



**FINANCIAL CONTROL:
ARE CASHLESS PAYMENTS MAKING
IT EASIER OR HARDER TO FEEL IN
CONTROL OF OUR FINANCES?**

**Research Challenge
Technical Report**

**Emma Woodley
Jez Groom**

**THINK FORWARD
INITIATIVE**

FINANCIAL CONTROL: ARE CASHLESS PAYMENTS MAKING IT EASIER OR HARDER TO FEEL IN CONTROL OF OUR FINANCES? *

TECHNICAL REPORT

Emma Woodley and Jez Groom[†]
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Abstract

This report uses two innovative research techniques to understand how in control consumers feel about newer cashless payments such as contactless cards and Apple Pay when compared to traditional cash. We have chosen these techniques to get a better emotional quantification of such feelings. We believe that asking consumers how they feel about such issues (in standard explicit quantitative surveys and qualitative focus groups) only scratches the surface and often does not elicit the true subconscious feelings of the individual. We use Implicit Response Test (IRT) methodology to quantify the strength of associations consumers have for control with both cashless and cash payments. We find that when consumers are stimulated or 'primed' with images of cashless payments, they find it harder to sort the word 'Control' into the correct 'Control' domain. In the same test, when also primed with cashless payment images they also find it easier to sort the word 'Uncontrolled' into the correct 'Uncontrolled' domain. Using different forms of cashless and cash primes, we find that consumers implicitly feel cashless payments are more uncontrolled than controlled. We use Mind Metaphor Interview (MMI) methodology to qualify the different dimensions of control consumers feel for cashless payments. Using images to describe how they feel about cashless payments, consumers tell us that there are four negative dimensions of control and one positive. The four negative dimensions include overspending, criminal activity, embarrassment when the technology fails them and an invasion of privacy from the financial institutions. The one positive dimension for control is a feeling of convenience and ease, where cashless payments help their daily lives flow more easily. We conclude by discussing the implications of these results for financial institutions and the growing fintech community.

Keywords: Cashless payments, Feeling of control, Mind metaphor interview, Implicit response test

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† Woodley & Groom: Cowry Consulting, London, UK. Email :emmawoodley@cowryconsulting.com

1. Introduction

As adoption of new cashless payment technologies takes off, understanding how consumers feel about using contactless cards, online payment systems like Paypal, phones via apple and android pay and even voice activated purchases via devices such as amazon Echo is of increasing importance to both the established financial institutions and the growing fintech sector.

Since the early 1990s, a number of observers foresaw the increased use of a cashless payment system and predictions of a cashless society (Humphrey and Berger 1990; Humphrey et al 1996; Olney 1999; Klee 2004; Garcia-Swartz et al 2006).

There is no doubt of the significant benefits that a cashless society can bring such as cost savings and efficient use of resources. However, some commentators have put forward their cases that a cashless society will have an overall adverse affect, leading to an increase in overall consumption, increasing personal debt and a negative impact upon savings levels (Nocera, 1994; Libow, 1955; Taylor and Tilford, 2000; Zavestoski 2002; MacDonald et al 2006).

Whilst this study does not tackle the macro economic impact of cashless payments, we did want to understand if these new payment methods helped consumers feel more, or indeed less, in control of their finances.

Interestingly, at the same time as the accelerated take up of cashless payments, we've also seen a new area of economics take off. Underpinned by psychology, this new field encompasses how

consumers really feel and behave and the term 'behavioural economics' is now more commonly known and increasingly understood.

This exciting new field challenges the traditional economics models of rational agent behaviour, making decisions in an environment of perfect information and perfect trust. Instead behavioural economics proposes that consumers often act irrationally or 'non-rationally' in their decision making. Nobel Prize winning psychologists Kahneman and Tversky (Kahneman 2011) and economists Thaler and Sunstein (Thaler and Sunstein 2008) propose that humans possess two thinking systems – one fast and operating deep in the subconscious and the second one acting far slower, more deliberative and sits within in our consciousness. They go on to suggest that the majority of our behaviour is in fact driven by our fast thinking system, often making decisions for ourselves, without really taking time to think at all. This simple model goes a long way to explaining what many researchers have believed for a long time – asking consumers why they do the things they do might not give us the full answer.

As one great advertising great, David Ogilvy once said 'Consumers don't think how they feel. They don't say what they think and they don't do what they say'.

And therein lies the heart of this research challenge, if we asked consumers for their explicit attitudes around cashless payments and control, how close to the truth would their answers really be? In focus groups and surveys, often addressing our rational

minds, would they truly acknowledge if they felt out of control using cashless payments and could they accurately define how they felt when using these new methods of payment?

