ascertained.

8.4: Methodological Contribution

The development and validation of the PMP scale is a contribution to theoretical knowledge as existing scales that measure perceptions of money do not examine perceptions of payment modes. For example, existing scales measures relationship between perceptions of money and specific personal attributes such as sensation seeking, risk taking, materialism and ethics. A single attempt to link emotions to payment mode is used by Thomas et al (2010) where emotion was assessed by the use of happy-sad face scales and list of words identifying negative associations. No reliability/ validity were reported.

Extant research in the area of payment mode and purchase behavior primarily gathers data via laboratory experiments, using scenario and/or questionnaire based data. A handful of field studies use supermarket panel data (Soman, 2003; Thomas et al., 2011). This study gathers actual purchase receipt from participants to examine payment mode effect on purchase behavior. Participants who provided purchase receipt in the field experiment also completes a payment mode perception scale. The questionnaire was used to examine participant's perceptions of preferred payment modes along with purchase receipt data.

8.5: Managerial and Social Impact

- The findings have social and economic impacts. One, card use may lead to , increased spending and debt problems. This is especially relevant as the penetration and variety of electronic payment modes is bound to increase. There may also be a case for monitoring the use of non- cash tokens in areas such as casinos and online gambling
- The study finds evidence that both cash and debit card users thought that debit card use impairs money management ability and that the use of cash mode allows tallying of expenditure in mental accounts. This finding has relevance to aging population those who grew up using cash tokens might find difficulty in personal money management. The study may also have relevance to training children (currently the tendency is to teach children budgeting and saving via the saving of the cash tokens)-more training on account management may be required.

- Brand owners may well be advantaged as when cards are used more expensive brands (manufacturers brands) are purchased and also people buy more products in (at least in the super-market context).

8.6: Limitations of the Study

The study is limited in both scope and context. Scope is an issue, because of the sample size. Participants were selected via a non-probability, criterion-based, purposeful sampling process. So, regardless of the sample size, that such sampling represents the entire population cannot be known, therefore it is not sensible to generalize the results beyond the specific sample used. Whilst the use of the supermarket purchase situation allows comparison with previous studies it limits the findings to this context. These limitations also extend to the use of the payment mode perception scale. Whilst every effort was made to ensure structural validity, testing and development needs to be conducted across a range of populations before external validity can be assured.

While there have been many contributions to the discipline of consumer behaviour, financial retail services, behavioural economics and economic psychology from this study, there are some limitations to it that will now be discussed.

- Some small methodological limitations worth noting in regards to focus group discussions. First of all, while maintaining homogeneity of participants in focus group, all were women between the age of 25 to 35 with a child under the age of five and living in same demographic area could limit our understanding of the perceptions of payment mode. A diverse view on perceptions of payment mode was not generated.
- One major limitation that was who actually did the grocery shopping, identifying decision makers and influencers. Though, participant homogeneity was an important consideration while recruitment stage for field experiment, it was not possible to control who actually did the grocery shopping in the household.

- The priming regarding the shopping task where participants were assigned to payment modes to shop for a weekly grocery shopping is problematic for this study. However, steps such as a cover story were told to participants while recruiting that this study is about payment modes and grocery shopping to minimise priming effect.
- Because this research is exploratory, several limitations exist. These limitations, in turn, suggest implications for future research. First, the items on this scale with lowest item-total correlations (0 .2) and the lowest coefficient alpha (.68) were retained as they captured important dimension, namely behaviour/usage dimension of PMP scale. A second limitation pertains to scale validation in that though the scale development process included test-retest reliability, different populations were used. Ideally for the test/re-test approach the sample should have the same profiles. So testing the PMP scale on a variety of samples using a variety of purchase context is recommended and correlation of the scale with other scales is necessary to establish construct validity.
- Generalisation of research result is linked to the issue of external validity. External validity concerns the extent to which the results of a study can be legitimately generalised to other times, setting, or groups of people (McTavish and Loether, 2002). The result of this study can only be generalised to specific group of people who participated in this study. Since the main of objective of this study was exploration, future replication of the study would confirm the result in different context and would remove the issues surrounding construct validity (theoretical constructs predicts relationships) and confirmatory status.

8.7: Future Research

An obvious direction for future research is the need to conduct enquiry across disparate populations across different payment mode. Gender, life-stage, culture are bound to impact perceptions. So the perceptions of people that represent these elements should be ascertained. Preferably, in the first instance by phenomenological methodologies and different purchase context.

To date, the majority of the studies use data obtained through laboratory experiments and panel data (primarily supermarket/grocery purchasing). Situations such as buying tickets for movies, fast-food and restaurant based purchases, clothes and other personal items also need to be examined and done so in a natural as opposed to laboratory setting.

Future research should consider the innovative use of mobile devices to purchase goods and services. For instance, a contactless and rechargeable smart card allows people to pay bus fare, buy snacks and pay for parking tickets. In Japan consumers can purchase goods from vending machine simply dialling a number on their mobile and the bill is charged on their phone bill. The use of mobile phone to pay for purchase is inevitable. As mobile payment presents convenience to consumers, it also results in perceptual distancing between payment and consumption. It is necessary to ascertain people's perception of mobile payment, their use and associated behaviour.

The payment mode perception scale is a potentially valuable tool and so its further development is necessary. For it to be viable external validity needs to be established. This entails testing across socio-economic groups, gender and sub-cultural groups and of course cross cultural validation.

