



HAS THE INTRODUCTION OF INNOVATIVE PAYMENT METHODS
AFFECTED THE SPENDING OF UNIVERSITY STUDENTS?
THE CASE OF CONTACTLESS PAYMENTS



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I declare that this dissertation is my own work, and that where material is obtained from published or unpublished work, that it has been fully acknowledged in the references.

Abstract

This thesis analyses the current payment landscape in the UK, in a period of increased digitisation and use of contactless payment. The aim of this thesis is to understand how innovative payment instruments like contactless cards and mobile payments, have affected the spending behaviour of students age 18-24. It investigates the rationale for such behaviour and explores the differences that arise when using traditional methods such as cash.

Using qualitative semi-structured interviews and questionnaire responses, this study builds on existing research and applies thematic content analysis to identify trends in student spending patterns when exposed to innovative payment methods. Further illustrated by quantitative regression analysis, the use of contactless payment methods, significantly influenced student spending habits. Common themes apparent from the analysis included a subconscious accumulation of small, impulsive purchases, as well as a reduced sense of guilt when using contactless payments. This was primarily attributed to the theory that in comparison to using cash for payments, contactless transactions are intangible and therefore do not feel like using “real money”.

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Chapter 1: Introduction

For many years, cash i.e. banknotes and coins have been the undisputed predominant payment method. However, the advent of electronic commerce in the 1990s saw a rapid growth of plastic payment mechanisms in the form of credit and debit cards. Such methods enable a tangible and time-delayed exchange of money and are now, the most dominant cashless payment methods used in developed countries (Judt, 2006). The USA highlights this extremely clearly, with statistics showing that in 2017, more than 70% of consumers made most of their payments with credit and debit cards.

The evolution of e-commerce transactions (electronic commerce), documents the innovation in payment markets. It seeks to increase the efficiency of economic interactions, thus minimising operation and transaction costs of purchases and improving the social welfare costs of payments (De Reuver et al, 2015). Originally, a consumer's payment was accompanied by the payer's signature, but this was later offset by the introduction of 'chip and pin machines'; where information was stored in a chip within the card and then verified by the payer inputting a Personal Identification Number (PIN) into the machine (Lee et al, 2015). In theory, this system offered greater security against fraud to both the consumers using the cards and the banks that issued them. However, criminals were often able to find ways to override these in-built security systems and use the cards for fraudulent purposes. The introduction of contactless cards in 2007, provided a solution for card issuers to underwrite compensation payments where the cards were used for fraudulent reasons, but also sped up the paying process at the Point of Sale (POS) (Olsen, 2009). They were readily adopted by consumers and merchants alike, as they offered a convenient alternative to remembering PIN numbers or carrying around vast amounts of cash on their person.

The smartphone boom of the mid-2000s catalysed the design of new payment methods adapted to the era of digitisation (de Kerviler, Demoulin, and Zidda, 2016). Such methods include contactless payment as well as app-based transactions in the form of Apple Pay and Android Pay. Slade et al (2015), argues that the development of contactless payment (card and mobile payments alike), represents the most dramatic innovation for financial service providers since the introduction of online banking.

From economics, information systems and psychology-based consumer research, payment research is a multi-disciplinary area that has been continuously investigated by scholars. The most dominant stream of research concerns how consumer behaviour is affected by various

payment methods (Soman, 2003). Previous studies have disputed traditional economic theory by citing that the representation of money and the payment instrument used, are what affect the willingness of a customer to spend (Hirschman, 1979; Prelec and Simester 2001; and Thomas et al., 2011). This notion includes both the physical form this money takes (cash, card or mobile) as well as how similar it is, to spending ‘real’ money (Prelec and Simester, 2001). These studies also explain that the method of payment used can have a significant influence on the amount of money a consumer is willing to pay for goods and services, as well as the volume and frequency of purchases they make (Runnemark, Hedman and Xiao, 2015). As a result of being a less physical payment format, present studies have placed specific emphasis on the idea that contactless methods, may lead consumers to spend more, compared to using more tangible methods such as cash (Trutsch, 2014). For instance, in 2017 in the US, 65.4% of a consumer’s monthly payments were made using credit/debit cards or mobile payments. But only 34.6% were made using cash (Schuh and Stavins, 2014).

Previous literature emphasises the cognitive tendencies of consumers after being exposed to innovative payment methods. However, there is no particular focus as to why or whether a consumer’s age explains why they use a payment method in particular. The inherent purpose of this study is to build on previous research by investigating in depth, why and how contactless payment methods affect the consumer behaviour of UK students. Pantano and Priporas (2016), state that young adults (18-24-year olds), possess a high level of technological competence and are therefore more likely to adopt innovative methods like contactless payments. Being one of the most ‘contactless-ready’ countries in the world, the UK is the ideal location for this study. Industry research shows that by 2025, cash will only be used to make 27% of all payments (Smart Payments Association, 2017), making the rationale for focussing on UK students two-fold.

The introduction of debit and credit cards was described by some economists as the first step towards a “cashless” society (Rosenberg, 2006). A cashless society is an economic state whereby financial transactions are conducted through digital payment means such as bank transfers and payment cards as opposed to through physical banknotes and coins (Thomas Ice, Timothy J. Demy, 1996). Therefore, the aim of this study is to explore the current payment landscape that exists in the UK and understand how the consumer behaviour of students is affected when being introduced to new and innovative payment methods. This will be achieved by critically assessing previous literature about the effect of payment innovations on consumer methods. Questionnaires and semi-structured interviews will be used to obtain qualitative data about student spending habits; which coupled with Probit regression, will allow a thorough understanding of the factors influencing student spending.

Chapter 2: Literature Review

For most people across the world, the making of payments is a frequent process with an embedded function in our daily lives (Runnemarm, Hedman and Xiao, 2015). Unlike previous generations, where the predominant payment method used was cash, consumers today have the freedom to choose from a variety of payment options.

2.1 History of Contactless Payment

The promotion of different technological innovations, such as credit and debit cards have meant a decline in cash usage. The current money system came as a result of paper notes emerging as the prominent way of exchanging in foreign trade (Trutsch, 2017). Payment methods had transitioned to cheques by the 19th century and payment cards (credit and debit cards) by the mid 20th century. The latter is now the primary method of payment in most developed countries. For example, in Australia, Canada and the United States, cash accounts for only one-fourth of the value of transactions. In contrast, there are still some cash intensive countries such as Austria and Germany, where the value share accounts to more than 50% (Bagnall et al, 2016). It is important to note that transferring money between payers and payees when organising economic transactions does not come without costs, referred to as transaction costs.

This was explained by Coase (1937) and Williamson (1985), in their papers about Transaction Cost Theory. They suggested that the main driving force behind the continued innovation in payment markets was to facilitate the transfer of value and make economic transactions more efficient. This minimises both the transaction costs of payments and operation, which determine the social welfare costs of payments. The most recent generation of innovative payment instruments, such as mobile and contactless payment, improve efficiency by taking advantage of the technological enhancements in data communication.

2.2 Contactless Payment Technology

Contactless payment is the most dominant electronic method of paying. It refers to acquiring tangible and intangible products, without the requirement of a PIN, giving cash or signing off a cheque. This technology is present in smart cards and key fobs but its most widely used instruments, are credit and debit cards. These allow payments in small proximity, known as Near Field Communication (NFC) (Shoba et. al, 2016). NFC combines various immaterial connection technologies and Radio-Frequency Identification (RFID), as defined in Wang (2008). Not only do current Wi-Fi and Bluetooth signals provide a somewhat seamless atmosphere for contactless payments, but NFC's relatively simplistic nature also enables harmonious solutions for

consumers engaging in contactless payments (Nagashree, Rao and Aswini, 2014). For consumers, contactless technology allows fast, secure and easy payments to be conducted for purchases of up to £30 (Smart Payments Association, 2017). In addition to reduced queues and waiting times for consumers, merchants reap the benefits of reduced cash handling costs and increased customer spending due to a more streamlined payment process (Pantano and Priporas, 2016).

However, like other forms of technology, despite its benefits, NFC still needs to overcome various barriers defined by both micro and macro environmental conditions (Markendahl, 2013). The most dominant of these barriers, preventing the integration of contactless payments into society, is the security risks relating to card fraud. Mainstream UK media channels frequently highlight the use of scam techniques to raise consumer awareness (Osbourne and Hartley, 2017; Curtis, 2015). Although there are evidently some customer concerns, in 2015, Financial Fraud Action UK reported that fraud on contactless cards accounted for only 0.5% of overall card fraud. Increasing usage figures emphasise that safety risks of contactless payment methods are being overcome, with Payments UK further forecasting that the value of contactless transactions will reach £9.5 billion by 2025 (Annicelli, 2017).

2.3 Mobile Proximity Payment (MPP)

In previous studies, mobile payments are defined as activities that use mobile technology to perform economic transactions (José Liébana-Cabanillas, Sánchez- Fernández and Muñoz-Leiva, 2014). Their close proximity and technological capabilities make them apt to complement a variety of payment scenarios (Slade et al, 2015). They can be categorised into two types: Remote Payment and Proximity Payment.

Remote systems authorise and facilitate transactions via an internet connection for e-commerce (Slade 2015; Williams and Dwivedi, 2013). The earliest forms included sending an SMS to pay for goods or services, which led to a charge to the consumer's mobile phone bill or a deduction from any prepaid tariff (Mallat, 2007). This study will focus on the use of proximity payment systems as opposed to remote. MPP differs to remote systems in that both the payer and payee are present in the same location when undertaking a transaction. Such payments are performed with smartphones and are facilitated by services such as Apple Pay and Android Pay. Instantaneous payments can be made by waving the card over the card reader. The enabled mobile device then communicates with the POS system using encrypted NFC (De Reuver et al, 2015; Lee et al, 2015). This incorporation of a contactless credit or debit card facility into an

NFC-enabled smartphone now provides consumers with a new and innovative payment method (Cocosila and Trabelsi, 2016).

A study by Visa Europe (2016), suggests that those who have already reaped the benefits of contactless cards are even more likely to adopt MPP. 52% of users of contactless cards declared their interest in using mobile payment compared to 32% of those who were yet to use contactless cards. Such figures suggest that it is imperative for providers of such services, to gain a deeper understanding of the factors that drive consumer acceptance. This will persuade consumers to overcome any initial scepticism of the innovation and other barriers that may hinder the acceptance of contactless technology (Slade et al, 2015).

2.4 Adoption of Technology Model

In order to understand the underlying reasons behind spending habits and the increased dependence of NFC payments, it is important to apply established theoretical models, in order to understand the integration of technology adoption into society.

The micro process involved in an individual's decision to adopt an innovation is referred to as the Theory of Adoption. Trutsch (2014), states that there are five consecutive stages through which this occurs: Knowledge, Persuasion, Decision, Implementation and Confirmation. When analysing consumer behaviour, as a result of previous experience and inherent knowledge of the society they live in; consumers are more likely to form opinions about the innovation in the Persuasion stage. Although it is important to understand the role of all five stages, the first three: Knowledge, Persuasion and Decision respectively, are considered to be the most important in terms of providing an accurate assessment of consumer intent.