To help us overcome this challenge, alongside the take-off of behavioural economics, in parallel there has been considerable growth in neuroscience, biometric and implicit research techniques. Due to the constraints of funding for this project we felt it appropriate to investigate the use of new implicit research techniques and new qualitative interview methodologies to overcome these problems.

Our ambition was to go deeper into consumer subconscious decision making and understand how consumers really felt about cashless payments and whether or not they felt more or less in control when compared to cash.

Implicit research techniques came to the fore as a result of a provocative study and subsequent book, *The Blind Spot* by Anthony Greenwald, Professor of Psychology at the University of Washington and Mahzarin Banaji, a social psychologist at Harvard investigating bias and stereotypes in regards to race and ethnicity. (Greenwald and Banaji 2011).

They have conducted extensive research on cognition and have collaborated to create the implicit association test. This measures the extent to which an individual will associate two individual concepts.

These new tests seek to ask consumers to sort different words or images to the left or right and depending on the speed of their response, it's proposed that the deep associations in the brain can be elicited.

These new techniques are not without their challengers. A recent article in *The Cut* discussed the reliability and repeatability of such techniques and the summary highlighted that more work needs to be done in this area to increase the significance of the findings. We also recognise that the techniques used in implicit research are not the only predictors of consumer behaviour. Simply because consumers have a feeling of a lack of control at an implicit level does not necessarily lead to uncontrolled cashless payment spending patterns as other decision making processes may override this feeling in different contexts.

We are aware of the currently active debates about the application of another Implicit Response paradigm's (the Implicit Association Test) to predicting socially discriminatory behaviour, often called 'implicit bias' and controversially used to ascribe racist motives to law enforcement personnel.

However, published meta-analyses of a range of Implicit Response measures have established their reliability, validity and predictability.

For example, a paper published in 2012 (Cameron, Brown-Iannuzzi and Payne 2012) examined findings from 167 academic studies and wrote that: "Sequential priming measures have incremental predictive validity over explicit measures.", "A comprehensive examination of all available data suggests that priming tasks, as a class, are indeed valid measures."

And that "Priming measures were associated with controllable and uncontrollable behaviours, and with socially sensitive and socially innocuous behaviours."

For this research, we have used the Cloud Army Reactor Implicit apps to measure the priming effect of cash and cashless imagery. Cloud Army are also conducting ongoing science research to optimise and enhance the robustness of their Reactor tests. For example, we optimised number of replicates, i.e. the number of times each respondent sees the same combination of a prime image and a particular sorting task, strongly affects the reliability of the test results, as measured by a statistic named Cronbach's Alpha.

We have found that some paradigms used by other vendors use too few replicates to achieve acceptable reliability.

For the research that follows, we will refer to the test as the Implicit Response Test (IRT).

For our second technique, we have been inspired by the work of Dr Gerald Zaltman and his work understanding deep metaphors that he has identified as driving our conscious and especially non-conscious thoughts. It was developed by Zaltman at the Harvard Business School in the early 1990s. As Zaltman described it "A lot goes on in our minds that we're not aware of. Most of what influences what we say and do occurs below the level of awareness. That's why we need new techniques: to get at hidden knowledge, to get at what people don't know they know. The technique that he developed is called the Zaltman Metaphor Elicitation Technique or ZMET and has been used for a variety of marketing organisations, academic researchers and social science professionals.

Zaltman began researching the power of using imagery whilst on holiday in Nepal in 1990. Zaltman at the last minute opted not to bring his camera on the trip and instead asked local residents to help him

to chronicle the trip by asking them to take pictures that would explain what life was like in their villages with disposable cameras. After developing the pictures Zaltman returned the village to ask residents to explain the meaning of the photographs through an interpreter. The pictures they had taken revealed ideas that would have been unacceptable of impossible to put into words.

For instance, the photographers tended to cut off peoples feet in the images. This was intended, as bare feet is a sign of poverty in Nepal. Zaltman believed that had he asked the villagers to describe life in just words this topic would not have emerged as it carried such a stigma.

ZMET is a hybrid market research methodology that is grounded in a number of different disciplines including verbal and non-verbal communication, visual sociology, visual anthropology, semiotics, mental imagery, cognitive neuroscience and phototherapy. The principles behind the approach are that thought occurs as a pattern of neural activity, not as words; most human meaning is exchanged nonverbally; emotion and reason are equally important and are combined in decision making; most thought, emotion and learning occur without awareness; mental models guide the selection of, process of and response to stimuli; cognitions are shared socially, and non-literal language and especially metaphor is central to understanding which means that ZMET is a great tool to use to understand customer experiences.