Thaler suggest mental accounting of cost and benefit is subject to fallacies and cognitive biases. For this study, the focus is on the representations of money i.e. the tokens used to facilitate the exchange- in this instance cash and a debit card. The intent of this study was not to address fallacies though pursuing them would be a useful area of research. For example, would the type of token used affect the gamblers fallacy in casinos- chips play with and online gambling uses cards both tokens obscure awareness of value in a transaction.

Final Note

It is sensible to assume that a cashless society will prevail. This being so, though the findings are particular to a specific population, given the study findings, money management and spending awareness may be an issue for many people. At least in the transition stages and so

it may be prudent for governments, organisations and social groups to focus on money management education and training programs.

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Appendix 1: The Concept of Money- Background.

Credit cards have been characterised as having negative social effect. Among these are stimulation of materialistic values and hedonism and creation of indebtedness among consumers which may lead to anxiety and bankruptcy. Bell (1976) argues that previously one had to save in order to buy. 'But with credit cards one could indulge in instant gratification. The system was transformed by mass production and mass consumption, by the creation of new wants and new means of gratifying those wants' (Bell, 1976, p. 21). Bell (1976) links this to destruction of protestant work ethics through the invention of the instalment plan, or instant credit. The author reasons that prior to the Second World War, people by and large

were savings oriented and lived by the ethic of deferred gratification. They would not buy houses with large mortgages and run up huge credit card balances, but would save their money until they could buy things outright. Gratification of their desires was deferred until they could afford to satisfy them, and then, and only then, was it proper to buy things to enjoy. In other words, most people lived within their immediate means and did not borrow for purposes of increased consumption. Credit card in essence buy now and pay later mentality stimulates increased consumption and directs individuals towards being part of consumer culture. Belk (1988) defines consumer culture in which consumers avidly desire, pursue consumption, and displays goods that are valued for non-utilitarian reason such as status/power, envy protection, and pleasure seeking. **Zuckerman (2000)** links society of indebtedness to consumer culture. Lea et al (1995) argues that there is a wide spread view that attitude towards debt have changed dramatically during twentieth century-from general abhorrence of debt to acceptance of credit as part of modern consumer society. In this environment, society reinforces one's belief, attitudes and personal norms that overspending and excess buying is acceptable. Schorr (1998) believes that easy credit availability stimulates materialistic value and overspending. Social scientist (q.v. Dohrenwend et al 1992; Kessler, 1982; Link, Lemon and Dohrenwend, 1993; Adair, 1992) have associated socio-economic status with mental health. The argument that credit card debt is stressful and impact on personal wellbeing is accounted for several reasons: credit card debt is associated with short term and long term financial difficulties; is indicative of financial hardship; since, credit card debt is unsecured as result aggressive tactics are used by collection agencies. Research on credit card debt, and the stress regarding debt finds that both are associated with worse physical condition (Drentea, Salaries, and Schorr, 1998)) and mental health where anxiety increases with the increasing ration of credit card debt to income (Drentea, 2000).

Another stream of research directs linkage between credit card usage and compulsive buying behaviour. Cohen (2007) suggest that credit card function as a tool for consumers to fulfil their ever evolving desire to consume more and more because credit cards allow consumers to experience a lifestyle beyond their immediate financial means. Roberts and Jones (2001) argues the influence of credit card use with compulsive buying can be explained by the "weapons effects theory". The theory states that the mere exposure to an aggressive stimulus will lead to an aggressive behaviour. Feinberg (1986) uses weapon effect theory to explain why people spend more using credit card. Consumers who regularly use credit card as their main method for payment are more likely to spend more than those consumers who use other methods of payment and tend to use it beyond their ability to pay (Park and Burns, 2005). Several other studies O'Guinn and Faber (1989), Park and Burns (2005) have identified a significant relationship between credit card use and compulsive buying. Roberts (1998), Roberts and Jones (2001) and Park and Burns (2005) discovered that there is a significant relationship between credit card use and compulsive buying among American college students. In addition, Kaynak and Harcar (2001) indicated that as the length of time of credit card ownership increases, so too does the positive attitudes towards them and consequently

its usage. This in turn points out that continuous use of credit cards may trigger further consumption via credit cards.

Research into credit card usage to spending behaviour involves methodological issue of endogeneity problem, for example, in a simple supply and demand model, when predicting the quantity demanded in equilibrium, the price is endogenous because producers change their price in response to demand and consumers change their demand in response to price. In case of payment mode and purchase behaviour, self selection of payment instrument or assignment of payment instrument will create such a loop of causality between the independent and dependent variables. There are several studies from economic discipline investigating closely related issues. Ausubel (1991) distinguishes three groups of consumers in the credit card market: convenience users, who pay their balance in full each month and do not pay interest; revolvers, who pay interest on their balances; and a third group who believe that they are not going to borrow on their cards but end up borrowing because of commitment problem. The last group's underestimation of their own future borrowing, Ausubel (1991) argues, makes them less sensitive to the interest rate on the card than they would be if they correctly predicted their own borrowing and hence leads to higher credit card interest rates than one would expect in a competitive market with fully rational consumers. In a subsequent study, Ausubel (1999) finds support for "underestimation hypothesis" from the results of market experiments conducted by a major bank in United States. The major finding is that people end up paying more interest in total because they over-respond to introductory interest rates, but pay insufficient attention to (1) how long the introductory rate will be in effect and the interest rate that will go into effect at the end of the introductory period. Although the underestimation hypothesis deals with mispredictions of spending rather than levels of spending with credit cards, such under prediction cause people to spend more using credit card. Gross and Soulels (2002) address the issue of whether credit cards promote spending by showing that an increase in the credit limit on a credit card leads, on average, to an increase in consumer debt. Importantly, this effect holds even for consumers who do not carry balances close to their credit limits. However, this study did not address the question of whether the effect is due to credit cards per se, or to the availability of credit.

