



Buy Now Pay Later

An experimental approach to
improving comprehension and
decision making

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Executive Summary

Introduction

Buy Now Pay Later (BNPL) is a relatively new form of online payment mechanism that allows individuals to purchase a product immediately and then pay back later, either via a single full repayment, or through a series of smaller instalments. Payments are normally interest free, allowing consumers to delay the costs of purchases without paying more than the advertised price.

Whilst BNPL products have the potential to provide a level of service and flexibility that is helpful for some consumers, there is concern that consumers' decision making processes mean they may make choices which are not in their long-term interests and which they later regret. These biases include our tendencies to prefer rewards today over future benefits (present bias) and to pay greater attention to information that is more salient.

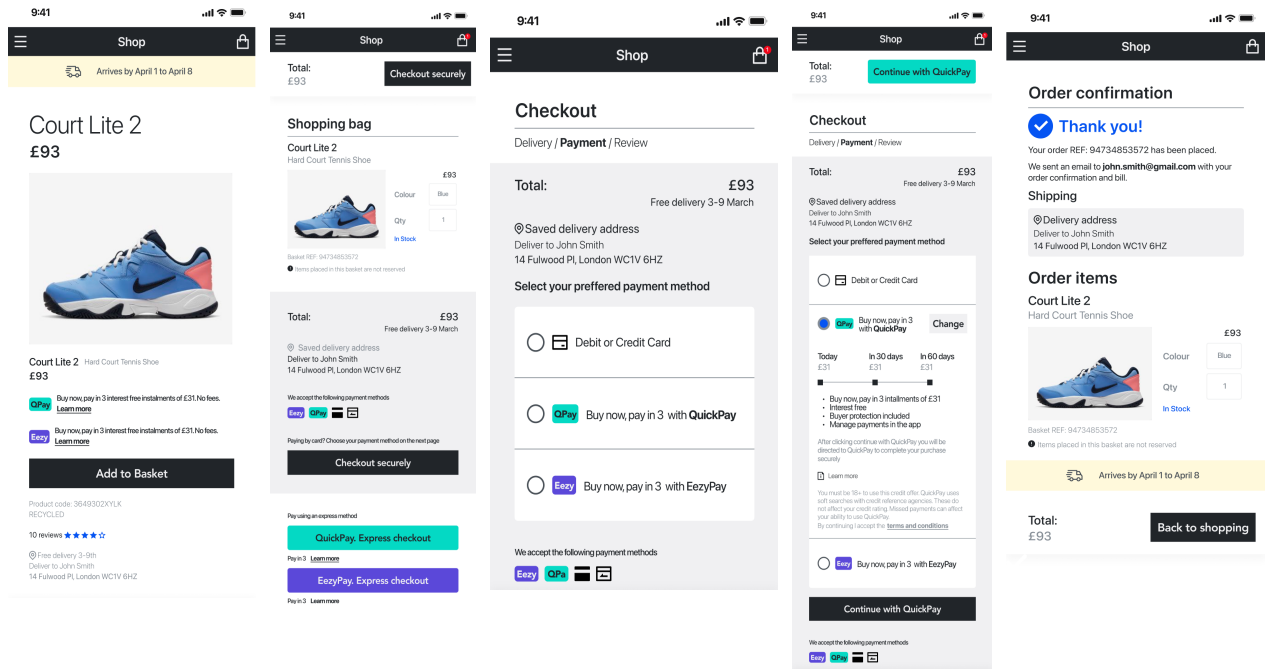
In order to better understand the role that these factors might play in consumers' decision-making, we designed an experiment to test whether alternative designs, informed by behavioural science, could play a role in helping to improve consumer comprehension and decision-making when offered BNPL.

Research Design

We started by conducting research to enable us to understand existing product designs and relevant cognitive biases. This included a literature review; a review of typical BNPL product design features; and expert interviews.

We then used these insights to develop a realistic hypothetical shopping task, designed to accurately recreate the current online BNPL shopping experience. This hypothetical shopping task is the basis of our experiment and the Control condition.