Inspired by the work of Zaltman, we used a non-patented approach, similar to the above studies and what we call a Mind Metaphor Interview (MMI). For the context of the research there are seven deep metaphors as follows;

BALANCE: Balance—and imbalance—involves ideas of equilibrium, adjusting, maintaining or offsetting forces, and the idea of things as they should be. People express psychological imbalance when talking about being out-of-sorts, down, and feeling off, and psychological balance when they say they feel centered, feel inner peace, or are back on track.

JOURNEY: People talk about many aspects in life as a journey. We often frame life itself as one big journey, including, for many, an afterlife. Sometimes we think of our lives as a brief journey, as in “life is short”; other times we view it as lengthy, as in “he still had so much life to live,” when a journey ends prematurely.

CONTAINER: Containers perform two functions: keeping things in and keeping things out. We find ourselves in or out of physical shape or condition, in a good or bad mood, stuck in a rut, or born into a social class and family. Memories are one of the most vital containers because they store our individual histories and identities.

RESOURCE: We need resources to survive—we would die without food and water or a nurturing adult in our infancy. Products and services are also important resources: we might refer to a smartphone as a “lifeline,” or motor oil as a truck’s “lifeblood.” An intelligent person is a “fountain of knowledge”; gaining an education is the “key” to one’s future.

TRANSFORMATION: Transformation involves changing states or status. Physically we can go from being “laid low by a cold” to being “up and about.” Money can be “matured,” or “grown.” Emotionally, if we undergo a major life change, we talk about needing “attitude adjustments” or “turning over a new leaf.”

CONNECTION: Connection—and disconnection—encompasses feelings of belonging or exclusion: being kept in or out of the loop, identifying with others, being drawn to celebrities, or breaking up a relationship. Themes of connection and disconnection quite often express themselves through connection to others, connection to self, connection to a moment and connection to something larger, among other themes.

The final metaphor is of particular relevance for this research and helps us understand how in control consumers feel about cashless payments.

CONTROL: We all need to feel in control of our lives. Sometimes we succeed, sometimes we don't. In our lives, we sometimes feel events “spiraling out of control.” When life is calm, we cruise on “auto pilot.” Social norms arise to control group interactions, and we sanction those who don't adhere to these norms.

In what follows, we bring together both quantitative and qualitative results to describe how consumers feel about cashless payments, are they feeling out of control and what makes them feel this way?

2. Methodology

2.1 Implicit Response Test (IRT)

The Implicit Response Test uses the Cloud Army Reactor Implicit App to measure automatically evoked associations and attitudes by measuring changes in reaction times in a word sorting task when participants are 'primed' by exposure to images. (for a summary explanation of the priming effect, see:

[https://en.wikipedia.org/wiki/Priming_\(psychology\)](https://en.wikipedia.org/wiki/Priming_(psychology))).

The process is that participants are given an objective sorting task whereby they are told words will appear in a sequence in the centre of their computer screen at timed intervals and they should 'sort' each word that appears by matching it to one of two 'pole' words, constantly displayed on either side of the screen. In this instance the pole words were 'Uncontrolled' (displayed on the left of the screen) and 'Controlled' (displayed on the right of the screen). These poles represent opposite attitudinal concepts or associations. One at a time, either the word 'Controlled' or 'Uncontrolled' appeared in the centre of the screen, for sorting, using a display algorithm that ensures each word appears an equal number of times, but in a random sequence.

After a short practice to familiarise themselves with the task, a baseline measurement is made to obtain the average reaction speed per participant for sorting the words to either pole. These reaction speed times are measured accurately down to the millisecond level.

These baseline measures are important, in order to establish the typical response time for each individual to the sorting task. For example, different individuals will have different average natural response times, and they may typically respond slightly faster to one pole word than the other. Then the main task is introduced. Now individual images of cash or cashless payments types flash up before each word, the participants are instructed to ignore the images and continue to only sort the words. Again, their response times are measured, but now for the average of each image-word pairing.

Stimulus included visuals of the following;

Cash – 2 pence, 10 pence, 20 pence, 50 pence, £1 coin, £5 note, £10 note, £20 note.

Cashless – Contactless logo, Direct Debit logo, Visa / Mastercard logos, Android Pay logo, Paypal logo, Amazon Echo logo, Apple Pay logo.