The framework used to predict this user acceptance is known as the Technology Adoption Model (TAM). Its two main characteristics include Perceived Ease of Use (lack of complexity of mobile payments) and Perceived Usefulness (enhanced efficiency and time-saving benefits) (Trutsch, 2014). Although the TAM Model, has been reliable in providing analysis on user technology adoption, it has limited applicability; being primarily developed to assess employee acceptance of new technological systems in the workplace (Slade et al, 2015).

A more rigid application for assessing technology acceptance is through the Unified Theory of Adoption and Use of Technology 2 (UTAUT2). Venkatesh, Thong and Xu, (2012), discussed that the four main variables of the theory included: Performance Expectancy, Effort Expectancy, Social Influence and Perceived Risk. When applying UTAUT2, Performance Expectancy and

Perceived Risk had the strongest influences on behavioural intention (Slade et al., 2015). Both Performance Expectancy and Effort Expectancy were the most significant factors with regards to consumers' expected gains and overall adoption. (Oliveira et al., 2016).

2.5 Consumer Payment Choice

Several empirical studies highlight the positive correlation between this increase in a consumer's expected gains and the more inclined nature to spend, as a result of owning a contactless method of payment (Feinberg 1986; Hirschman 1979; Prelec and Simester 2001).

Data from several such studies come from the Federal Bank of Boston's ongoing research program: The Survey of Consumer Payment Choice (SCPC). The SCPC is a series of annual surveys that aims to gain a comprehensive understanding of the payment behaviour of U.S consumers. One of the earlier studies, carried out in 2006, emphasised the use of seven different payment systems: cash; cheque; debit card; credit card, store-valued card; automated clearing house payments and online banking. It contained 69 questions comprising of the following components: Adoption and use; Reasons for payment behaviour; Respondent assessments of their payment characteristics; Respondent demographics and Miscellaneous payment attitudes and experiences.

The study was incredibly successful and provided analysis on a variety of greatly expanded demographic variables. However, it was subject to two limitations. Firstly, it excluded respondents under the age of 25, who may have or share most of the financial responsibility in their household. Additionally, only the adopters of the payment instruments included were asked about their perceptions, thus preventing adequate analysis of payment adoption regressions amongst the population.

The 2006 consumer survey was extended and improved in 2008 to allow better estimation. Such changes included having nine types of payment instruments compared to seven. These included: cash; cheques; money order; travellers' cheques; credit, debit and prepaid cards; online banking and electronic bank account deductions (using their bank account numbers). The study showed that the average consumer had 5.1 of the nine payment instruments and used 4.2 of these in a typical month. Debit cards were used more than cash, credit cards or cheques individually, but paper instruments were still popular and accounted for 36.5% of consumer payments. The survey's main finding was that variation in consumer payment behaviour was attributed to the differences in perceived characteristics of the various payment methods.

2.6 The Preference for Innovation

The 2017 SCPC enhanced previous versions and provided more detailed information, about the significance of mobile payments and other new and innovative payment techniques. The number of participants increased from 1010 in 2008 to 3099 in 2017, and payment methods had evolved. 92.3% of US consumers had a bank account and 44.9% had a non-bank account, the most common being PayPal. The table below shows that over the last three years, the adoption of bank accounts and non-bank payment accounts have been still, but that between 2015 and 2017, the adoption of mobile apps (i.e. Apple Pay, Android Pay), to make payments grew by 25%.

	2015	2016	2017
Checking account	91.1	90.7	90.8
Savings account	73.3	71.9	73.4
Nonbank payment accounts	48.8	43.3	44.9
Mobile apps or online accounts	40.4	41.9	52.1

Table 1: Adoption rates of bank and other accounts (percentage of U.S consumers)

Source: Survey of Consumer Payment Choice

In 2017, mobile payment users had increased from one fourth in 2015, to one third. Schuh and Stavins (2013) concluded that consumers' assessments significantly affected their decision to adopt and use payment instruments. Among all the payment instruments included in the survey, cash was rated the best for acquisition and cost but as expected, it was rated worse for security; presumably due to its high risk of loss. It is clear from the results, that consumers are more willing to adopt electronic payment methods, so as not to lose cash. This trait could be seen across all ages of consumers but was particularly concentrated to those between 18-24. This phenomenon will be analysed further in this thesis.

2.7 The Transition to a Cashless Society

Due to the increase in technological advancements and mobility, financial experts are predicting that the UK will become cashless by as early as 2030 (Collinson, 2016).

In order to accelerate the transition into a cashless society, The Smart Payment Association (2017) stated that central banks around the world are already looking to replace current cash services. The transition would mean benefits such as eliminating tax evasion, inhibiting money laundering as well as extending financial inclusion to underserved populations. Research on a cashless society is relatively exclusive and comes from the International Cashless Society Roundtable (ICSR). This is as a result of the fact that it is a relatively new phenomenon. However, as opposed to focussing on technological issues, the promotion of a cashless society should focus more on issues that affect consumer behaviour (Carton and Hedman, 2013).

Although there are many potential benefits of becoming a cashless society, such benefits may be overstated as a result of increased marketing. As digital payments can be recorded and monitored, a cashless society may mean the eradication of privacy, the diminishing of civil liberties and increased identity exposure (Sajter, 2013). The paper also cites that individuals may be subject to a cycle of distrust between governments and citizens; due to the constant supervision and digital trailing that accompanies the transition into a cashless society. The ICSR (2013) recognises that the consumer preferences of privacy and anonymity that accompany traditional cash payments may be a significant hindrance to complete cash withdrawal (French, 2014). Using physical payments, on the other hand, allow consumers to better control their everyday spending and therefore, acts as a further obstacle to a completely digitised economy (Runnemark, Hedman and Xiao, 2015).

2.8 Student Spending Habits

University students are the age group in particular, that are criticised for their lack of controlled spending (Neale, 2006; Supon, 2012). Student debt in the UK has reached questionable levels and can be largely attributed to both the introduction of the government-imposed loan system and the increased accessibility of commercial credit during the 1990s (Harrison et al. 2013). A study by Blackbullion stated that a third of university students blamed ‘unexpected expenses’ for their decline in personal finances. It was evident that students, in particular, were subject to the danger of overspending and incurring further debt, as a consequence of an increase in innovative payment methods.

The Prepaid International Forum (2016) identified a correlation between the adoption of mobile payments and a consumer’s age. The study was based on a nationally representative sample of 1000 UK adults and found that young people aged 18-24 were the earliest adopters of contactless technology. 49% stated that they had previously used the technology either frequently or regularly. Contrastingly, only 21% of those aged between 45-54 claimed to have used mobile payments. Although the study provides an insight about age being a dominant variable, it does not specify student demographics. Thus, although these results have significant relevance to this study, their unknown validity and likely bias, introduces limits.

2.9 Psychological Aspects

By addressing theories studied in Behavioural Economics, the driving forces of student spending behaviour can be overcome, making the limits above less impeding to the research (Prelec and Semster (2001); Soman (2003); Raghubir and Srivatsava, (2008)). A dominant approach cites that payment behaviour follows an intrinsic stimulus, external to an individual’s control, as

opposed to internal individual characteristics and physical determinants (Trutsch 2016). Research suggests that there may be a predominant inertia in payment composition despite the wide variety of payment instruments available (Connolly and Stavins, 2015; Humphrey et al, 1996).

Such explanations mainly come from market and consumer research and are consequently quite limited. Individuals are said to have both emotional and cognitive associations to different payment modes. These, in turn, influence the payment method selected, resulting in half of an individual's payment choices, being habitual. (Khan, 2011; van der Horst and Matthijsen, 2013). Acknowledging that consumer's behaviour is a 'product of habits' (Leenheer et al, 2012), this thesis aims to discuss whether this is a factor that influences student spending behaviour.

2.10 The 'Pain of Paying'

A behavioural concept introduced by Zellermyer (1996), and particularly relevant for the 18-24 demographic, is the 'pain of paying'. This correlates with the idea of students being attracted to contactless payments as a result of eliminating the need to carry around cash. Zellermyer (1996) addresses the emotions individuals experience when parting with money and 'annoyance' of physically making a payment. Using a credit or debit card eliminates the 'physical pain' of losing money, as it is in effect, not 'real' (Soman, 2001). Consumers are thus inclined to spend more willingly and frequently (Ariely and Silva, 2002). Coincidentally, Soman (2003), addresses the idea of the transparency of various payment methods. Being both tangible and visible, cash is the most transparent form of payment. Card and contactless payments, on the other hand, have much lower transparency. The lower the degree of transparency, the more willingly a consumer will spend (Soman, 2003).

In connection with the study conducted by the Prepaid International Forum (2016), payment choices are highly dictated by habits, for those aged 18-24. Students, therefore, become a prime target group when analysing the effect of behavioural concepts, such as 'nudging' (Thaler and Sunstein, 2008). 'Nudges' are small interventions that change the context of choice very subtly and act as non-intrusive influences on decisions. Van Hove (2009), reiterates this by emphasising the increased likelihood of changing payment methods as a result of external influences. However, research on how such behavioural concepts influence student spending habits, in particular, is inconclusive. Although 18-24-year olds are more technologically competent, it is important to see whether there are any other external influences that affect their decision to adopt innovative payment methods. An insight into this will be gained first hand from the target audience in the form of questionnaires and semi-structured interviews.

Chapter 3: Methodology

3.1 Research design

When understanding the approach behind a study, particularly when investigating the behaviour of individuals, one of the most valuable models to use is: “The Research Onion”. Like the layers of a physical onion, each metaphorical layer of the research onion, allows the researcher to consider the study’s aspects and all the ways in which the study can be conducted (Saunders, Lewis and Thornhill, 2016).

The outer two layers of the ‘onion’ refer to the theory and philosophy of the research approach, whilst the physical data collection techniques are tackled in the onion’s central core. As shown by the figure below, the methodological choice and strategies of the study are displayed in between the outer and central layers. Before conducting the study, it is imperative to make choices in each layer. In order to understand the assumptions made throughout the study, the researcher needs to define the study’s philosophy and then commit to a particular strategy (Crotty, (2012); Johnson and Clark, (2006)).

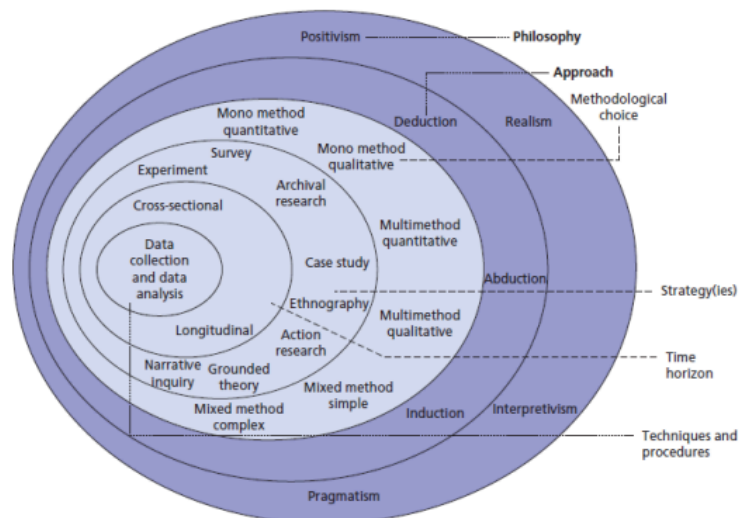


Figure 1: The research onion model Source: (Saunders, Lewis and Thornhill, 2016)

Additionally, to determine the study’s approach, it is important to understand the concept behind interpretivism and the subjective meaning of human behaviour (Bryman and Bell, 2011). In their paper, Saunders, Lewis, and Thornhill (2016), discuss that interpretivism emphasises the belief that human behaviour differs from physical phenomena. As opposed to testing, proving and predicting assumptions, the interpretivist approach contributes to the process of using inductive logic to build a theory (Pantano and Priporas, 2016). Interpretivism is particularly useful when conducting an in-depth investigation with small samples (Riley, 2001). Therefore, this is a dominant approach that I wish to use when conducting my own research.