As a medium of exchange, it is considered superior to barter in terms of reducing transaction cost. Barter requires an improbable coincidence of wants or events and balancing value. Overcoming this without money requires some system of in-kind "credit" or "gift exchange", restricting trade to those who know one another. Money based transactions differ from barter in that the burden of trust is removed from the participants in the actual transaction and placed on a third party - the issuer of money- usually in the form of a transferable token. In this sense, coins and notes embodied a store of value within a conveniently portable medium of exchange and acceptable means of payments (Ingham, 2004).

From early times, communities have used objects (commodities) of value as proto-money - the value of which is set by the society. How the 'value' of a currency of a society is agreed, is a central issue. The value accorded to the token and/or what it represents is a social construction. According to Weber (1920s) the means of storing and transporting this abstract value consists in the social organisation of the monetary system. It is only by social agreement that a 'token' is able to embody the value agreed and by doing so removes the need to anchor the value of the token to the time and space of any actual transaction. The form of the token also varies across time and space. Examples include gold, silver, copper, salt, peppercorns, large stones, decorated belts, shells, alcohol, cigarettes, cannabis, candy, barley etc.

The use of a transferable 'token' originates in the agrarian economies of the Mesopotamian and Egyptian empires (c.3000 to 500 BC). Clay tokens were used to represent items of agricultural surpluses and units of work in terms of time or production. The first true coins date from c. 640 BC in the near Eastern Kingdom of Lydia (Davies, 1996: 63). It was at this stage of development that the link between token measures of material value and precious metals such as gold and silver was made. For most western societies the tokens used were made of metal, with the highest value attached to gold and silver with gold being the most prized. One of the principle reasons that gold coins proved so popular was that for the rich they were able to provide a convenient store of value more so than any other metal. While coins are still widely used for monetary purposes to this very day, most of the world stopped making gold coins for use as currency by 1933, and today gold coins are no longer in general circulation and used as currency. The original concept of coinage was that each coin had a face value and that this value was represented by the actual content of the material used to manufacture that particular value coin. This concept introduced to coinage the unit of account - that a coin of a given denomination had a guaranteed quantity or weight of a given metal equal to it's face value. When used, coins wear so the metal content is reduced. For this reason British sovereigns for example were only legal tender until they started to show wear, they were then withdrawn and replaced with new full weight coin at the cost of the British government.

Economic and Social View of Money: The Economics Perspective

During the 18th century, mainstream economists agreed that their discipline specialised in the study of wealth. Wealth can be held in the form of money or in other forms e.g., gold or property). Money is simply one possible form of measurement of wealth and most readily exchangeable form of commodity for other goods.

Adam Smith proposed that money is simply a measure of ‘wealth of a nation’ and wealth is associated with value. The concern with value has since dominated classical economic thought. Classical economists proposed that money is just a measurement of value, medium of exchange, a measure of account, and a means of storing value (Keynes, 1930; Grierson, 1977; Furnham and Lewis, 1986; Hicks, 1989; and Hoover, 1996). In classical economics, money is viewed as an essentially tangible entity that could be stored and circulated reflecting the dominance of the commodity theory of money (Ingham, 2004).

(Mills 1871, 1848) recognised the need to understand money at the individual level and proposed that economics was the science that dealt with only one of many human motives, the desire to maximise wealth. He proposed that several interrelated notions characterised classical economic thought:

- that money is a tangible entity; that the value is determined by the value of precious metals it contained,
- that the value was determined by the supply and demand of the material constituting the entity and cost of production,
- that the variation in the quantity of money causes price movement, and not vice versa,
- that the existence of bank liabilities in the form of notes and bills of exchange were acknowledged as

part of money supply only if they were convertible into gold and/or silver .

Karl Marx was critical of Mill’s economic assumptions and argued that Mills (and the rest of classical economists) emphasised the interest of the capitalist class that it served. During the 19th and 20th Centuries new ideas in economic thought emerged. The two dominant theories are the marginal utility and general equilibrium. Marginal utility theory suggests that consumption to maximise the total utility they receive from various goods and services (Jevons, 1871; Finn, 1992). Although prominent economist have criticised aspects of this theory and proposed extensions and modifications utility maximisation remains the fundamental pillar of economic thought (Friedman, 1953). General equilibrium theory incorporated the activities of both producers and consumers and assumes that the price of goods and services is determined by the interactions of millions of individuals’ maximising utility. In this view money remains the central as medium of exchange, store of value that can be exchanged for other commodities.

Essentially, the notion of money as a commodity instils a sense that the value is inherent in the token and/or the token represents tangible sources of wealth rather than representing more abstract sources of wealth.