In contrast to their baseline average response times per pole, these times represent the image-primed response time per pole. If a priming effect occurs whereby the image primes an association with the word that subsequently appears such that it helps them react faster (compared to their natural baseline response time, and to their primed response time to the opposite word), then we can say that the image has facilitated their response and represents a greater association with that pole than its opposite.

Similarly, a slowed response to the opposite pole is also an indication of an association with the

attribute. For example, after seeing an image strongly associated with effective control, the reaction time sorting the word 'Controlled' will be slightly faster, compared to baseline, than the sorting time for the word 'Uncontrolled' compared to baseline.

Finally, a second baseline measurement is made (without the appearance of the priming images). This is done in order to capture any natural drift in response times that may have occurred either due to improvements through practice through the course of the test, or slowing of response times due to fatigue.

When comparing primed responses to baseline, we use the average of the baseline trials that occur before and after the primed trials.

Incidentally, a side-benefit of the objective nature of the task (i.e. that it has right and wrong responses, and participants are prompted to respond accurately if they click incorrectly), is that participants must attend to the task and can't 'randomly' or inattentively simply click their way through the test.

For each individual within the sample of 200 people we now have average baseline response times per pole word, and then per priming-image when paired with each word.

The effect size calculation used is Cohen's D, which can be represented as:

$$d = (M1 - M2)/StdDev$$

Where M1 & M2 are the average response times for baseline and priming-image respectively, and StdDev is the standard deviation of the set of measurement times. This effectively divides the

differences in response times yielded from the primed-task by the variance of scores.

Cohen's D values are calculated for the sorting of each word when paired with each pole, and then one pole score is subtracted from the other, to show the difference between the poles (i.e. is the effect of facilitation stronger for one pole or its opposite, or is there no difference between them).

Finally, t-test statistical calculations are made to determine the statistical significance of the difference between the priming effect sizes.

The Evaluative Decision Task

Cloud Army's Reactor Implicit Apps currently use variations of a paradigm called the Evaluative Decision Task (EDT) which was described in the literature in 1986 by Fazio and Williams (Fazio and Williams 1986) and has subsequently been used in a large number of published academic studies.

IRT Recruitment Criteria

Respondents were recruited via on-line panels according to the following criteria;

- 200 UK respondents
- Aged between 18-40
- 50/50 male female
- BC1C2 socio-economic group
- Have acquired in the last 5 years or intend to acquire in the next 12 months at least one of the following financial products: Current Account, Savings Account, Credit Card, Pension Plan, Mortgage, Life Insurance, Motor Insurance, Home Insurance, Investments (inc Stocks, Investment Plans etc), Loans & Finance Agreements.
- Have used at least 2 of the following payment types in the past year: Cheque, Direct Debit, Standing Order, Debit Card Transaction, Credit

Card Transaction, Cash, Contactless Payment, BACs Payment, Apple Pay, Paypal, Square, Voice Activated Payment such as Alexa.

2.2 Mental Metaphor Interviews (MMI)

The Mental Metaphor Interview was developed and inspired by the ZMET methodology. ZMET is a patented and licensed methodology, therefore due to research funding constraints, we are unable to use this very comprehensive multi-step approach. We also felt that this was not required as (i) we supplemented our approach quantitatively using IRT and (ii) we wanted to focus on defining the Control metaphor predominantly if it arose.

We devised a 1-hour in-depth one-on-one interview that is semi-structured in nature. The respondent was recruited and then given homework. They were asked to select 5-6 images that represent how they think and feel about non-cash payments. They were asked not to bring literal images of money, financial institutions, etc.. as they carry little meaning and tell us little about their thoughts and feelings. They were given an example of a good image which was brought in by another respondent from another project of an old cardigan which represented a brand that was once loved but was now struggling to stay relevant. This respondent described it as it was the cardigan that you once loved, don't wear anymore but can't bear to throw out.

Our researchers met at the respondent's homes and a videographer also captured the whole interview. This gave us a good feel for the respondents living arrangements and approach to life and also the video was a valuable tool when it came to the non-verbal analysis.

These interviews are semi-structured but they are very much driven by the respondent.

The structure of the interview is centred solely on the images that the respondent has selected and they are asked to take each in turn in the order that they wish.

The questioning is centred on why the respondent chose that image in the first instance and then the interviewer asks them to explain any ambiguous terminology and starts to drill down into why the images were chosen and this approach allows the respondents to freely express and expand on their thoughts and feelings, attitudes and perspectives.

When the interviewer feels they have drilled down to the appropriate level to elicit the deep metaphors for each image and the respondent has said all they want to say, they then move onto the next image. When the end of the interview is reached all of the images are collected by the interviewer for analysis.