Figure 1: Realistic user journey



We then devised three interventions, which were designed to improve consumers' decision-making and comprehension of BNPL products. We tested the following sets of interventions:

1. A **Disclosure Box** which makes key risk information more salient at every stage of the consumer journey;
2. A **Disclosure Pop-up** which adds in an extra decision point and includes key risk information;
3. A **Combined+** intervention which combines (1) and (2) as well as adding in a number of other changes. The branding colours and logos were removed, language was altered to focus on BNPL being a credit product and the "Express Checkout" option was removed.

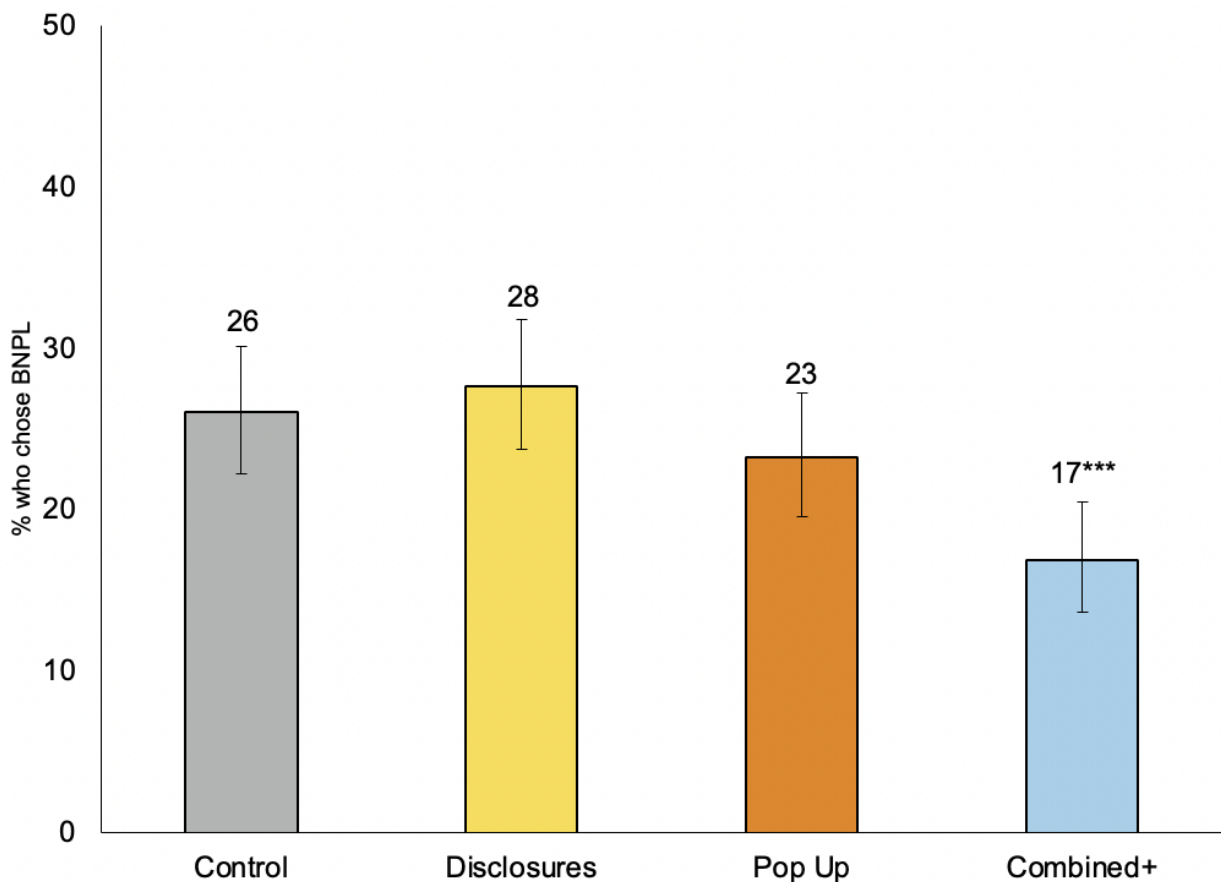
These interventions were tested in a large-scale, hypothetical online experiment, in which participants were asked to complete a task after being randomly allocated to one of the three intervention groups above, or the **Control** condition.