3.2 Research Style- Qualitative

In order to effectively understand the effect of contactless payment methods on student spending behaviour, both qualitative and quantitative analysis methods are beneficial. In comparison to quantitative research, qualitative research broadens the understanding of both the strengths and actions of a phenomenon and investigates the reasons for human behaviour (Kothari, 2004). Creswell (2014), emphasises that using qualitative methods; comprising of interviews and questionnaires, are more suitable when a study is of an explanatory nature. The process of examining the relationship between the theory and its research findings should involve drawing general conclusions from the observations made (Bryman and Bell, 2011). This form of inductive logic is necessary, to thoroughly understand a consumer's payment experience.

3.3 Semi-Structured Interviews

When increasing knowledge for studies regarding human behaviour, interviews are considered to be both a powerful and effective tool (Kvale, 2007). Saunders, Lewis, and Thornhill (2016), class interviews into the following categories: Structured interviews, Semi-structured interviews and In-depth interviews. The most effective type relevant to this study is semi-structured interviews.

This is the only collection method that allows for a relaxed environment whilst maintaining consistency (Saunders, Lewis and Thornhill, 2016). The interview is conducted in a conversational manner, so that the participant can explore the issues that they feel are important, in greater detail (Longhurst, 2003). This also enables the omission of certain pre-set questions to ask follow-up questions that gain a more in-depth response. Dunn (2005) reiterates that semi-structured interviews, allow both a predetermined order and flexibility in the way that issues are covered throughout.

Although there are several advantages to conducting semi-structured interviews, it is important to highlight its drawbacks (Burton, Brundett and Jones, 2008). As opposed to obtaining figures from a study, the success of semi-structured interviews in providing high-value answers can be compromised due to the bureaucracy involved, during the interview process i.e. its transcription, analysis, interpretation and presentation (Gillham, 2005). Additionally, it is possible that participants may be dishonest to portray themselves in a positive light; making their answers unreliable (Kumar, 2014). It is important to note, that these interviews were conducted at a static point in time, due to the duration of the research project. This may introduce unreliability in the results.

This study's data was collected using an interview guide framed by Soman (2003) and Desai, Seenivasan (2011) and is outlined in Appendix A. There were five open-ended questions, which were then followed by single or multiple probing questions to allow the participant to express their opinion thoroughly.

The interviews were conducted between December 18th and December 22nd through the web-based platform Skype and lasted on average ten minutes. Using Skype, meant that the participant was able to complete the interview in a familiar location that would limit any distractions or social pressures (Saunders, Lewis and Thornhill, 2016). It also meant eradicating demographic bias, allowing participants to be sourced from multiple universities in the UK. All the interviews were recorded as opposed to taking handwritten notes, which would have been less reliable due to the disrupted rapport between the interviewer and interviewee (Cohen and Crabtree, 2006). Saunders, Lewis, and Thornhill (2016), suggest that the appropriate sample-size for semi-structured interviews ranges between five and twenty-five and that the number chosen, should be the number by which data saturation is achieved. For my study, this number came to be 9. For data analysis purposes, these recorded interviews were then transcribed, and are outlined in Appendix B.

3.4 Investigative Questionnaire

In addition to the semi-structured interviews, a further questionnaire was also created. The aim of the questionnaire was to target a larger population that was not covered by the interviews, to actively seek how contactless payments affected student spending (Malhotra and Birks, 2000).

Surveys can be distributed to students through various methods including, being sent by post, online platforms or being physically handed-out. The chosen method is usually influenced by cost and time efficiencies (Pallant, 2005). Keeping this in mind, in order to distribute and receive responses in a timely manner, the questionnaire was created on Google Forms, in the form of an online survey. In comparison to platforms such as SurveyMonkey, where free surveys are limited to only 10 questions, Google Forms allowed a free, reliable and well-known digital platform, where responses could be updated in real time.

There are three main elements to consider when designing a questionnaire (Malhotra and Birks, 2000).

1. Determine the main research questions
2. Select the appropriate format for each question (e.g. short answer, multiple choice)
3. The overall layout and question sequence

The questionnaire included a mixture of open and closed questions to eliminate potential bias and allow each participant to have their say. The survey was created using Google Forms, and the link was then shared via app-service WhatsApp. This meant that students were able to complete the survey in their own time and made the forwarding of the questionnaire to multiple participants more efficient.

3.5 Data Analysis

In order to efficiently and accurately interpret the findings of the data, Marshall and Rossman (2010) recommend integrating both data results and data analysis. Stata: Software for Statistics and Data Science was used to assist in statistical quantitative analysis (Pinzon, Enrique, ed, 2015). Stata has all of the most widely used statistical tests built into the software which makes statistical analysis by this method effective. Probit Regression was calculated using Stata, to test the reliability of the results received.

3.6 Quantitative Analysis- Probit Regression

When observing the consumption behaviour in students, there are two main variables that I wish to test. Since the dependent variables are both binary, the most appropriate analytical method to use is Probit Regression (Stock and Watson, 2007). The two main variables that will help to understand whether innovative payment methods affect student spending behaviour are:

1. Knowledge of bank balance

Yes =1

No =0

2. Financially fluency

Yes- Yes =1

Yes- Other/ No-No/ No-Other = 0

In essence, the financial fluency of an individual deems a yes or no response to the questions: “Do you know your current bank balance? and “Is this the amount you expected to have?”.

By testing these two dependent variables, and treating the remainder of the variables as independent, we can analyse the significance of each.

The Probit regression model with a single regressor X can be written as:

$$Pr(Y = 1|X) = \Phi(\beta_0 + \beta_1 X)$$

- Φ = Cumulative standard normal distribution

In the Probit model, the term $\beta_0 + \beta_1 X$, plays the role of ‘z’ in the cumulative standard normal distribution table in Appendix C. If β_1 in the equation is positive, then an increase in X increases

the probability that $Y = 1$; if β_1 is negative, an increase in X decreases the probability that $Y = 1$. Beyond this, however, it is not easy to interpret the Probit coefficients β_0 and β_1 directly because instead, the coefficients are interpreted by calculating and assessing the changes in probabilities.

To avoid any omitted variable bias, this model will include multiple regressors. The Probit model with multiple regressors extends the single- regressor Probit model by adding regressors in order to compute the z-value. Therefore, the Probit population regression model with two regressors, X_1 and X_2 is:

$$Pr(Y = 1|X_1, X_2) = \Phi(\beta_0 + \beta_1 X_1 + \beta_2 X_2)$$

The aim of the regressions above, is to see which variables are statistically significant in explaining why and how student spending is affected by innovative payment methods. Therefore, the two main regressions in my study will take the form:

Regression 1-

Bank Balance Awareness = f (β_1 Financial Literacy + β_2 Preferred method under 30 + β_3 Average transactions using mobile payments + β_4 Proportion using cash + β_5 Proportion using card + β_6 Proportion using mobile payments + β_7 Expected amount + β_8 Record of expenditure + β_9 Ask for receipt + β_{10} Careful checking of balance + β_{11} Worry about card theft + β_{12} Method used abroad)

Regression 2-

Financial Fluency = f (β_1 Financial Literacy + β_2 Preferred method under 30 + β_3 Average transactions using mobile payments + β_4 Proportion using cash + β_5 Proportion using card + β_6 Proportion using mobile payments+ β_7 Record of expenditure + β_8 Ask for receipt + β_9 Careful checking of balance + β_{10} Worry about card theft + β_{11} Method used abroad)

The above are the initial regressions containing all the variables. After being regressed, the variables which have a higher statistical significance will become clear. But, before conducting the regression, it is possible to predict the overall effect each regressor will have.

3.7 Bank Balance Awareness

As discussed previously, having knowledge of one's bank balance is a good indicator of whether someone is aware of their spending habits. The theory is that the more technologically innovative payment methods are used, the lower control one has on spending. Based on this hypothesis the

predicted significance of each regressor can be evaluated. Looking at the equation for regression 1 in section 3.9, it can be predicted that there will be more variables displaying a positive relationship as opposed to a negative relationship. The predictions for the effect of each variable are displayed in the table below.

<i>Positive Relationship</i>	<i>Negative Relationship</i>
Financial Literacy	Preferred payment method under £30
Proportion of transactions using cash	Average transaction using mobile payments
Careful checking of bank balance	Proportion of transactions using card
Worry about card theft and fraud	Proportion of transactions using mobile payments
	Ask for Receipt
	Is this the expected amount?
	Record of Expenditure
	Method used abroad

Table 2: Table showing the expected relationship between regressed variables and a student's current bank balance awareness

The variables listed under 'Positive Relationship', imply that as the value of these variables increase, so does the participant's bank balance awareness. This is because all of these variables require the student to be vigilant in one way or another on what they are spending on and how much they are spending. As the responses from the survey are coded, the higher numbers represent a higher level of awareness. When looking at the 'Negative Relationship' column, it is clear that the variables all concern innovative payment methods. This relates back to the original hypothesis of students becoming less aware of their spending and bank balance when exposed to new methods of payment. Although the relationship between some of the variables is negative, this does not mean that these variables are statistically insignificant. In fact, the variables that are expected to be the most statistically significant include:

- Financial Literacy
- Preferred payment method under £30
- Proportion of transactions using card
- Proportion of transactions using mobile payments
- Record of Expenditure
- Is this the expected amount
- Careful checking of bank balance

A similar analysis can also be conducted for the second regression of the study.

3.8 Financial Fluency

Section 3.9 describes Financial Fluency as a variable consisting of two parts: “Do you know your current bank balance?” and “Is this the amount you expected to have?” Regression 2 will, therefore, be similar to regression 1, but will not contain the variable: “Is this the expected amount?” The theory is that the more financially fluent an individual, the less negative the effect of innovative payment methods on their spending. Table 3 depicts the prediction of whether a regressor will display a positive or negative relationship with the dependent variable.

<i>Positive Relationship</i>	<i>Negative Relationship</i>
Financial Literacy	Preferred payment method under £30
Proportion of transactions using Cash	Proportion of transactions using card
Average transaction using mobile payments	Proportion of transactions using mobile payments
Record of Expenditure	Method used abroad
Ask for Receipt	
Careful checking of bank balance	
Worry about card theft and fraud	

Table 3: Table showing the expected relationship between regressed variables and a student's financial fluency

When evaluating the statistical significance of the regressors, the hypothesis for regression 2 varies slightly from regression 1. Here, the most statistically significant variables are likely to be:

- Financial Literacy
- Record of Expenditure
- Careful checking of bank balance
- Ask for receipt
- Proportion of transactions using card

After conducting both regressions, it can be determined whether innovative payment methods actually have an effect on overall student spending behaviour.

Chapter 4: Data Analysis and Discussion

4.1 Introduction

This section reviews the main findings of the study. Questionnaire and interview responses will provide an insightful context behind students' opinions on the study's hypothesis. Regression analysis will then be used to analyse whether the adoption of innovative payment methods, significantly affect student spending habits.