After all the interviews are completed, all of the interviews are reviewed many times for the non-verbal analysis part of the analysis, transcripts are produced for all interviews for the verbal aspect of the analysis and all of the images are also analysed and reviewed. The analysis for this type of project is therefore very time consuming and can take up to 3 weeks to complete. The analysis is rich in insight and because it delves into the sub-conscious it can produce insight that has not been seen before by the client.

In this research the deep metaphor 'control' was coming through very strongly in the verbal communication.

Here is an example of a quote from our respondent Rachel. She is describing here her lack of control

over the payment itself and her experiences of using Apple Pay on The Tube in London.

“Well especially on the Tube and there are people behind me so start feeling really stressed as I start hearing people huff behind you, and you're like, and they're just. And I can feel my face going redder because I'm getting more and more frustrated, and I'm thinking just work just work and eventually if it's still not working I just step aside and take a big deep breath and try again, but yeah, I get stressed if it's continually not recognising my finger print.”

When it comes to non-verbal cues we could see the respondents coming stressed and in some cases as little angry when they were describing instances when they felt a lack of control. They would become agitated and talked fast and sometimes loudly about their feelings and their expressions were showing distress and frustration and a little aggression.

MMI Recruitment Criteria

Respondents were recruited via a recruitment agency according to the following criteria;

- Split 50:50 male/female
- 25-34 years old
- BC1C1 socio-economic group
- 2 interviews with single people
- 2 interviews with co-habiting/married people
- 2 interviews with co-habiting/married parents

3. Results

3.1 Implicit Response Test (IRT)

From our research using the IRT, we look to see if there are significant differences in the times it takes to sort Controlled to the Controlled pole and Uncontrolled to the Uncontrolled pole following the priming of cash and cashless payments, when compared to the baseline measurements without stimuli. We then compare the time difference between baseline measurements and the time taken following the stimulus of either a cashless or cash payment image and create an index – what we term the ‘axis effect’. When looking at the time differences, indexed on an axis of Controlled, Baseline and Uncontrolled we can see the ‘axis effect’ or more simply the ‘swing’ of how consumers feel following the prime of cash and cashless payments.

The time differences are then significance tested to determine the confidence level of the axis effect.

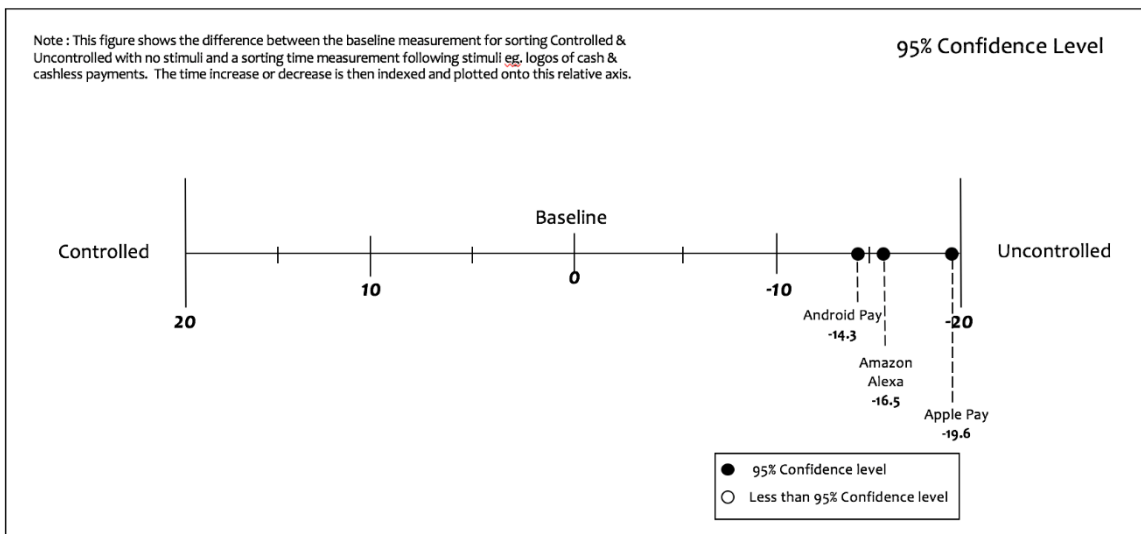
We find at a 95% confidence level;

- (i) In Figure 1 we show how consumers feel less in control when primed with phone and voice activated payment images
- (ii) In Figure 2 we show how consumers feel less in control when primed with cashless images when compared to cash

At a non-significant level, interestingly, the majority of cash and cashless payments lie closer to the Uncontrolled pole.