Economic and Social View of Money: the Sociological Perspective

Social scientists did not study the social production of money *per se* but focused on understanding the social effects or social meanings of money, i.e., the value of money as a social tool- particularly as it relates to status and power (Eatwell, Milgate and Newman, 1989). They agreed that ‘money’ and the meanings accorded the concept are socially constructed (Ingham, 2004; Zelizer, 1994). This essentially means that the measure of value depends on human judgement, which is a result of social interaction and agreement. Initial sociological theories of money were dominated by three scholars, Weber, Parsons and Simmel. Weber dealt with many sociological issues and with issues relating to money – he did not however devote much space to monetary theory and his theories are primarily economic and drawn from Knapp’s 1905 *The State Theory of Money*. Weber incorporated both the economic view of money and its social components within one context. Viewing the significance of money to a society lies in the interplay of supply and demand to indicate price of a commodity and money’s role in a society is to provide individuality of person, personal freedom and intellectualism. He took the view that the most important element in the notion of money is not the existence of commodity money as a medium of exchange, but the problem of assigning values to all product and services in social setting.

Talcott Parson’s view of money dominated sociological thought for many years. Parson took a functional approach to money, viewing it as a mechanism for controlling resource processes and emphasizing its link to power. He argued that money is simultaneously both a measure of value and a medium of exchange and it can function as both a facility and a reward. Power is a step above money in the hierarchy of control mechanisms because power can control a monetary system. Ingham (2004) points out that the Parsonian sociology of money failed to take into account not only that domination derives from the position of money but also it derives from the control of actual process of money production by states and banks.

Habermas, Luhmann and Giddens all followed the concept of money as a symbolic token of interchange (Ingham, 2004). Simmel proposed that value of money is the representation of abstract value that is not derived from cost of its production, supply and demand or labour time value- rather it is “the value of things without the things themselves’ (Simmel, 1907, p.21). According to Turner (1999) Simmel viewed money as a medium that generates individuality, personal freedom and intellectualism with the ability to create social class hierarchies within a society (Turner, 1999).

During the 1950s, researchers began to examine the concept of money from a cultural perspective. Mauss (1914) observed that money is “essentially a social fact”, and attaches to a variety of social relations rather than to individuals. The notion that cultural values and social relationship also shape the meaning of money is now widely accepted (Baker and Jimmerson, 1992; Poggi, 1993; Zelizer, 1994; Dodd, 1994; Carruthers and Babb, 1996; Wuthnow, 1996; Singh, 1997; Zelizer, 1989). Zelizer (1994, p.18) contends that money can be seen as socially constructed, shaped by social relations and as something that also....*exists outside of the market and is profoundly influenced by cultural and social structures. In addition, ‘values and social relations reciprocally transmute money by investing it with meaning and social positions’.* The meaning of money changes, dependent on use; domestic (shopping/grocery), investment, inherited, gifted For example, money that enters the household can come from a number of sources- incomes from employment, welfare money and other sources. Each type of money is regarded as different and use and status can differ (Bohannan, 1955 and Douglas, 1967 cited in Singh, 2000; Singh, 1994, cited in Singh 2000, p.4; Zelizer, 1994).

Singh (1997) suggests money has a different meaning across different contexts. For instance, a joint account in marriage shows trust and togetherness. Demosthenous, Robertson, Cabraal, and Singh (2006) explored cultural identity and financial literacy among Australian Aboriginals. They conclude that cultural identity shapes the meaning of money and money management practices. Fleming et al., (1997) suggest that the meaning of money changes based on the medium of payment. The study contrasted forms of payment using credit card payment and cash payment for the ritual of a Maori funeral in New Zealand.

The Singh and Slegers (1998) investigation of the use of electronic money in the home and by small business show that the use of a particular form of payment and transaction mode is influenced by purchase type, for example, payment by cash is still widely used for grocery shopping as cash gives immediate information on the money in hand, the money that is spent and the money that is left.

Pahl (1999) found that the use of electronic systems varied inter and intra households. The study also indicated that education and gender play a significant role in the use of electronic based payments. Education provides the necessary knowledge to make use of new forms of electronic media and so correlates with use. Men tend to be heavier users of credit card- perhaps do to availability credit. Singh and Ryan (1999) also made similar observations. Further, Simester and Prelec (2001) suggest that older consumers tend to have better money management skills using cash compared to electronic cards.

Economic Exchanges and Modes of Payment

Though trade in the domestic market was facilitated by the use of tokens in the context of business (commercial) exchanges, the use of bills of exchange / certificates payable to bearer has a long history. While it is difficult to identify the exact time and place when the practice started there is some consensus that the practice was prevalent in the middle ages in Europe and the Middle East as a method of settling accounts in international trade. Because traders would move from place to place to trade wares and did not want to carry gold/bullion, a network of moneychangers issued documents redeemable for hard currency. These documents could be cashed at different places within a country, in a different country or in the future at the same location. If redeemable at a future date, they would often be discounted by an amount comparable to a rate of interest. Eventually, for efficiency the practice formalised and formed the basis of modern day banking system. The basis of modern day banks is linked to the Bank of Venice (established in 1171). In the 17th Century, the Bank of Amsterdam refined the process. Apart from establishing a method for settling accounts without the actual transfer of coins (usually gold) at the time of purchase the Bank of Amsterdam only dealt with coins of full weight (non-debased) and quality and so the value of the token was maintained. This type of coinage was labelled bank money. Payments made in "bank money" were preferable to payments made in "current money," owing to the established value of the former. Such payments or transfers were made by means of orders required to be presented by the payee in person, or his authorized agent, but the payee did not receive the credit for the transfer until the following day. This is the first exemplification of the cheque system. Laws were enacted that required that all Bills of Exchange payable in Amsterdam should be settled for by transfers in the bank, and this had the advantage of assuring foreign holders that exchanges on Amsterdam would be paid in standard money, thereby giving stability and uniformity to exchanges and encouraging foreign trade.