4.2 Description of Sample

The data set includes 9 interview responses and 110 questionnaire responses received during the course of the study. The questionnaire outlined in Appendix B contained a mixed format of questions. Segregating the multiple choice from descriptive questions for qualitative analysis, quantitative variables were coded as illustrated in Appendix D. From the analysis of student responses and Probit regression results, the five most distinct observations were based around the following areas:

1. Payment Tangibility
2. The Adoption of MPP
3. Inhibitors to Contactless Adoption
4. Contributors to Student Debt
5. The Implications of a Cashless Society

4.3 Qualitative Results and Descriptive Statistics

4.3.1 Initial Observations

Studies conducted by the Prepaid International Forum (2016) and Vista Retail Support (2016), emphasise that students aged 18-24 are the earliest adopters of contactless payment methods including MPP. This can be seen throughout the interview transcripts and regression analysis, where the majority of students highlight their preference to save time and effort during purchases. (Runnemark, Hedman and Xiao, 2015). In the interviews, most students cited that they rarely carry large amounts of cash on their person. Participant 1 stated "I feel like if I carry a lot of cash, I'd just spend it unnecessarily", and this was reiterated by participant 3: "I don't carry cash with around with me very often. At most I'd have like £1 if that."

Of the students who took part in the survey, 87.3% frequently use contactless cards or mobile payments on a daily basis, particularly for transactions under £30. This is due to the increased technical abilities of young adults and the widespread diffusion of contactless cards in society. When asked whether they agreed with the statement: "Mobile and contactless payments are

growing and will continue to grow in the future, 97.3% of students either agreed or strongly agreed; demonstrating the increasing adoption of contactless payment in society.

4.3.2 Payment Tangibility

Soman (2003) explains the various psychological effects contactless methods can have on a consumer before carrying out a transaction whilst Prelec and Simester (2001), allude to the more physical effects. Using methods like cash can increase awareness or ‘guilt’ that may accompany a transaction. In this study, it is seen that using contactless payment methods can often reduce or remove this stigma of guilt, as spending may not feel ‘real’. Many students outlined their experiences during the interviews, with participant 1 stating: “I feel like you just forget that money is actually leaving your account. You just tap your card and there, you’re done paying just like that.” Participant 2 emphasised this with: “When you’re using contactless, you don’t really need to think because it’s just so easy to pay and go. Because transactions usually have a low value, it doesn’t really affect you that much.”

The intangibility of mobile and contactless payments was further reiterated in the questionnaires when 110 participants were asked how much on average they spent per transaction when using such methods. Descriptive statistics show that the modal response was 2 (£5-£10) and the mean equated to 2.21. When the size of the transaction is so low, and there is no physical exchange of money, students express that they lack awareness of their expenditure. Participant 7 expressed this by saying: “If someone physically gave me my student loan as opposed to transferring it to my bank account, it’d definitely be harder to spend.”

Students were able to clearly differentiate between contactless card and chip and pin card payments. As participant 4 expressed: “The payment is less impulsive when you have to put your PIN in, compared to using a contactless card.” Participant 6 added to this by explaining the “slight hesitation” felt by the consumer when they see the amount on the screen. This may be why the mean response for the proportion of transactions carried out using cash, was only 1.48 compared to 3.21 when using mobile payments. The duration of the transaction is so small with contactless methods, that there is not enough time to feel the ‘guilt’ of the payment as opposed to the hesitation that accompanies tangible payment methods.

4.3.3 The Effect of Contactless Adoption on Spending

Many students cited that contactless payment methods fuel a lack of control and a higher need to spend excessively. As participant 1 emphasises, “all the little ones add up because it’s easy to spend £3 here and £3 there”.

Hooker's (2016) argument, is that an increase in impulsive spending may be as a result of financial illiteracy. As shown in the survey, only 50.9% of students keep a record of their expenditure (mental, paper, receipt), with only 6.4% always asking for a receipt after their purchases. Spending behaviour with respect to how the transaction process is remembered, changes in accordance with the payment mechanism used. From student responses, contactless payments are not remembered for long and therefore accumulate subconsciously. Hence, if students are unaware of their spending, there is an increased danger of persistent contactless payment usage.

4.3.4 Mobile Proximity Payment (MPP Adoption)

A number of research papers, such as Venkatesh, Thong and Xu (2012), and Slade et al (2015); have explored the adoption of MPP in relation to established technology adoption models. This study focuses on its effect on UK students.

As discussed in 2.3, performance expectancy and effort expectancy were seen to be the most influential determinants in the most recent extension of UTAUT2 (Oliveira et al, 2016). As contactless cards are limited to transactions up to £30, the majority of students predictably answered 3 (mobile payments), when asked which payment method they would prefer to use for a transaction within this limit. For transactions above £30, the majority responded with 2 (card) as opposed to 1 (cash). Having said this, standard deviations for both questions are quite low at 0.15 and 0.23 respectively, showing that there is little variance across the sample mean. Most participants were thus more likely to use more innovative payment methods if they were more available and appropriate to use. It is also noticeable that the answer for both of these questions was not cash; suggesting an overall tendency to adopt newer and more efficient methods of payment. 72.27% emphasised this when they answered no to having a minimum amount where they would only use cash.

Student observations expressed concern regarding performance expectancy. Participant 6 stated: "Sometimes it doesn't always work. There are times when I've had to take my card out. But it's very low effort because if I forget my wallet it's not a problem as I can use my phone". Participant 1 also expressed the worry of the payment not going through and hence being "charged twice".

4.3.5 Inhibitors to Contactless Adoption

Although many of the students referred to the increasing benefits of MPP, several of them were aware of the perceived security and trust issues accompanying it (Morini, Talamo and Dimitri, 2015). "I think security issues are always there in the back of your mind, like if you lose your

phone. And I'm pretty sure today people have ways of finding out personal information about you and can then take all your money out of your account." (Participant 3). In relation to Slade et al (2015), this risk is the most influential in deterring consumers from mobile payments. This reluctance was reiterated when the modal response by students was 7 out of 10 (10 being extremely worried) when asked how worried they were about card theft and fraud. Emphasised by a low standard deviation of 0.62, many students were aware that although contactless methods induce high efficiency, this may not mean high security.

Compared to mobile payments, many interviewees were more concerned with the fraud and security related to contactless cards. Most MPP services, such as Apple Pay are facilitated by biometric fingerprint authentication. This means that "even if you don't need to enter your PIN, there's still that encryption factor to it, making it safe." (Participant 2). This increased functionality of mobile phones was thus considered the driving force behind excessive spending.

4.3.6 Student Debt Contributors

UK students were selected as the focus of this research, partly due to their higher potential vulnerability to overspend as a consequence of financial illiteracy (Neale (2006), Supon (2012)). Both participant 5 and participant 9 cited student overdrafts and credit cards as the primary reasons by saying: "I think a lot of students tend to be careless with their money, relying too much on their student loan and overdraft without keeping track of their spending" and "You kind of just get used to having the loan and then you don't really think about having to pay it back", respectively.

Participants were asked to assess their perceived level of financial literacy on a scale of 1-10 and the mean response was 5.56. The answers had a standard deviation of 1.12, suggesting some variance in how literate individuals considered themselves to be. However, this not only emphasises a difference in opinion but urges investigation into the bigger picture. It is no wonder that a high proportion of students find themselves overspending or in high levels of debt, which is hence why they must be educated.

To further investigate this, participants were asked whether they knew their current bank balance, and how regularly they checked their bank statement. The hypothesis was that individuals who knew their current bank balance were those who checked their statement more regularly and were thus more aware of their spending. 69.3% of participants had the amount they expected in their account suggesting high spending awareness overall. However, the mean for carefully checking one's bank statement was only 3.99. This carelessness is what may lead students to be too lenient

with their spending when they should not be. When participants were further questioned as to whether they kept a record of their expenditure mentally or by asking for a receipt, results showed a difference of only two people, suggesting that almost half of the sample do not keep track of their expenditure. Taking this into consideration, this study agrees with the observations in Bain (2014). Students aged 18-24 are the ones more likely to risk overspending as a result of increased use of innovative payment methods.

4.3.7 Implications of a Cashless Society

Due to the increased use of contactless payment methods, predictions cite that cash may rescind in favour of digital transactions (Hedman 2012; Markendahl, 2013). A cashless society is a relatively recent phenomenon, which makes it hard to accurately predict its effects on consumer behaviour. The need for constant monitoring by banks and merchants and the loss of anonymity when paying are examples of obstacles identified by the ICSR and scholars alike. Unlike what was suggested in Sajter (2013), most of the participants were not aware of the consequences of a cashless society.

Some students suggested potential benefits of the complete digitisation of payments including “reducing the underground economy and money laundering” (Participant 6). Others expressed that it would be hard to completely eradicate cash in the foreseeable future. As participant 9 pointed out: “If you don’t know someone that well, you’d rather give them cash instead of your bank details.” This is the general consensus when spending abroad. Owing to different currencies, exchange rates and environments, 71.8% of participants stated that they were more likely to use cash when abroad. Standard deviation was only 0.4, which suggests that the majority did believe, there would always be at least a few situations where cash usage was more favourable.

The final interview question asked students to consider how their own spending behaviour would be impacted if the UK became a cashless society. Responses varied with some like participant 5 citing it as an advantage: “It’d make everything a lot easier day to day.”; but with others like participant 8 highlighting the idea’s shortcomings: “There’s no physical interaction so people will just be inclined to spend more with no limit.”

From both the survey and interview results, it is clear that a large proportion of students rely on contactless methods when carrying out transactions. Cash was the least cited method of payment highlighting the emergence of a digital era. However, although the students were able to describe the benefits of contactless methods, there was a lower understanding of problems such as

overspending, student debt, and fraud and security issues. The answers received from the interviews and questionnaires give an in-depth insight into student spending decisions. However, it is important to conduct a quantitative analysis to emphasise the proposed arguments.

4.4 Quantitative Regressions

The interviews and questionnaires contained questions that can be described as regressive variables, affecting student spending habits. The participants' answers emphasised the importance of two variables in particular; bank balance awareness and financial fluency. Using the regression functions outlined in the methodology, the following quantitative analysis provides further insight into the study's main objective.

4.4.1 Awareness of current bank balance

The first dependent variable that helps determine the relative importance of innovative payment methods on student spending is whether students are aware of their current bank balance. Innovative payments are both efficient and time-saving and when spending “£1 here and there”, keeping track of small transactions can be difficult. By producing a graph, we can examine the difference between using mobile payments and using cash, on a daily basis.