- (iii) In Figure 3 we describe how consumers have a bias to feel less in control when primed with both cashless payments and using cash – it is noted that this is not statistically significant.

Figure 1 : Phone & Voice Activated Payments Axis Effect



In Figure 1, the feeling of cashless payments having a lack of control is evident as phone and voice activated payments have the strongest axis effect towards Uncontrolled from baseline and this is at the 95% confidence level. We note that these three stimuli were the only images within the test at 95% confidence.

In Figure 2, we can see that the aggregate of all of the cashless payment stimulus has an axis effect of -7.6 which is significant at the 95% confidence level. Whilst the cash aggregate axis effect at -4.6 is not statistically significant, we could directionally put forward a case that cashless payments makes consumers feel less in control than cash.

In Figure 3, we have detailed the axis effect results for all of the stimulus, noting where the confidence levels lie for each. Whilst not statistically significant, it is interesting to see the results where only one image from the stimulus conveys positive control, for the 20 pence piece. This potentially could be a factor of sampling, where recruitment did not segment the groups of B, C1 and C2 and could have led to more respondents sitting in the lower socio-demograph C2 and being less in control with cash. It is also interesting to note that Contactless led to a feeling of being more in control than the Cash aggregate, albeit not statistically significant.

Figure 2 : Aggregate Cash & Cashless Payments Axis Effect

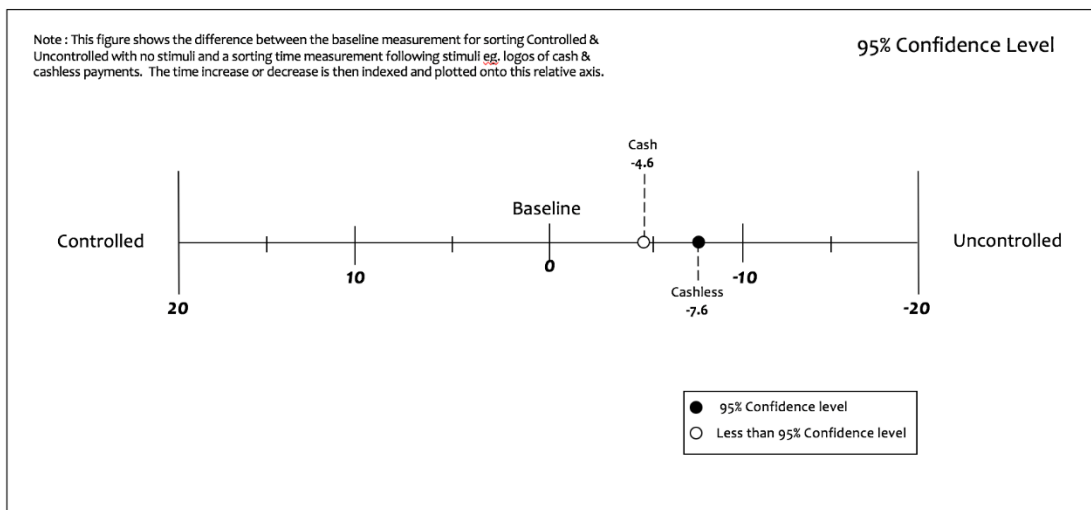
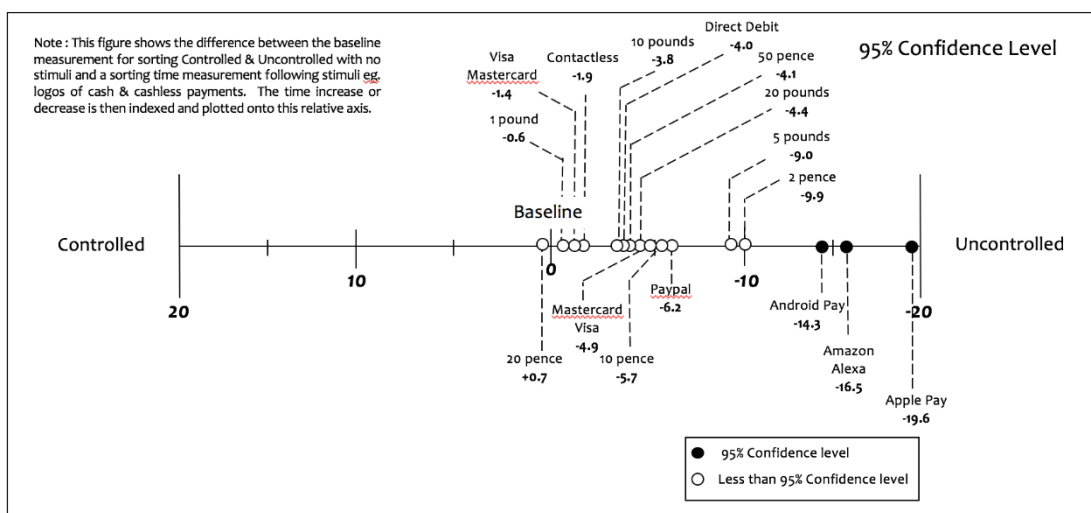