This enabled us to ascertain what effect these design features might have on consumers' decision to choose BNPL (as opposed to a credit/debit card); and how much they understood about the choices they were making. Comprehension was measured with a nine-question survey.

Headline Results

We found that the **Disclosure Box** and **Disclosure Pop-up** interventions did not have an effect upon the proportion of participants choosing to pay by BNPL products, as compared to the **Control**. However, there was a large reduction in participants choosing to pay by BNPL in the **Combined+** intervention (from 26% in the **Control** to 17% in **Combined+**). This is a large and statistically significant effect size.

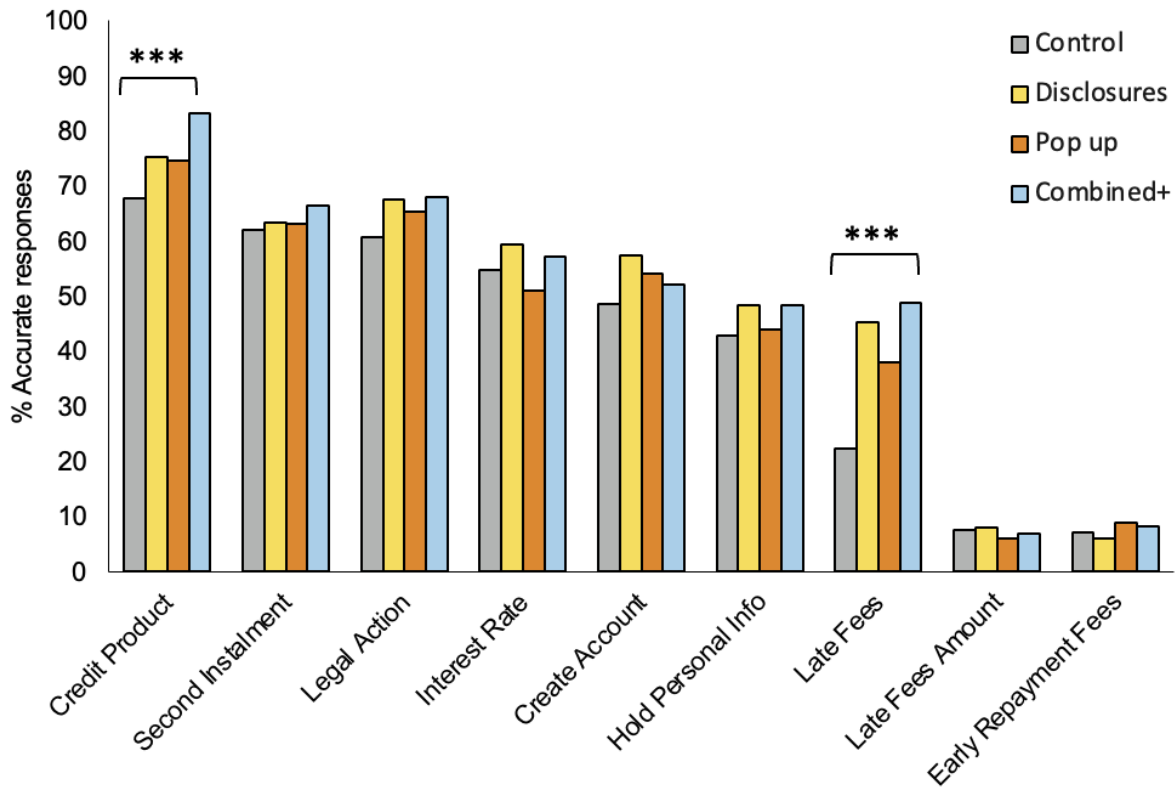
Figure 2: Proportion of participants choosing BNPL



Note: Error bars represent 95% Confidence intervals. *** represents 1% threshold for statistical significance

The experiment also showed that *all* of the interventions increase comprehension of the BNPL product terms compared to the **Control**. But that this was particularly focused on specific areas. We found that comprehension about whether BNPL is a credit product and whether the BNPL product charges late fees increase dramatically through our interventions.