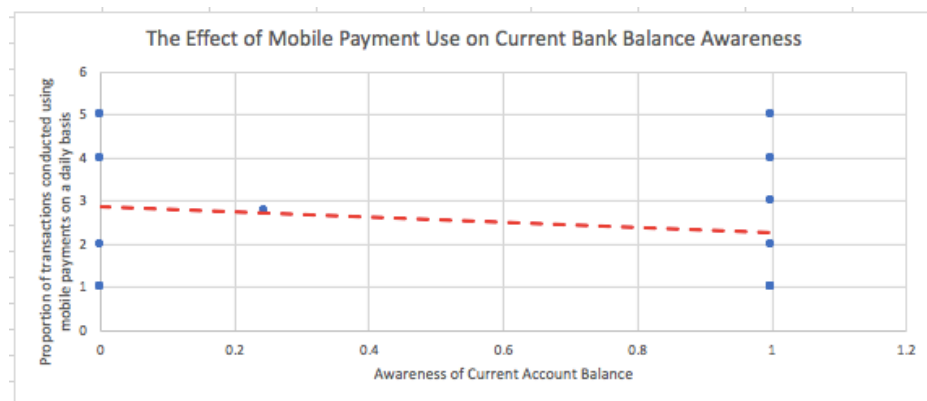


Figure 2: Graph showing the effects of mobile payment on the awareness of current bank account balance

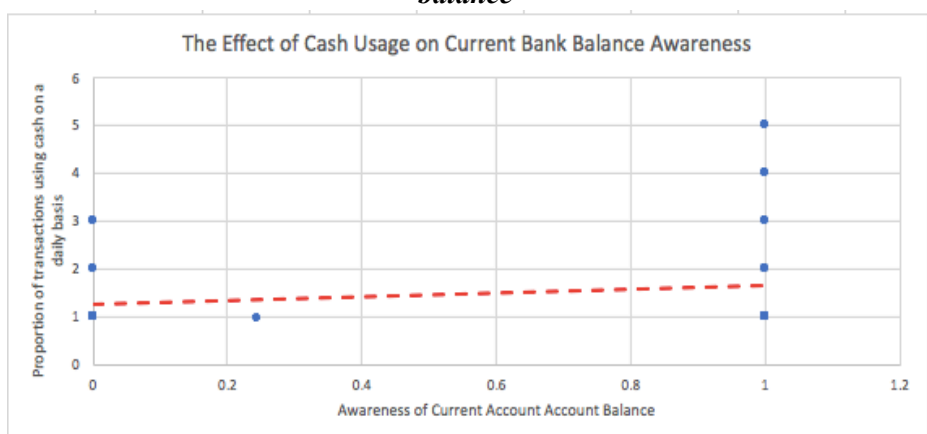


Figure 3: Graph showing the effects of cash usage on the awareness of current bank account balance

As shown in the graphs above, the effects of mobile payments and cash usage on the investigative variable differ. In Figure 2, the downward sloping trend line, suggests a negative correlation between mobile payment usage and a student's awareness of their current bank account balance. Therefore, the higher the proportion of transactions using mobile payments, the lower a student's bank balance awareness. This coincides with observations from the interviews and questionnaire. When using cash, there is a higher level of guilt attached to the payment with the student being more inclined to think about the necessity of their purchase. Using mobile payments gets rid of this as consumers simply 'tap and go'. By using cash as their predominant payment method, a student can easily keep track of their spending on a daily basis and consequently be more aware of their bank balance. This is indicated by the positive trend line displayed in Figure 3.

Although the graphs indicate a relationship between increased mobile payment usage and bank balance awareness; a more formal method of illustrating this relationship is through regression analysis. By regressing the variable "*Bank Balance Awareness*", it will be possible to analyse which statistical significance of the possible regressors influencing student spending habits.

Probit regression						Number of obs	=	110
						LR chi2(13)	=	101.54
						Prob > chi2	=	0.0000
Log likelihood = -24.310781						Pseudo R2	=	0.6762
current_ba~s	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]			
financiall~y	.3185308	.1601595	1.99	0.047	.0046239	.6324376		
prefe~der_30	-.8657692	.7008828	-1.24	0.217	-2.239474	.5079358		
average_wh~o	-.0155636	.2921227	-0.05	0.958	-.5881136	.5569863		
proportion~a	-.4654824	.5003807	-0.93	0.352	-1.446211	.5152458		
proportion~r	-.5798297	.2673381	-2.17	0.030	-1.103803	-.0558566		
proportion~o	.053446	.2785443	0.19	0.848	-.4924907	.5993828		
is_this_ex~t	-1.666472	.3517664	-4.74	0.000	-2.355921	-.9770221		
record_of_~e	-.2831695	.2170895	-1.30	0.192	-.7086571	.1423181		
ask_for_re~t	-.0172086	.082175	-0.21	0.834	-.1782686	.1438515		
careful_ch~e	.2259043	.3258968	0.69	0.488	-.4128418	.8646503		
worry_abou~d	.8869976	.5767143	1.54	0.124	-.2433416	2.017337		
payment_me~d	-.5121313	.4773117	-1.07	0.283	-1.447645	.4233824		
_cons	10.03543	8.391698	1.20	0.232	-6.411993	26.48286		

Figure 4: Probit Regression model containing all variables- bank balance

As displayed in Figure 4, the most significant variable is whether or not the student has the amount they expected in their account. This is not surprising because when conducting the survey, this was designed to be the follow-up question to the dependent variable. Those who answered yes to knowing their bank balance would have also answered yes after checking their balance and seeing the expected amount. After conducting this regression, it can be seen that most of the predictions outlined in section 3.10 are correct, with the coefficient of all the variables having their predicted sign. When analysing the variables that are the most statistically significant, the second most significant variable, with a P value of 0.030 is the proportion of

transactions carried out using credit/debit cards. Owning a credit/debit card means only having to remember a unique PIN. If the transaction is under £30, there is nothing to remember. In comparison to other methods of payment, a credit/debit card is more secure and efficient making it a significant factor in determining whether someone is aware of their current bank balance.

A significant variable that was not previously predicted is the worry about theft and fraud. With a P value of 0.124 and a coefficient of 0.8870, this variable is definitely significant in determining whether a student knows their current bank balance. Especially in today's modern era, and as alluded to by some of the interviewees, there are many ways through which other people can access your information. If you lose your phone, there is no access to one's mobile payment app because biometric fingerprint recognition is necessary in order to carry out a transaction. However, if someone's contactless credit/debit card is lost or stolen, there is nothing to stop them being robbed. Thus, the higher the worry about credit card fraud and theft, the higher the bank balance awareness.

Recognising this change in the hypothesis, a second regression was carried out, containing the six most significant variables. The purpose of this second regression was to see which out of the six variables, was the most significant, and examine whether the significance of the concerned variables, increase or decrease when the total number of regressors decrease.

Probit regression		Number of obs	=	110
		LR chi2(6)	=	99.77
		Prob > chi2	=	0.0000
Log likelihood = -25.745364		Pseudo R2	=	0.6596

current_bank_balance_awareness	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
financially_literacy	.2676443	.1369349	1.95	0.051	-.0007432	.5360318
preferred_method_under_30	-.3556624	.3648824	-0.97	0.330	-1.070819	.359494
proportion_transactions_using_cr	-.4593533	.1654818	-2.78	0.006	-.7836915	-.135015
is_this_expected_amount	-1.522218	.2736922	-5.56	0.000	-2.058645	-.9857913
record_of_expenditure	-.2589721	.1870537	-1.38	0.166	-.6255905	.1076464
worry_about_card_theft_and_fraud	.6582906	.4780178	1.38	0.168	-.2786071	1.595188
_cons	4.23167	1.45774	2.90	0.004	1.374553	7.088788

Figure 5: Probit Regression model containing only the most significant variables- bank balance

As shown in Figure 5, when the total number of regressors is lowered, the majority of remaining variables increase in significance. Although the regressors financial literacy and the worry about card theft and fraud have a lower significance than they previously did, the difference is not huge. The relative significance of financial literacy changes from $P = 0.048$ to $P = 0.051$. The variable with the highest change in significance is the proportion of transactions carried out using

credit/debit cards. It's significance changes from $P = 0.030$ to $P = 0.006$; suggesting that students identify the effect of increased credit and debit card usage, on their spending habits.

4.4.2 Financial Fluency

Although knowing one's own bank balance is helpful in predicting whether students are more likely to keep track of their spending, miscalculations can easily occur. This is why the second dependent variable of an individual's financial fluency, is necessary for this analysis. As discussed in 3.9, this variable is characterised both by whether the participant knows their bank balance and whether this is the participant's expected bank balance after they have checked it. Combining both these regressors together will help to decipher which variables have the highest statistical significance. Like the previous investigative variable, the difference in effects between mobile payment and cash usage in relation to financial fluency can be examined.

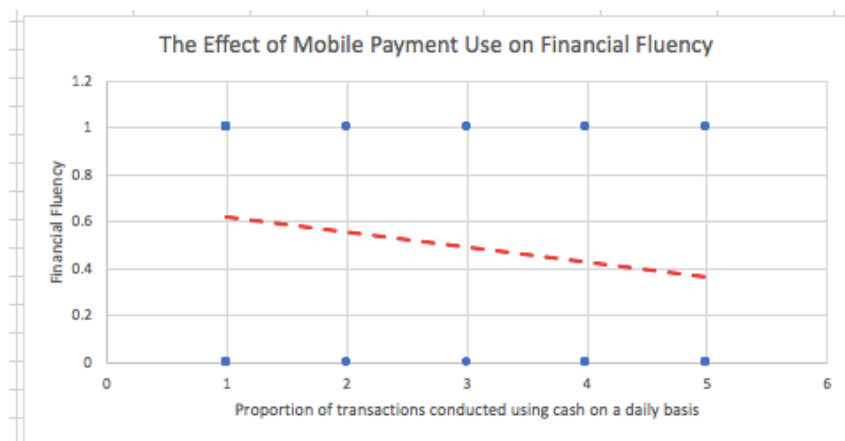


Figure 6: Graph showing the effects of mobile payment on financial fluency

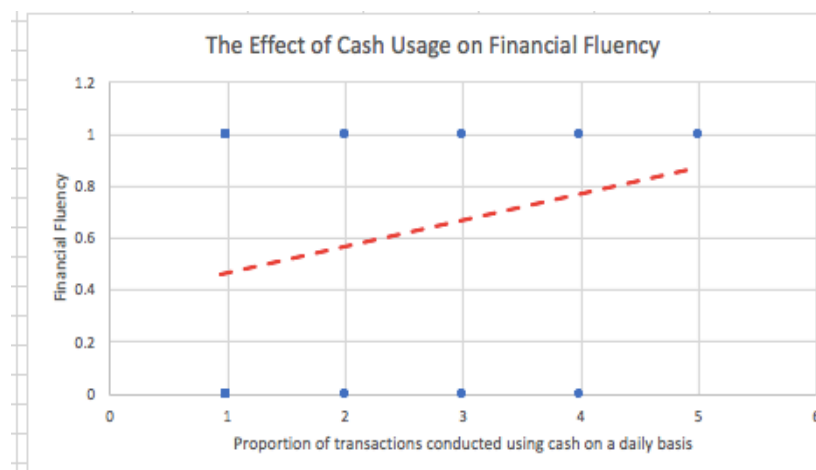


Figure 7: Graph showing the effects of cash usage on financial fluency

The graphs above indicate that both mobile payment and cash usage have a similar effect on financial fluency and a student's bank balance awareness. Figure 6 displays a negative correlation between increased mobile payment usage and financial fluency. The ease of using mobile

payments means that even if someone forgets their card, they can easily carry out transactions using their phone. Some may receive a notification on their phone and will not be inclined to check their bank statement. This is why 42.7% of participants did not know their current bank balance, and of the 53.7% who did, 20.9%, found that their actual bank balance differed from their expected bank balance. Again, we can turn to regression analysis.