Figure 3 : All Cash & Cashless Payments Stimuli Axis Effect



3.2 MMI – Metaphors and Associations

There were a number of deep metaphors associated with non-cash payments. These tended to differ by payment type and the strongest of them all was Control.

Control Metaphor

The control metaphor was most prevalent in this research and influenced the majority of all payment types. There were five aspects of this metaphor and how it affected our respondent's decision making and use of non-cash payments:

1. Safety and Security – feeling of less control / feeling of control

There the two sides to this: 1) a criminal element taking your card details and fraud which was very prominent and far less prominent was 2) the safety aspect of 'being saved' from an unverified seller on the internet by PayPal or by credit card you can use in an emergency if you have a significant expense that you can't afford right now.

2. Overspending – feeling of less control

Overspending is a big concern for this group. They feel Contactless is a particular risk as it is just too easy to spend money and you can't keep track of your spending. They also referred to credit cards feeling like 'monopoly money', it just doesn't feel like 'real' money.

3. Control of the payment itself – feeling of less control

There is the downside to some payments for example when Apple Pay won't work on the tube, or your card gets blocked due to unusual activity. The positive aspect of this is the control that direct debit gives you, you don't forget the payment, and you just set it up and leave.

4. Control from the financial services industry – feeling of less control

There is also a feeling that the financial services industry have all the power in your relationship with them. If you don't take out credit you won't get a good credit score, and it will affect your eligibility for other products, and consumers resent this. They feel they have little control in this relationship.

5. Control of time – feeling of control

Contactless is super quick and easy and lets them stay on track and lets their day 'flow'. Whereas cash/cheque is annoying and labour intensive especially when you have to pay it into a bank or visit a cash point.

Metaphors by Payment Type

Due to copyright, the images selected by respondents will be described.

Contactless

The images included a futuristic supercar and a maze with a direct path running through it.

Transformation and Journey were critical metaphors associated with contactless payments. Respondents felt that the payment type offers them a quick transformation from unpaid to paid. Their lives are busy especially for those that live in cities and this type of payment aided in the 'flow' and speed of their lives which is where the Journey metaphor comes in. The images of the car and the maze illustrate how contactless facilitates their lives. They talked about living in an 'in and out' culture and saving time and not having to think were great ways to keep them moving through their day. They also wondered how we have done without this form of payment as they use it so much there is a feeling of frustration when you have to enter your PIN and guilty when you forget it because you haven't used

it for so long! The control metaphor was also prevalent here, as there was some concern about keeping track of spending as they felt it was just too easy to spend money without having control of your spending.

Paypal

The images included a Swiss army knife and a mother cat cuddling its kittens.

Two critical deep metaphors related to Paypal. The first was Resource which was denoted by the Swiss army knife. Respondents felt it was so useful for so many types of purchase. You can use it at an extensive range of websites, peer to peer buying and selling and sending money to people who are abroad. They also felt a deep connection to this payment method which is linked to the picture of the cat and its kittens. They feel secure and supported by Paypal because you don't have to give out your details, you don't have to get a card out in a public place, they provide consumer protection if a transaction goes wrong, they offer free returns. Respondents also like the link to Elon Musk and the ethical halo he provides to the brand. The security aspect of PayPal brought through the Container metaphor which is all about keeping things in or out. The control metaphor came into this payment but in a positive way. Respondents felt it gave them control in the way they pay, the amount they are paying the control they have over security.

Apple Pay & Android Pay

The images included a woman's face with steam coming out of her ears and another featured a cool and popular music artist.

The most obvious deep metaphors for Apple Pay and Android Pay were Connection and Resource. It can be a good and a bad resource. When it works, it is a

so convenient, easy quick, simple and you can 'travel through life without stopping'. When it doesn't work (connoted by the lady with steam coming out of her ears) it can be frustrating, embarrassing if you are holding up a queue of people and the inconsistency does make respondents wary of using it. The other deep metaphor associated with this payment type is connection denoted by the picture of Stormzy (a UK grime and hip-hop artist and political activist). They felt that this type of payment is popular, on-trend, fashionable, respected and for people of all ages. Control also comes in here; some were worried that it was too easy to spend money and it didn't feel like real money it was also related to Monopoly money.