Figure 3: Comprehension split by question and intervention



Note: *** represents 1% threshold for statistical significance

Whereas 68% of participants in the **Control** group correctly identified that BNPL is a credit product, this figure rose to between 75% and 83% in the intervention groups; and whereas just 22% of participants in the **Control** correctly identified that late fees would be applied in the event of non-payment, this more than doubled to between 38% and 49% in the intervention groups. Across the various measures, we once again found that the **Combined+** intervention has the strongest effect on comprehension.

Conclusion

In this research we have demonstrated that simple changes to the choice environment can increase comprehension of BNPL terms and conditions and change individuals’ choices. We believe that providers, regulators and policymakers should pay attention to how key information is presented; the decision points that consumers may or may not need to make informed choices; and how BNPL is branded, relative to other choices.

1. Introduction

Buy Now Pay Later (BNPL) is a new, but increasingly common, form of credit that allows individuals to seamlessly purchase a product and then pay back at a later date, without interest charges. Whilst on the face of it, this new product provides a level of service and flexibility that is helpful for some consumers, there is concern that some individuals may rack up unaffordable levels of debt that could lead them into serious financial distress. That could be due to the way the BNPL product is designed including the lack of affordability checks, how the user journey is designed, our own human flaws and biases, or a combination of all three. Against this backdrop, there is growing interest and debate from policymakers into how to make BNPL a safer product that works well for everyone.

This report hopes to add to that debate by providing the results of a highly realistic, online hypothetical experiment into the effectiveness of several possible interventions on BNPL choices and comprehension. Within the experiment, we test three interventions that could help to improve comprehension and potentially change consumer payment choices.

This report proceeds as follows: Section 2 provides further background on the Buy Now Pay Later market and a short summary of the behavioural biases that might lead consumers to make poor decisions when offered it. The third section provides further details on the research design, including the inputs to our research process, the experimental research design, and the main outcomes of interest. Section 4 provides the results for our main and secondary outcomes of interest, as well as for specific sub-groups of interest. The final section concludes and highlights areas for further work or regulatory attention. Annexes provide full details of the experiment and our analysis.

2. Background

BNPL allows individuals to purchase a product immediately and seamlessly, and then pay back later, either via a single full repayment, or through a series of smaller instalments. Payments are normally interest free, allowing consumers to delay the costs of purchases when necessary without paying more than the advertised price. Although similar offline products have been available in the past for purchasing larger household items and repaying through instalments, the new wave of BNPL providers focussed on online shopping have changed the market considerably.

BNPL has grown rapidly in the UK, as well as in other markets like the US, India and Australia. In the UK, between January 2019 and December 2021, the total value of BNPL lending in the UK grew 21 times larger, with an estimated £2.7bn lent through BNPL during 2020.^{1,2} BNPL purchasing now accounts for 6% of all online purchases in the UK and is forecast to double by 2025 to 12%.³

Survey research indicates that as many as 14 million people in the UK used a BNPL provider between January 2020 and 2021 (27% of UK adults).⁴ The primary users of BNPL products tend to be younger than the population average - The Woolard Review estimated that 75% of users were younger than 36 years old, compared to the UK median age of 40.³ A separate study using credit card transaction data revealed that 19.5% of active UK credit cards made a repayment to a BNPL provider at least once during 2021.²

Some studies from other countries have analysed consumer attitudes and behaviours associated with BNPL. A study of young female shoppers in New Zealand found that BNPL users have a higher impulse-buying tendency.⁵ In Australia, a survey found that lower financial literacy is associated with higher assessment of benefits from BNPL, and lower assessment of risks.⁶ A

¹ Guttman-Kenney, B., Firth, C., & Gathergood, J. (2022), [Buy Now, Pay Later \(BNPL\)... On Your Credit Card](#). Working Paper

² FCA (2021), [The Woolard Review - a review of change and innovation in the unsecured credit market](#)