Probit regression		Number of obs	=	110
		LR chi2 (11)	=	8.76
		Prob > chi2	=	0.6442
Log likelihood = -15.433723		Pseudo R2	=	0.2210

financially_fluent	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
financially_literacy	.0194266	.1800793	0.11	0.025	-.3335224	.3723755
preferred_method_under_30	-.0725465	.851616	-0.09	0.932	-1.741683	1.59659
average_when_pedominatlyusing_co	.1216246	.3559565	0.34	0.733	-.5760372	.8192864
proportion_transactions_using_ca	.2755002	.5883681	0.47	0.640	-.87768	1.428681
proportion_transactions_using_cr	.4663847	.4084932	1.14	0.254	-.3342473	1.267017
proportion_transactions_using_mo	.1453043	.3803743	0.38	0.702	-.6002157	.8908242
current_bank_balance_awareness	0 (omitted)					
record_of_expenditure	-.4276909	.2883292	-1.48	0.084	-.9928059	.137424
ask_for_receipt	.0229512	.1140082	0.20	0.196	-.2005007	.2464032
careful_checking_of_bank_stateme	.1984109	.4606791	0.43	0.014	-.7045036	1.101325
worry_about_card_theft_and_fraud	-.7402366	.6058372	-1.22	0.349	-1.927656	.4471825
payment_method_used_abroad	.7597183	.8764332	0.87	0.386	-.9580591	2.477496
_cons	-.8350796	4.149494	-0.20	0.841	-8.967938	7.297779

Figure 8: Probit Regression model containing all variables- financial fluency

The hypothesis for financial fluency, varies greatly from that of bank balance awareness, as it predicts that more regressors will exhibit a positive relationship. Figure 8 shows that the signs of the coefficients of the regressors are as predicted, with only one-third of the variables having a negative relationship with financial fluency.

Compared to the previous regression, the significance of the proportion of transactions using a credit/debit is reduced, having a P value of 0.254. The significance of financial literacy, however, has increased, displaying a P value of 0.025. Students with a high level of financial literacy, engage in calculated spending, making them more aware of their bank balance and consequently more financially fluent. Asking for a receipt and keeping a record of expenditure become more significant, with P values of 0.196 and 0.084 respectively. A receipt is a physical method of keeping track of expenditure, that would help offset a student's ignorance of their bank balance. Students will still have an idea of their spending pattern, resulting in a higher level of financial fluency. The most significant variables in this regression were then regressed again.

Probit regression		Number of obs	=	110
		LR chi2(4)	=	12.01
		Prob > chi2	=	0.0173
Log likelihood = -70.168484		Pseudo R2	=	0.0788

financially_fluent	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
financially_literacy	.1809579	.077857	2.32	0.020	.0283609	.3335548
record_of_expenditure	-.2270538	.1187737	-1.91	0.056	-.4598459	.0057384
ask_for_receipt	.029219	.0451113	0.65	0.517	-.0591976	.1176356
careful_checking_of_bank_stateme	.0668106	.1803236	0.37	0.711	-.2866172	.4202383
_cons	-.800464	.7735429	-1.03	0.301	-2.31658	.7156522

Figure 9: Probit Regression model containing only the most significant variables- financial fluency

Figure 9 shows that keeping a record of expenditure becomes even more statistically significant and has a P value of 0.056. If students are good at keeping track of their expenditure, when they check their balance, the amount is what they expect to see. It is not impeded by any unexpected spending or miscalculations which takes us back to the dangers of innovative payment methods. It is evident that the variables concerning the effectiveness of recording expenditure are the ones significantly affecting one's financial fluency.

The above evidence identifies a positive relationship between the increased use of innovative payment methods and increased spending. Both the qualitative and quantitative analysis reflect the clear ease and efficiency benefits that accompany contactless payment methods and that such benefits, come at a cost of students being less aware of their spending. The hypothesis of this study is therefore proved to be true.

4.5 Limitations of the Thesis

Similar to other studies, this thesis also has limitations. Firstly, the study's focus is limited only to UK students. Although the UK is a geographical hub for the adoption of technological innovation, students living in other cash-intensive countries like Austria or Germany, may not deem this the case. Thus, the behaviour of UK students alone may not be enough to prove that there is a correlation between spending habits and technology enhancements. This thesis displays similarities with previous studies with regards to the significance of a payment instrument on consumer behaviour. However, it faces limitations when investigating whether there is a correlation between the variety of payment instruments used and the frequency and value of the transactions that take place. One of the main critiques of this study is that the results obtained can be classed as being subjective. Results are based entirely on how a sample of individuals assesses their consumer experiences as opposed to monitored real-life observations that take

place in a controlled environment. Therefore, these results are not an accurate representation of how spending habits are affected in different circumstances.

In comparison to the 2017 SCPC study, that contained 3099 observations, the time and financial constraints of this study meant the sample size was limited to 110. Such a small sample size may not be representative of the entire UK student population as the consumer experiences recorded, may differ from that of those from other institutions across the UK. If a larger sample set and a random sampling technique were used, the results obtained may be more representative of the UK student population. A controlled experiment with a stratified random sample would allow a large number of students from a wider selection of universities across the UK, who are likely to come from a variety of cultural and financial backgrounds. Stratified random sampling, would also result in a sample with increased reliability.

Chapter 5: Study Evaluation and Conclusion

This research study sought to explore whether the introduction of innovative payment methods, has affected the spending of university students. Previous literature including Mallat (2007) and Venkatesh, Thong and Xu (2012), explained the main factors that influenced a consumer's choice of payment method. Soman (2003), depicted that the method used by consumers are as a result of the accompanying psychological effects such as the length of the time the payment is remembered and the "pain of paying". The objective of the surveys and questionnaires was to investigate this, and the results obtained were interpreted accordingly.

Following the structure of the interview matrix guide highlighted in Appendix A, the most recurring theme illustrated by the interviews was the intangibility of contactless payment. Contactless payment does not feel like 'real money' and it, therefore, becomes easy to let smaller transactions accumulate subconsciously. This is what leads to bigger problems such as increasing student debt and overspending; both of which are not helped by the general financial illiteracy demonstrated by students.

Both regressions emphasised the statistical significance of financial literacy. Those who carried out a larger proportion of payments with credit/debit cards or mobile payments were less likely to know their current bank balance and less financially fluent. Contactless payment methods help fuel the myopic tendencies of individuals suggesting that innovative payment methods do affect student spending behaviour. The more technologically enhanced the payment method, the higher the increase in spending.

Furthermore, the study investigates the implications of a cashless society with respect to the UK student demographic, through literature research and primary data obtained from interviews. Students were not completely sceptical about this phenomenon or particularly concerned about an anonymous payment process. However, students did express that there would always be a need for cash in certain situations, thus making complete eradication of cash unrealistic.

The conclusions from this research should encourage students to budget more efficiently and understand the significant role payment instruments have. Students can then make more informed decisions and choose the payment instrument that allows them to have a more controlled approach to spending. For example, students expressed that there was a higher level of guilt associated with spending cash as opposed to contactless and mobile payments. Therefore, over a given timeframe, if the student used cash, there would be a reduction in the risk of

overconsumption and unforeseen student debt. Subconscious spending usually indicates more impulsive purchases Trutsch (2014). Earlier studies such as Supon (2012) highlight similar conclusions, suggesting the impulsive spending habits, may be as a result of a lack of financial education.

Although present research gives an insight into how the introduction of innovative payments has affected spending behaviour, there are many ways through which this study can be extended in the future. One such method could be the introduction of a payment record or diary. For example, participants could record the transactions they carry out over a set period of time and write down what payment instrument they used to do so. These results could then be used in statistical analysis which can help to identify the specific effects on spending in terms of the frequency and the amount spent by the individual.

Moreover, prior research concerning consumer attitudes to the possible acceptance of a cashless society in the future is limited. This introduces an opportunity to contribute to the growing research field concerning the developing MPP market. Further studies could be conducted to explore how UK consumers react to the most severe logistical and social implications of a cashless society. This can be achieved by using a mixed method consisting of interviewing financial service professionals as well as a consumer-focused questionnaire.

Chapter 6: Appendices

Appendix A: Interview Matrix Guide

Number	Primary Research	References
1	Contactless payment is referred to as a fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement? - Explain why you like or dislike contactless payment. - Are there any situations when you would avoid using contactless forms of payment?	The scepticism surrounding the security of contactless payment has passed (Cards Association UK, 2017) Consumer benefits of contactless cards (Smart Payments Association, 2017) UK students see contactless payment as a preferred payment mode (Vista Retail Support, 2016)
2	The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why? - Are there any reasons that would deter you from using mobile payment apps?	Apple and Samsung are driving the consumer adoption of mobile payments (Ohlhausen, 2016) In the UK, the biggest adopters of mobile payments are those between 18-24 (Prepaid International Forum, 2016).
3	Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this? - Is there a specific form of payment that makes you less aware of how much you spend?	Card payments lead to increased spending over cash (Feinberg, 1986; Hirschman, 1979) Lower level of payment pain (Raghubir and Srivatsava, 2008) Payment transparency concept (Soman, 2003) Consumers are less aware of the value being spent when a tangible object is no longer being exchanged (Thomas, Desai and Seenivasan, 2011)
4	Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt? - What do you think are the main current and future dangers to students with regards to overspending and getting into further debt?	Contactless payments encourage customers to spend more and thus pose a danger, to students in particular (Bain, 2014)
5	Central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer? - Do you think your own spending habits will be affected significantly?	Both mobile and contactless spending can lead to increased impulse spending (French, 2014).

Appendix B: Interview Transcripts

Interview 1- Participant 1- (18th December 2018, 11AM, 8 minutes 49 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: I agree because using contactless is so much quicker especially when you have to go to the shops. It's easier as well, like it doesn't require a lot of effort to learn how it works and how to use it. I'm not sure if it's secure because if your contactless card gets stolen, then someone can use your card and buy things without needing any of your details. I mean, they can only buy things under like £30, but it's still money right. But yeah, I definitely think that it's fast and easy to use.

Me: Explain why you like or dislike contactless payment.

Participant: I like it because it just makes everything so much quicker. Like, when I'm in a rush I don't really want to be standing there waiting to enter my PIN, especially if I'm using a self-checkout service. It also means that I don't need to carry cash around with me because I usually don't.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm it depends really. Usually when I use contactless, I don't stop to ask for a receipt, I just pay and go. So, if I wanted a receipt for whatever reason, I wouldn't use contactless. Or if I'm trying to save money and not spend too much, I would use my other card which isn't contactless so it's easier to keep track of how much I've spent.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: I think I most likely will, because I'm so forgetful, like there have been so many times when I've left my purse at home and so this way, I could just use my phone to pay. It's something I've wanted to set up on my phone, I just haven't got around too setting it up yet.

Me: Are there any reasons that would deter you from using mobile payment apps?

Participant: Umm, I mean there's always that slight worry that it might not go through properly and then when I tap it again, I'll be charged twice so maybe because of that.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: Yeah, I definitely agree because sometimes when you're paying with contactless, you don't really think about it, you just kind of pay. I feel like you just forget that money is actually leaving your account. You just tap your card and there, you're done paying just like that. When you think of every transaction as 'it's just £3' or '£5 isn't a lot', all the little ones add up.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: Yeah, I agree because at school, we weren't really warned about all the things you have to pay for when you go to uni. I didn't think that I'd have to spend so much on bills rent, food and my expenses are definitely more than I expected them to be.