Voice Activated Payment

The images included a Vegan logo, a cartoon robot and a futuristic, complicated map on a spaceship navigation system.

Voice Activated is very polarising payment method. The deep metaphor here is Connection as some feel very connected and excited by it, but the majority of our respondents don't see how it is going to fit into their lives and are entirely disconnected from it. The vegan image was from a respondent who felt that this type of payment is just a fad and won't find its way into the mainstream. Most respondents don't trust it, and this is where the control metaphor comes in, they don't know how it works and even doubts that it works 100% of the time. They would be influenced by their friends to adopt it if they had found it useful but would need to be reassured about how much control there is of the payment and what they are buying. There is a certain amount of curiosity and they feel it a futuristic payment denoted by the other images. Those that are excited by it see it as a robot that they can talk to and engage with over and above the payment facilities.

Credit Cards

The images for credit cards included shopping bags, a handgun and a man shrieking in fear.

Credit cards unsurprisingly were seen a blessing and curse. They can be great when you need to buy something but don't have the money right now, such as tyres for your car, an airline ticket in an emergency or for an unexpected bill for your house. This is where the Resource metaphor plays an influential role. However, control comes in strongly here as they respondents had a strong sense of fear with credit cards. The gun and the terrified man both illustrate their sense of lack of control and how the credit card is a gun that can keep you safe when you are under threat, but also you could shoot yourself with it if you lose control of your spending. There was also a positive sense that credit cards can provide you with treats as long as you keep these under control which is denoted by the shopping bags. There was guilt associated with these kinds of purchases, but this was short lived.

Debit Cards

Most people use a debit card as a contactless card now. They love the fact they can pay instantly without having to use a cashpoint, and they take the stress out of life. They use contactless so much now that they have forgotten how to use a debit card with a PIN and often can't remember their PIN. They feel guilty and lazy when they have to enter their PIN these days as it wasn't long ago this was the accepted way of doing things.

Cheques

The images selected included a 1930s car, another contained old floppy discs for computers.

As the images denote cheques are seen as old fashioned, obsolete, "of the analogue era"

redundant, pointless and anachronistic. This group feel a complete lack of connection to this form of payment and they are highly inconvenient because you have to visit the bank to pay them in and they take so long to clear. There was some sense of nostalgia and feeling they are quaint but that puts them firmly into the category of being for the older generation and a form of payment your grandma uses.

BACS Payments

The images selected included a monthly salary statement.

There was a lack of awareness and any strong associations for this type of payment amongst these respondents. They associated it with being paid by your employer or for large sums or transfers. It felt secure which links it to the Container deep metaphor.

4. Concluding remarks

The aim of this study has been to understand how in control consumers feel about cashless payment methods when compared to cash. Using two innovative research techniques we believe our results identify that consumers feel that they are less in control using cashless payments than the more familiar use of cash. We also believe the consumers feel less control over the newer forms of cashless payment such as phone and voice activated payments.

This feeling of lack of control has four dimensions for financial institutions and fintech companies to consider;

- (i) Overspending – contactless money doesn't seem like 'real money' to consumers.
- (ii) Criminal Activity – consumers are concerned around fraud or hacking attacks by third parties or unscrupulous internet traders.
- (iii) The Act of Paying – consumers have had bad experiences and sometimes the methods don't work effectively or you get double charged.
- (iv) Control of Financial Services Companies – consumers don't want their itemised financial behaviour to be used against them.

The research suggests that financial institutions and fintech companies should and could develop interactions and experiences for customers that help them feel more in control of their finances.

Using the four dimensions of control, we believe there are a potential number of ways these institutions and companies can help.

Spending Limits – with real time data, how can we make it easier for customers to spend within their

limits - what feedback via phones, text, apps can we give them to put them in control?

Security – what support services and compensation schemes can we offer to customers around contactless payments – do they exist already and we're just not aware of them?

Frictionless payment – how do we ensure the new technologies make it easier ... not harder to pay with versus cash? Apple Pay is cool when it works but not when it fails you at the front of the queue!

Transparency – With the advent of GDPR and other data rights changes, how can financial services organisations use customer data for the benefit of both parties?

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The authors



Emma Woodley is Associate at Cowry Consulting, London, UK.

E-mail: emmawoodley@cowryconsulting.com



Jez Groom is Founder & Architect At Cowry Consulting, London, UK.

E-mail: jezgroom@cowryconsulting.com

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