Historically, therefore commercial exchanges were frequently effected without the actual handing over of coin or bullion at the time of purchase. By the 19th Century, bills of exchange were capable of being 'wired' between parties and by the end of the 20th Century a sophisticated system of electronic/online banking was in place. In the domestic market, day to day transactions were primarily via coins (and by the 19th Century, paper notes); the value of which, in modern societies, is set by government treasury officials. By the 20th Century the use of cheques in the domestic market became widespread. The use of cheques allowed a time distance between the purchase and delivery of payment and removed the experience of a tangible exchange of cash. When banks made credit available to their customers in the form of a bank credit card, like cheques they involved manual processing, delayed debit and the

use of borrowed money. The introduction of internet based EMTS reduced the amount of manual processing and increased the immediacy of transfers. Though the use of cards, linked to some form of credit facility, dominates domestic (consumer) markets, there is an increasing acceptance and use of debit/smart cards.

Ultimately gold coins were replaced with paper money and in order to be accepted, early paper money had to be guaranteed in gold. In effect early paper money (representative /fiat money) was essentially a promissory note - a promise to pay on demand, which meant that governments had to physically possess the equivalent amount of gold to the value of the promissory notes they had issued, in order to be able to make payment on demand should they be called upon to do so. A person could take his paper note to a bank and demand the face value be paid to him in gold coin, thus paper money became known as banknotes. For most of the 19th and 20th centuries many currencies were based on representative/fiat money through use of the gold standard.

During the period when paper money was backed by payment of gold on demand by many countries, and the paper money issued by some other countries was not totally backed by gold, in order to maintain a balance for the purposes of international trade the Gold Standard was introduced. The Gold Standard was a complex international arrangement, elements of which set the value of a nation's currency as a specific amount of gold and guaranteed to accept gold bullion and coin. It really only became fully achievable with the great nineteenth century gold discoveries in Australia, North America and Russia. Although the economic turmoil of the First World War ended the arrangement, efforts to get it going again continued into the early 1930s.

The shift to representative money required a psychological willingness on the part of the individual to accept a symbol in place of a physical object and a social willingness on the part of the collective to evolve organizations and systems of account that could gain and hold the public trust. In principle however there is nothing to stop governments from printing as much paper money as they wished, except for the inescapable fact that in doing so, they inevitably increase inflation within their own country, and devalue their currency on international exchange markets. While many people still believe their paper money to be backed by gold this is no longer the case and the only currency with any gold backing today is the Euro with a token backing of 15% gold.

In the case of commodity money, trust was placed in the inherent value of the metal or other commodity which constituted the form of payment. In the case of receipt, trust was extended from the commodity to the social organization that held the commodity (bullion) and issued the receipts. The shift to representative money required a psychological willingness on the

part of the individual to accept a symbol in place of a physical object and a social willingness on the part of the collective to evolve organizations and systems of account that could gain and hold the public trust.

Though the use of money has been a facet of societies for millenniums, formal discourse on money as an economic and social phenomenon emerged during the 17th Century, initially addressed by philosophers and economists, by the 20th Century social anthropologists also presented views on the role and function of money in society. Much is written about money as an economic and social phenomena and a brief overview of this literature is described. Shefrin and Thaler (1988) argues that the money in one mental account is not a perfect substitute for money in another account. This is because people tend to categorise income and expenditure into different mental accounts and treat money differently depending on how it is labelled, thereby, violating the normative principle of fungibility (commodities that can be traded or substituted for an equal amount of a like commodity). According to the normative principle of fungibility- at the point of purchase, a mental accounting is opened and decision to purchase is based on evaluation of perceived benefit and cost of purchases rather than the payment form used (Prelec and Lowenstein, 1998).

Appendix 2: Projective Tasks- Workbook

Focus Group Facilitator Details:

1. Dr Catherine Frethey-Bentham

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AUT University

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PhD Supervisor
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WORK BOOK

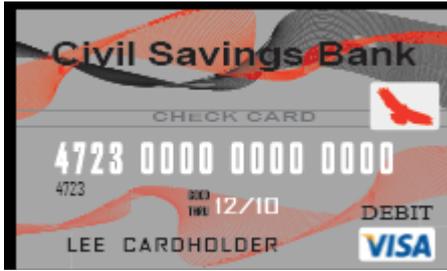
TASK ONE

For this activity you will be asked to think about the objects presented to you. We are interested in your ‘top-of- mind’ responses. These are responses that should not spend time thinking about- in essence they would be the first words/thoughts that come to mind. For this reason we would like to suggest that you complete each task in around three minutes.

Activity One:

This debit card will only allow you to access \$100 - that is; it has money stored in it to the value of \$100.

What thoughts and feeling come to mind, list the words that come immediately to mind. Do not analyse your responses. Do not think about the words. Just write down your first thoughts- even if you think they are odd or strange. Try to complete the task in no more than 3 minutes



Activity Two

We would like you to pretend, imagine that this card is a shoe (refer to list of shoes/characteristics provided) and write down what type of shoe best describes the card.

TASK TWO

For this activity you will be asked to think about the objects presented to you. We are interested in your ‘top-of- mind’ responses. These are responses that should not spend time thinking about- in essence they would be the first words/thoughts that come to mind. For this reason we would like to suggest that you complete each task in around three minutes.