Me: What do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: I think one of the main dangers is paying for stuff online. Because people are doing it subconsciously, and the money doesn't actually leave your account until a few days later, people don't actually realise how much they're spending. It's things like Deliveroo, Uber Eats, that you don't realise how much it all adds up too. It's not a surprise that people end up in so much debt with this overspending.

Me: Okay, last question, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: To be honest, I don't usually tend to carry cash around with me that often. Like the most I'd have £1, if that. Although, I think it's good to have some money in your purse for things you need coins for like parking tickets and shopping trolleys, I don't think becoming cashless would affect me that much. I quite like it contactless.

Me: That's it, thank you so much!

Interview 2- Participant 2- (18th December 2018, 11AM, 8 minutes 15 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: Yeah, I 100% agree! It's such a simple way to buy low value items without having to enter your PIN and wait in the queue. I personally use, Apple Pay, so it's really fast and I don't need to waste time getting my wallet out or anything.

Me: Explain why you like or dislike contactless payment.

Participant: I just like it because it's a lot easier and it's so much quicker than you know, getting your card and entering your pin and all that.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm just whenever I spend above the limit to be honest. I think for my one and most ones the limit is like £30 so if I spend under than that then I'll use contactless obviously, but over that I guess I'll just use cash if I have it.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: Yeah like I currently use it because like I said, it's so much easier. You don't have to use your card anymore and you know it's secure because it requires your fingerprint, so even though you don't have to enter your PIN, there's still that encryption factor to it.

Me: I'm assuming it's a no but, are there any reasons that would deter you from using mobile payment apps?

Participant: Not really, no.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: Umm I think especially when you use contactless, you don't really think, you just do it. You don't really think of the consequence of it and because the value is so low, you don't really think "Oh my god I just spent £3". If I have to use my credit card, then it's usually for something that has a large value, and I'd have to think about whether I actually want to spend that amount of money or not. And, when you're using cash, you have to use your brain to think about how much it is and everything and you'd have to think twice about using it. Usually, if I know I have to get cash out, I usually don't buy it because I'm lazy.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: Umm yeah for sure! I think being a student is so much more expensive than what people think, and I know that a lot of people's loan (student loans) don't cover their daily or even monthly basis, so I think the fact that overdrafts are so readily available, means people use it as a natural way to get by. I think that they if they weren't so available, people wouldn't spend as much but then again, I do think that many students aren't very educated on money and like how it works. Like for me, with my credit card, I have a good credit score and all that and I have a lot of direct debits and stuff. So obviously, I'm in debt but it's manageable debt. I feel like people aren't really educated about it and therefore have masses of debts and overdrafts they don't know how to manage.

Me: What do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: Yeah just like having overdrafts and all right. Because I think if you have an overdraft, you just treat it like money in your account unlike if you have a credit card. Like personally, I don't really have to worry about my credit card because I just automatically pay it off with my debit card. Overdrafts are actually pretty dangerous if you think about it.

Me: Finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I think for some things, it's hard not to use cash. Like for things like betting where you use cash, not having cash may take out the enjoyment of it. That's a big part of socialising, I think. But then again realistically, I don't think it'd have an adverse effect on many people because no one gets paid in cash. Your wages or student loan goes straight into account anyway, and you can just spend it straight off your card. So, yes and no, I guess.

Me: That's it, thank you so much!

Interview 3- Participant 3- (18th December 2018, 12pm, 6 minutes 38 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: Yeah, I agree with that like obviously when you go to the shop, you can buy whatever you want without having to put your PIN in and have all that fuss.

Me: Explain why you like or dislike contactless payment.

Participant: I like it because its quick but like I said before, I am aware of the security issues that come with using this as a payment method.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm, I don't think so. No, I don't think so to be honest, as long as I could get a receipt for it.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: Umm well I don't use it currently and I don't think I'll use it in the future either. Like I know it's a lot easier to use because you always have your phone on you, but I just don't for some reason. I feel like there's a few security issues with it, so I just want to avoid those.

Me: So just following on from that, are there any reasons that would deter you from using mobile payment apps?

Participant: I think security issues are always there in the back of your mind, like if you lose your phone. And I'm pretty sure today people have ways of finding out personal information about you and then take all your money out of your account.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: I kind of agree with that to be honest because I definitely think that because it's so easy to use, you don't realise how much money you're actually spending. It just grows constantly because it's easy to spend £3 here and £3 there.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: Hmm, let me think. I feel like people just aren't really conscious with their money anymore and how they're spending it, in my personal experience anyway. If you see something, you just want it and go and buy it without really thinking too much about the repercussions of what that means.

Me: What do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: Umm, I'm not sure really, I can't really think of anything.

Me: That's okay, just one more question. Central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: To be honest, I don't think it would affect me a lot because I tend to pay by card anyway. I don't really like carrying cash with me because I feel like I'd just spend it unnecessarily, so I just use my card.

Me: That's it, thank you so much!

Interview 4- Participant 4- (19th December 2018, 3PM, 7 minutes 53 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: Umm well obviously it's really fast because you can literally like tap and go. Like if you're in McDonalds drive thru or need to go grab lunch between your lectures and all. Like for a student, it won't be that expensive because contactless cards have that £30 thing but it's a quick way to pay with. I mean it's really easy and meets students' daily needs with food transport and everything. And umm secure? I mean it's secure as long as you don't lose your card because I know people who have lost their card before.

Me: Explain why you like or dislike contactless payment.

Participant: Yeah, I really like it because you can literally be in and out of a shop in like a minute. It makes life so much easier.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Thing is, I'm the sort of person that will get a contactless card and lose it within the same week and someone could just take it and use it £30 payments at a time. That's the only downside to it to be fair and it'd be useful to have like an app or something that lets you cancel your card straight away, but other than that I think they're fine.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: Umm, yeah, I'll use it when I update and get a new phone, because if I'm going to have anything on me it'd be my phone. Like I don't go anywhere without my phone and I use it a lot, so being able to pay with it is just easier. It saves you time from having to get your wallet and if you have Apple Pay, it's all pretty much set up for you to use.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: Umm, I think like the risk of it not working probably, but other than that not really. Like it'd be embarrassing if you just hold your phone to use apple pay and then it doesn't work. As in, I don't think they're much different to contactless cards so the only other reason why I might not use it is because it's so easy to spend money for no reason. Obviously,

I'm a student so I'm trying to save not spend! I feel like on your card, the payment is less impulsive because you have to put your PIN in, compared to using a contactless method.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: Yeah, well like I said before, I don't like using cash just because it just ends up on my table in my room. Personally, I'd be worried about where you're using your contactless. Because the limit is £30 so especially in places like pubs, it's easy to just pay and lose track. When you have cash, there's like a limit on how much you can spend before the cash runs out so with contactless there's less stress.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: I do agree that you don't get much warning. Because when you get your student loan, you spend this money like you would any other money, but this is money technically needs to be paid back later. There's definitely that ease of spending it compared to money you earn from like a gap year or part time job. Because people aren't that educated about it, they don't know how to spend the money smartly and then they just get into further debt or go into their overdraft.

Me: Okay so finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I don't think it'd affect me personally, but I think it'd definitely affect society. I think there'd be less impulse buying like if you wanted too, you could set a certain level of spending for the night but that probably wouldn't work because people would want to spend in more. I think there's two ways to look at it. People would have more money on them at all times as a result and may be more reckless with spending. Or on the other hand, becoming cashless would cause them to be careful.

Me: That's it, thank you so much!

Interview 5- Participant 5- (19th December 2018, 3PM, 8 minutes 49 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: I'd definitely agree because it's so much easier to use and it's not like you have to stand there waiting for the chip and pin sort of thing. And, if you're just making small purchases, you don't need to worry about carrying small amounts of cash with you. Umm I'd say it's pretty secure because usually you have your card so only you can use it. But then again, if you drop it anyone can take your card and use it for up to £30 now.

Me: Explain why you like or dislike contactless payment.

Participant: It's just a simpler version of using a card. Like before contactless people usually only used cards for big purchases. But now you don't need to worry about having small amounts of cash on you or carrying around change.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm well this is probably a really student focussed example, but I try to avoid using it at like student unions and nights out where you have a couple of drinks and you don't really know how much you're spending so I try to be careful with that. Like half the time they tell you how much it is for a drink but when you're just tapping your card, you usually don't look so they might have actually charged you more. But yeah, that's a risk, I guess.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: I don't really use it at the moment because I'm used to using card or cash. But at universities, they do take mobile payments, so I'll definitely look into it.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: Not really. I mean if the places I go to, accept mobile payments, then why not.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: Yeah, I think that's really true actually. Because sometimes when you're paying by card and the amount is significantly large, like over £30 or like in the 00's, you've basically pre-planned that spend so you're aware that that amount of money is going to leave your account. But if you're spending less than £30 on like small shopping and that, it feels less guilty because in your head it's only a small amount of money and u just tap your card and go. I think if you were paying by cash, it feels guiltier, like you're giving away hard-earned money. Or like with a cheque, when it feels like you're basically signing your life away.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: I definitely agree with that. It's not hard to find a student with money problems, with like below zero in their bank accounts. But the bad thing is, that students are somewhat arrogant in how they spend their money. I feel like they have such an 'in the moment' mindset, that they don't really plan their finances ahead. I know lots of students in their overdrafts right now, so when they leave university, they're going to find it really hard because they're going to have pay interest and I feel like managing finances will be really hard. I think just encouraging students to be more careful with their money and giving them realistic advice because either way it's important to remember that everyone has to pay their student loan back.

Me: What do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: I think this basically comes down to managing your necessities and prioritising them against the things you don't really need but want. This way more students especially those with financial problems can think about the payments before they happen.

Me: Finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participants: I think for most people it wouldn't really change. They'd just have to pay with contactless, so the focus wouldn't really shift dramatically to how much they're spending. Like for me I use contactless for small stuff anyway so if things became cashless, then I'd just have to use my card and make sure I had enough in it.

Me: That's it, thank you so much!

Interview 6- Participant 6- (20th December 2018, 5PM, 8 minutes 27 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: Oh yeah, I definitely agree with this! Paying with a chip and PIN card, was already relatively straightforward, and contactless has just made this simple process even simpler. I'm definitely more likely to use it. Before, if I didn't have cash, I wouldn't go to the shop because I wouldn't be able to buy things as easily, but now with contactless I can go and make small purchases easily.

Me: Explain why you like or dislike contactless payment.

Participant: It's easy to use, it's quick and it means that I don't need to waste time carrying around coins.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm well, if the place didn't accept them then obviously not, but I think like in comparison to say 6 months ago, more places now accept contactless so it's okay.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: I already use it. I mean some places don't have it, but the ones that do I use it. It's looks quite cool, whipping your phone out to make a payment but on a real, it is also easier to use. Sometimes, I do have to take my card out because it doesn't work but that's not a regular problem I have to deal with.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: To be honest, I'd use it anytime I'd use my card so no not really.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: Oh yeah for sure. When you insert your card, there's a slight hesitation when you see the amount on the screen, where for a brief moment you question whether the transaction is actually necessary. Even though I'd most likely carry out the payment, I'd feel worse about it.