Activity One

Hold this \$100 note. What thoughts and feeling come to mind, list the words that come immediately to mind. Do not analyse your responses. Do not think about the words. Just write down your first thoughts- even if you think they are odd or strange. Try to complete the task in no more than 3 minutes



Activity Two

We would like you to pretend, imagine that this \$100 cash is a shoe (refer to list of shoes/characteristics provided) and write down what type of shoe best describes the note.

TASK THREE

For this activity you will be asked to think about the objects presented to you. We are interested in your 'top-of- mind' responses. These are responses that should not spend time thinking about- in essence they would be the first words/thoughts that come to mind. For this reason we would like to suggest that you complete each task in around three minutes.

Activity One

Hold this \$20 note. What thoughts and feeling come to mind, list the words that come immediately to mind. Do not analyse your responses. Do not think about the words. Just write down your first thoughts- even if you think they are odd or strange. Try to complete the task in no more than 3 minutes



Activity Two

We would like you to pretend, imagine that this \$20 cash is a shoe (refer to list of shoes/characteristics provided) and write down what type of shoe best describes the note.

TASK FOUR

Money received as gift:

- (a) Imagine yesterday was your birthday, and a special person (parent, sibling or best friend) gave you a birthday card. You opened the envelope and found a NZ \$50 note in cash.

What thoughts and feelings come to mind? List the words that come immediately to mind. Do not analyse your responses. Do not think about the words. Just write down your first thoughts - even if you think they are odd or strange. Try to complete the task in no more than 3 minutes.

(presented on separate pages)

- a) Imagine yesterday was your birthday, and a special person (parent, sibling or best friend) called you in the morning to let you know that they had direct debited \$ \$50 to your account. . Write one or two sentence that describes how you feel about the gift, and then list those words that come to mind associated with your feelings.

TASK FIVE

Shopping experience using cash

Consider the following scenario and write a brief paragraph describing how you would behave in relation to the type and number of things you would buy.

Your salary was deposited into your bank account that you use for day to day expenses and bills. Any money remaining after you have paid for the expenses is transferred to savings account end of every month.

Think of a weekly grocery shopping in a supermarket where you budgeted to spend only \$200 and you only have the option of using **cash** to pay for the purchases.

Write few sentences describing how you would behave in relation to the type and number of things you would buy.

TASK SIX

Shopping experience using 'Debit Card'

Consider the following scenario and write a brief paragraph describing how you would behave in relation to the type and number of things you would buy.

Your salary was deposited into your bank account that you use for day to day expenses and bills. Any money remaining after you have paid for the expenses is transferred to savings account end of every month.

Think of a weekly grocery shopping experience in a supermarket where you budgeted to spend only \$200 and you only have the option of using your 'Debit Card' to pay for the purchases.

- a) Write few sentences describing how you would behave in relation to the type and number of things you would buy.

TASK SEVEN: Human traits/characteristics

Activity one

Tick five traits/characteristics that you associate with the \$20 note:

➤ Attractive	➤ Care free	➤ Happy
➤ Problem solver	➤ Energetic	➤ Honest
➤ True	➤ Fashion	➤ Comfortable
➤ Independent	➤ Easy going	➤ Hard working
➤ Not serious	➤ Traditional	➤ Religious
➤ Polite	➤ Soft spoken	➤ Responsible
➤ Messy	➤ Lazy	➤ Spiritual
➤ Relaxed	➤ Open minded	➤ Knowledgeable
➤ Confident	➤ Multi-tasking	➤ Power
➤ Status	➤ Goal seeker	➤ Creative
➤ Value	➤ Quality	➤ Adventure
➤ Achievers	➤ Aggressive	➤ Greedy

➤ Pleasure	➤ Passion	➤ Alternative
➤ Sporty	➤ Fun seeking	➤ Expensive
➤ Stylish	➤ Wealthy	➤ Casual
➤ Dependable	➤ Dominant	➤ Active
➤ Assertive	➤ Restrained	➤ Quiet
➤ Sensitive	➤ Delicate	➤ Vigorous

Activity Two

Tick five traits/characteristics that you associate with the \$100 note:

➤ Attractive	➤ Care free	➤ Happy
➤ Problem solver	➤ Energetic	➤ Honest
➤ True	➤ Fashion	➤ Comfortable
➤ Independent	➤ Easy going	➤ Hard working
➤ Not serious	➤ Traditional	➤ Religious
➤ Polite	➤ Soft spoken	➤ Responsible
➤ Messy	➤ Lazy	➤ Spiritual
➤ Relaxed	➤ Open minded	➤ Knowledgeable
➤ Confident	➤ Multi-tasking	➤ Power
➤ Status	➤ Goal seeker	➤ Creative
➤ Value	➤ Quality	➤ Adventure
➤ Achievers	➤ Aggressive	➤ Greedy
➤ Pleasure	➤ Passion	➤ Alternative
➤ Sporty	➤ Fun seeking	➤ Expensive
➤ Stylish	➤ Wealthy	➤ Casual
➤ Dependable	➤ Dominant	➤ Active
➤ Assertive	➤ Restrained	➤ Quiet
➤ Sensitive	➤ Delicate	➤ Vigorous

Activity Three

Tick five traits/characteristics that you associate with the \$100 stores in the debit/smart card

➤ Attractive	➤ Care free	➤ Happy
➤ Problem solver	➤ Energetic	➤ Honest
➤ True	➤ Fashion	➤ Comfortable
➤ Independent	➤ Easy going	➤ Hard working
➤ Not serious	➤ Traditional	➤ Religious
➤ Polite	➤ Soft spoken	➤ Responsible
➤ Messy	➤ Lazy	➤ Spiritual
➤ Relaxed	➤ Open minded	➤ Knowledgeable
➤ Confident	➤ Multi-tasking	➤ Power
➤ Status	➤ Goal seeker	➤ Creative
➤ Value	➤ Quality	➤ Adventure
➤ Achievers	➤ Aggressive	➤ Greedy
➤ Pleasure	➤ Passion	➤ Alternative
➤ Sporty	➤ Fun seeking	➤ Expensive
➤ Stylish	➤ Wealthy	➤ Casual
➤ Dependable	➤ Dominant	➤ Active
➤ Assertive	➤ Restrained	➤ Quiet
➤ Sensitive	➤ Delicate	➤ Vigorous

Appendix 3: Moderator Guide

When participant arrive:

- Register their names
- Point out facilities (e.g. toilet)
- Invite them to help themselves to refreshments
- Encourage participants to familiarise themselves with the environment and with each other

Introduction

Welcome to ‘Focus Group’ discussion at Auckland University of Technology. The data gathered from this focus group will form part of my PhD study. Thank you for making the time to join us this (morning/afternoon/evening). My name is ‘Jashim Khan’; I am the principle researcher for today’s session.

The session will last no more than two hours and will involve a range of individual activities and group discussion.

With your consent, we would like to audiotape the session. This will help to analyse the discussion material. It is essential that we speak one at a time. Otherwise, your valuable comments may be lost.

Your contribution to this discussion will be received in the strictest confidence. We do not need to identify you – so you are free to use your name- or not during the discussion. Please remember that this is a group discussion so you do not need to direct all of your points/questions to me. They are to be shared with all. The goal is to have an enjoyable and informative session. It is important that you feel comfortable. If at any time, you do not understand, or you feel uncomfortable with the session, please let me know so I can resolve any issues/problems.

The refreshments are available throughout the session and we have allowed for ‘micro’ breaks.

Objectives, activities and topics to be covered

The objective of this focus group is to understand the effect of payment mode on purchase behaviour. We cannot provide any further details at this stage as this may prime your responses and may bias the findings. If you want to know more about what I am researching I will provide information at the end of the session.

The focus group session will comprise a mixture of individual activities and group discussion. Some of the individual activities are based on projective techniques. A projective technique is a form of data collection whereby a person is asked to talk about an object and where the researcher does not provide any clues as to what type of information is sought. In today's session you be asked to hold (and thus view) notes of varying denominations and to hold (and thus view) a debit/smart card. You will be asked to think about a number of situations and articulate your thoughts and feelings. Once the activities are complete you will be asked to discuss and share your views on these activities.

We are interested in your 'top-of- mind' responses. These are responses that you do not spend time thinking about- in essence they would be your feelings and thoughts that you could express through the first words/thoughts that come to mind. For this reason we would like to suggest that you complete each task in around three minutes, no more than that.

If you find instructions hard to understand, please feel free to ask the moderator. Here, I will explain some frequently asked questions before we start the focus group session.

What do we mean by cash, and a debit card?

For this research we are only interested in 'owned money', i.e. your money in savings or in cheque account not borrowed money in any form i.e., loan of cash, credit (via credit card or line of credit) or overdraft.

Cash – means paper currency and coins that are liquid and can be exchanged anywhere anytime.

Debit cards. Here we need to understand the difference between a card that allows you access to your own money whilst allowing to also access a 'credit' amount that is available via a credit account or line of credit. A credit account will have a Visa or Master card platform- and in some instances so will a line of credit. In this instance we need to think about a 'debit' card. This card does not have any links to any form of credit. You can only access your stored or accumulated savings. A debit card can be used in a retail setting and you gain access via the use of a pin number. It is important that you understand this distinction so please ensure that I have explained this to your satisfaction

Is this my money? i.e., money that I have earned (or been given as a gift).

Yes. When you are asked to imagine/think of cash or money stored in debit card in tasks involved in the focus group this is only stored or accumulated funds. The money is not accessed via credit in any form.

Ground Rules:

Role of moderator – act as a facilitator and in control on the direction of the discussion, intended flow of the discussion and level of openness. Observers – note taker- additional perspective to interpreting results and bringing back discussion to intended direction. Different people have different views about the same topic and all views are valid and

important. Individual opinions and feelings would be valued and not to be judgemental and finally, speak one at a time and as clearly as possible.