There's definitely a psychological effect because you don't feel the guilt in seeing your money go, but at the same time, you end up spending more money. So, it's good and bad, I guess.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: To be fair, I think there's a lot of factors to it. Like a lot of student are now getting bank accounts and cards at a younger age and are like made aware of how they should spend it and stuff. I mean when our parents were younger, they grew up using cash as their main method of payment so as technology develops, even 12-year-old kids with the latest iPhone have an idea about things like Apple Pay. I wouldn't be surprised, if a lack of financial education, had a link to rising debt, but I don't think it's the only reason why students are getting into more debt.

Me: So just to follow up, what do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: Things like rising house prices and rent maybe? Because obviously if rent increases your disposable income would decrease which for students is a particularly bad thing because it's less to spend on things like a night out. Because they want to have a good time, they don't really think much about it. I'm not too sure if that's correct but yeah.

Me: Okay so finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I personally think it would. Because statistically speaking, say in a year or something I'd definitely spend more money than say if I had to take cash out of my wallet, because I can just like tap my card or phone on the reader. I don't even need to go to bank to get cash out. There'd be less of a consciousness in spending overall, I think.

Me: That's it, thank you so much!

Interview 7- Participant 7- (20th December 2018, 5PM, 7 minutes, 58 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: I agree that it's fast. But in terms of security, I'm not sure whether I'm in more risk or less risk to be honest. I think it's safer than using a chip and PIN card because there's always that risk of someone seeing my PIN. But then with contactless cards, the risk is greater if you lose it because someone has easy access to your money.

Me: Explain why you like or dislike contactless payment.

Participant: As a student, I really like contactless payment because it's just easier and quicker and I don't need to rely so heavily on cash. Especially when you go to events and lots of people are waiting to pay, contactless just speeds up the process. When night clubs don't have contactless, it's actually the worst, the queues just get so long, and the waiting makes it less enjoyable.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Nah, I don't think so.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: Umm well I personally don't use mobile payment. I probably won't for a while because it's the same as using a contactless card I feel. I don't think taking your phone instead of your card is that much quicker. I don't think I'd use mobile payment in a shop, but I do use Pingit (Barclays Payments App) though, to send money to people quickly.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: No, I don't think so.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: I agree massively. If you think about it, that's why big gambling companies like Paddy Power are now using a contactless card system because people don't feel like they're using real money. Because it's really quick to just tap and the payment is made so quickly. The reason I use contactless with my card is because yes, I feel less guilty.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: Umm yeah, I think I agree because you're never really taught how to manage money at school. With student debt, you don't really see it but then at the end of your degree, you realise how much you owe. If someone physically gave me my student loan as opposed to transferring it to my bank account, it'd definitely be harder to spend. So yeah, because you never actually see it, it's definitely a reason why it goes up.

Me: So just to follow up, what do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: Okay so with me, I come from a relatively low-income background, so I get like a big loan which is enough to cover like living expenses and everything but it's not really enough to have fun. Even small things like joining a sports society feel like they're too expensive. So, say you get a credit to do this, there's also a domino effect from that, like you can't pay it off until you get a job and that. Basically yeah, I think that's the danger of overspending but then you've got to balance out the fun as well.

Me: Okay so finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I think it'd be really weird not to have cash. I mean, I guess I'd be able to adapt and get used to it and that's probably the case with lots of young people. I think psychologically, it might increase spending but hopefully people will become more careful and overspending will only be a short-term thing.

Me: That's it, thank you so much!

Interview 8- Participant 8- (21st December 2018, 2PM, 6 minutes 10 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: Yeah, I think that's true because obviously contactless is faster than normal transactions. It's easier and way more efficient and takes less time as well.

Me: Explain why you like or dislike contactless payment.

Participant: I like it for sure. You don't have to like, look around for loose change and all just to pay for something and it saves so much time when you're in a rush.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Umm I'd definitely use it in places I visit often because I'm used to it but like maybe not at like independent stores, because I feel like it's bit dodgy, I don't know.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: I started using Apple Pay when it was first available because it made debit card transactions so much easier. I think they're even more secure than contactless cards because it needs my fingerprint. As like, if you forget your wallet, mobile payment is so much more convenient.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: I get why people might think it's not secure but that wouldn't stop me from using it to be honest.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: I definitely agree. In first year, I mostly used cash and I was more conscious about what I was spending my money on. Because you only have a set amount of cash in your pocket, so you know that you can't spend too much. With mobile payments, there's not human interaction, you just tap it and go. So obviously I feel like I'm less aware.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: I think the question says it all. For most students, university is when they're independent with their money for the first time. Knowing how to spend wisely, comes with education and experience to be fair. For example, if you're living in a flat in your first year, the year after you'd be more careful knowing that you have to pay bills as well.

Me: So just to follow up, what do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: I think contactless payment is a big one because all the small transactions add up. Just going to Tesco or something on the way home, if you do that five days a week, it'll add up. There's no physical payment and I think it definitely psychologically affects the amount you spend.

Me: Okay so finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I think my budgeting would be affected because keeping track of spending would be even more important if things are digitalised. Becoming cashless would make things easier, but there will be a problem of keeping track of how much you spend.

Me: That's it, thank you so much!

Interview 9- Participant 9- (22nd December 2018, 4PM, 7 minutes 35 seconds)

Me: Contactless payment is referred to as a, fast, efficient and secure payment method. Can you explain whether you agree or disagree with this statement?

Participant: I think it's definitely way faster and way easier. I think when it started, people were a bit worried because they thought people could take money from your card when even when it's in your wallet and they're standing next to you, but I don't think that's an issue now. But day to day it's definitely easier.

Me: Explain why you like or dislike contactless payment.

Participant: It's useful when you're going to the shop quickly. Especially under £30, it's just better because you don't need to enter your PIN. It's annoying sometimes when shops have a lower and upper limit to pay with card but other than that you usually don't get charged for contactless.

Me: Are there any situations when you would avoid using contactless forms of payment?

Participant: Avoid it? I'm not sure really. I tend to avoid using it when I go on the train for multiple journeys, just because I know that it charges me the same amount every time. Sometimes it can be hard to track your spending so if I happen to have change or anything, I try to use that instead.

Me: The use of mobile payment apps such as Apple Pay, Android Pay, Samsung Pay and Google Wallet, are predicted to become more popular in the future. Do you think that you are likely to use your smartphone as a payment method and why?

Participant: I've already got apple pay on my phone, but I don't really use it. I haven't gotten used to associating my phone with paying for things yet, I think that's why.

Me: So, are there any reasons that would deter you from using mobile payment apps?

Participant: Sometimes it doesn't work, and it comes up with a message saying 'Hold over card reader' even if you are, so that's a bit annoying. I don't know if I'm just old fashioned, but I'm just used to using my card to pay for things.

Me: Previous research states that different payment methods can have varying psychological effects in terms of how 'real' the payment feels and the 'pain' that can be attached. Can you briefly explain whether you agree or disagree with this?

Participant: I think the most guilt is when you pay with a chip and PIN card because if you're over the contactless limit you have to use PIN and it's like, do you actually want to buy this. But with contactless you usually be guilt free because it's only small bits of money. Because you aren't physically handing over the money, it doesn't feel as bad. I'm less aware of what I'm spending when I use my contactless. £10 today and £10 yesterday all adds up.

Me: Student debt in the UK has increased dramatically and this may partly be as a result of a lack of financial education. Do you agree with this? Or do you think there are other reasons contributing to this rise in student debt?

Participant: Yeah, I agree with that, I for one struggled a lot in first year because before you come to university you don't really need to budget. It's just the unexpected expenses because at the beginning of the year, you get a large amount of student loan and you think that's a good thing but then you don't really know where the money goes when it comes to end of term, and you don't have money left in your account. I think for a lot of students, it's rent that makes them in debt.

Me: So just to follow up, what do you think are the main current and future dangers to students with regards to overspending and getting into further debt?

Participant: Everything in London is just so expensive and I think that plays a really big part in why a lot of students are experiencing debt. Because we all just get the loan when we start university and then don't really think about paying it back.

Me: Okay so finally, central banks are looking to replace cash completely with methods like contactless and mobile payment. How do you think that a 'cashless society' would affect your own experiences as a consumer?

Participant: I think it'd be hard to be completely cashless because there are things, I feel like you have to pay in cash. If you don't know someone that well, you'd rather give them cash instead of your bank details. Say you're paying with a bank card, you don't have to pay someone then and there if it's a transfer so there's a risk of never seeing the person again and then never getting paid. Just because it's so readily available I think if I didn't have cash on me, I'd be less aware because contactless means it's a lot harder to keep track of spending.

Me: That's it, thank you so much!

Appendix C: Standard Normal Distribution Table

$$P(Z \leq z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^z e^{-\frac{x^2}{2}} dx$$



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.7	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.8	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
-3.6	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.7	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.8	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Appendix D: Coded Survey Data Table

Gender	0 = Male
	1 = Female
How financially literate do you think you are on a scale of 1-10?	1 = Completely Illiterate
	2
	3
	4
	5 = Neutral
	6
	7
	8
	9
	10 = Completely Literate
What is your preferred payment method under £30?	1 = Cash
	2 = Credit/Debit Card
	3 = Mobile Payments
What is your preferred payment method over £30?	1 = Cash
	2 = Credit/Debit Card
If you predominantly use contactless or mobile payments, how much on average do you spend per transaction?	1 = Under £5
	2 = £5-£10
	3 = £10-£20
	4 = £20-£30
On a daily basis, what proportion of your transactions are carried out using cash?	1 = 0-20%
	2 = 20-40%
	3 = 40-60%
	4 = 60-80%
	5 = 80-100%
On a daily basis, what proportion of your transactions are carried out using credit/debit card?	1 = 0-20%
	2 = 20-40%
	3 = 40-60%
	4 = 60-80%
	5 = 80-100%
On a daily basis, what proportion of your transactions are carried out using mobile payments?	1 = 0-20%
	2 = 20-40%
	3 = 40-60%
	4 = 60-80%
	5 = 80-100%
Without checking, do you know your current bank balance?	0 = Yes
	1 = No
If you answered yes, could you now check your current balance. Is this the amount you expected to have?	1 = Yes
	2 = No
	3 = I don't want to check
	4 = Unanswered
Do you keep a record of your expenditure (mental, paper, receipt)?	1 = Yes
	2 = No
Do you ask for a receipt after your purchases?	1 = Always
	2 = Most of the time
	3 = Sometimes
	4 = Rarely
	5 = Never
	1 = Not at all
	2 =

On a scale 1 to 10 how carefully do you check your bank statement for each of your monthly payments?	3 =
	4 =
	5 =
	6 =
	7 =
	8 =
	9 =
	10 = Very carefully
If you're trying to avoid unnecessary spending in general, which of the following payment methods would you avoid using?	1 = Cash
	2 = Credit/Debit Card
	3 = Mobile Payments
How worried are you about card/mobile payment fraud or theft?	1 = Not worried at all
	2 =
	3 =
	4 =
	5 =
	6 =
	7 =
	8 =
	9 =
10 = Extremely Worried	
Is there a minimum amount when you would only use cash?	1 = Yes
	2 = No
When you go abroad, which payment method are you most likely to use?	1 = Cash
	2 = Credit/Debit Card
	3 = Mobile Payments
Do you agree or disagree with the following statement: "Mobile and Contactless Card payments are growing and are expected to continue growing in the future."	1 = Strongly Agree
	2 = Agree
	3 = Neutral
	4 = Disagree
	5 = Strongly Disagree

Chapter 7: References

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