Moderator Guide: Data collection stage

Date:	Moderator:	Total: 2 hrs 0 mins		
	Focus Group Number:			
Topic	Description	Aids	Duration	Start at
Pre-meeting refreshments			10	e.g. 9am
Introduction	- The objective of the project; activities and topic covered - Practical issues: alert to audio taping, confidentiality, and sign consent form	Forms in booklet	10	9.10
Warm-up discussion (optional)	Discuss your thoughts and feelings when using cash to pay for something and compare your thoughts and feelings when paying by debit card.	Brainstorming -Flip chart provided	10	9.20
Task One	Debit Card			
Hold \$100 in Debit card	-Hold this debit card and imagine there is \$100 stored in it. How does this make you feel? What thoughts do you have? List the words that comes to your mind	Sample, scenario and form provided	3-5	9.40
\$100 stored in debit card and personality profile	Imagine that this \$100 is a shoe- 'who' that person could be, for instance, what characteristics/personality traits would it display -write a sentence and then select traits from the list	List of human trait provided	5-10	9.45
Task Two	\$100 Cash			
Hold \$100 cash	Hold this \$100 cash. How does this make you feel? What thoughts do you have? List the words that comes to your mind	Sample, scenario and form provided	3-5	9.55
\$100 cash and personality profile	Imagine that this \$100 is a shoe- 'who' that person could be, for instance, what characteristics/personality traits would it display -write a sentence and then select traits from the list	List of human trait provided	5-10	10.00
Task Three	\$20 Cash			
Hold \$20 cash	Hold this \$20 cash. How this make you feel, 1 What thoughts do you have its the words that comes to your mind	Sample, scenario and form provided	3-5	10.10
\$20 and personality profile	Imagine if this \$20 were a shoe- 'who' that person could be, for instance, what characteristics /personality traits would	List of human trait provided	5-10	10.15

	it display -write a sentence and then select traits from the list			
Feedback discussion	Please share your views/thought with others.		10	10.25
Break			5	
Task Four	Money as Gift			
Money received as gift	Imagine it is your birthday and you have received a \$50 in cash as a gift. Imagine it is your birthday where you received \$50 direct debited to your bank as a gift. Write one or two sentence that describes how you feel about these situations? What thoughts do you have	Scenario and form provided	10	10.30
Feedback discussion			5	10.40
Task Five	Payment Form & Purchase Behaviour: Debit Card			
Shopping experience using cash	Think of a weekly grocery shopping experience where you budgeted to spend only \$100 and you <u>only have</u> the option of using cash to pay for the purchases. Write few sentences describing how you would behave in relation to the type and number of things you would buy. Discuss thoughts and feelings when using cash to pay for something and compare to your thought/feelings when paying by debit card.	Scenario and form provided	10	10.45
Task Six	Payment Form & Purchase Behaviour: Cash			
Shopping experience using debit card	Think of a weekly grocery shopping experience where you budgeted to spend only \$100 (irrespective of how much accumulated saving you have) and you <u>only have</u> the option of using your debit card to pay for the purchases.	Scenario and form provided	10	10.55

	<p>Write few sentences describing how you would behave in relation to the type and number of things you would buy.</p> <p>Discuss your thoughts and feelings when using debit card to pay for something and compare to your thought/feelings when paying by cash</p>			
Task Seven	Choose appropriate traits/characteristics that represents: a) \$20 cash b) \$100 debit card c) \$100 cash			
Ending session	Have participants add any views and comments that they think were not addressed in the discussion		5	

Appendix 4: Normality Test

Descriptive Statistics	Z Skewness	Z Kurtosis
Q6_Sensation_Debit	-4.27696	-0.95727
Q11_Spend_More_Cash	-4.23655	-1.11431
Q8_Restrict_Spending_Cash	3.4927	-1.86472
Q16_Reduces_Pleasure_sqrt	-4.06957	-2.01061
Q17_Secure_Cash_sqrt	-3.08265	-1.08977
Q28_Relaxed_Cash_sqrt	-3.37534	-2.07742
Q7_\$20Cash_Spen_sqrt	-4.07643	-1.67698
Q15_Cash_Wallet_Spent_sqrt	-4.88558	-1.41645
Q25_\$100_cash_Spent_sqrt	-3.09818	-1.7817

Appendix 5: Projective Tests- Themes

Nvivo Themes	Sources	References
Without worry shopping with debit card	8	9
Smart card feels lesser value	1	2
People get addicted to swipping card	2	2
No control over debit card spending	1	1
Money on card is not broken on purchase	2	2
Money in debit card unreal	11	14
Money in debit card is numbers and value	13	18
Indifferent to cash or debit payment mode	16	19
I will carry a calculator and a list	1	1
I hate to check balance	5	6
Hurts spending cash	2	2
Debit encourage spending on luxury item	2	2
Debit card provides illusion	6	7
Debit card means savings	14	15
Debit card means online shopping	1	2
Debit card means modern life style and freedom	9	14
Debit card links to grocery & over spending	18	23
Debit card is safe & secure	6	8
Debit card feels less restrictive	5	7
Debit card encourage spending	13	23
Debit card dulls the joy of purchase	2	2
Cash-Feelings \$100	19	20
Cash seen as token	1	1
Cash reduces the pleasure of shopping	3	3
Cash more control over money	5	5
Cash means unwise spending	5	7
Cash means savings	7	7
Cash makes me feel rich and happy	10	12
Cash limits spending	7	8
Cash is traditional	7	7
Cash is real	3	3
Cash is physical and reliable	14	17
Cash is opportunity & relief	7	9
Cash is more acceptable	9	10
Can't keep track of spending with debit card-pp	1	2
Calculated shopping with cash-p	20	23
	256	313

Appendix 6: Homogeneity of Variance Test

Descriptives								
Total_ \$								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Cash	52	111.6574	75.44634	10.66972	90.2158	133.0990	17.97	298.06
Debit	66	160.4323	93.45580	9.85111	140.8584	180.0063	18.19	408.09
Test of Homogeneity of Variances								
Total_ \$								
Levene Statistic	df1	df2	Sig.					
2.763	1	138	.099					

Appendix 7: Projective Tool (Debit Card)