³ FIS (2022), [The Global Payments Report](#)

⁴ Citizens Advice (2021), [Buy Now... Pain Later?](#)

⁵ Fook, L., & McNeill, L. (2020), [Click to buy: The impact of retail credit on over-consumption in the online environment](#). Sustainability 2020, 12(18), 7322

⁶ Gerrans, P., Baur, D. G., & Lavagna-Slater, S. (2021). [Fintech and responsibility: Buy-now-pay-later arrangements](#). Australian Journal of Management, 47(3), 474–502.

survey in Sweden finds that conscientiousness, consideration for the future, and emotional stability correlate with less online credit use (BNPL).⁷

As BNPL is a relatively new product, there is relatively little causal evidence on consumer behaviour when using BNPL. Fortunately there is significant evidence from the broader financial decision-making literature that might be relevant for understanding consumers' decisions when using short duration, unsecured credit. We try to summarise the most relevant behaviours that might be relevant for BNPL usage here, as it will help to set the stage for the research that follows.

Consumers may have a variety of reasons for consciously choosing to use BNPL products (e.g. to keep bills manageable by spreading costs, or to purchase multiple versions of the same product in order to "try before you buy", with the intention of returning the unwanted items). In some circumstances, using BNPL may be the best option for an individual to be able to smooth their income and expenditure.

However, we know that humans are all susceptible to heuristics and biases that mean that we occasionally make decisions that are not in our long-term best interest. These biases and heuristics can be particularly problematic when making financial decisions, as these often involve making trade-offs between the present and future; weighing up risk and reward; and evaluating the value of complex contracts, all of which we find difficult.⁸ For BNPL specifically, there are several behavioural effects that are worth mentioning - present bias, the effect of friction, and salience.

When we make decisions involving multiple time periods (i.e. present and future), we tend to prioritise the present moment in our decision-making, while 'discounting' or deprioritising future benefits and costs, even though we later regret that decision.⁹ This is called 'present bias'. As BNPL reduces immediate costs (shifting them into the future) whilst allowing us to purchase goods we want now, we may use BNPL to satisfy our present-biased needs, even if we cannot afford the repayments in the long-run. Present bias may explain why individuals may end up taking out unaffordable levels of debt.

⁷ Nydén, V. (2021), [*'Buy Now, Pay Later' Misuse From a Personality Perspective*](#). Thesis Paper

⁸ Erta, K., Hunt, S., Iscenko, Z. & Brambley, W. (2013), [*Applying behavioural economics at the Financial Conduct Authority*](#)

⁹ O'Donoghue, T. & Rabin, M. (1999), [*Doing it now or later*](#). The American Economic Review, vol. 89, no. 1, 1999, pp. 103–24

We generally prefer to take the path of least resistance, especially when we do not have a strong preference for any one option over another. Because we tend to prefer less effortful courses of action, the simpler and easier a process is, the more likely we are to complete it.¹⁰ On the other hand, ‘frictions’, or decision points that add an extra moment to reflect on our choices, may help us to make better-informed and more considered decisions.¹¹ Lack of friction in the current BNPL customer journey may help explain why some consumers may find themselves with a BNPL product without realising.¹² The addition of friction could help some people make a more informed choice.

Finally, salience refers to how prominent or salient information is in a given context. Often, information about a product or service is technically available but is given less prominence than other information, or is stored in a link away from the main decision-making environment.¹³ If information is harder to find or less salient, then people may not use that information to make a fully informed choice. BNPL checkouts tend to make some elements (including messages promising ‘no fees’) more prominent or eye-catching to draw consumers’ attention, while hiding other information in smallprint, potentially leading them away from important details (for example, information about late fees are often hidden).

¹⁰ Thaler, R., & Sunstein, C. (2008), *Nudge: Improving Decisions about Health, Wealth and Happiness*

¹¹ Somon, D., (2020), [Sludge: A Very Short Introduction](#). Behavioural Economics In Action at Rotman, White Paper

¹² Citizens Advice (2021), [Buy Now... Pain Later?](#)

¹³ Adams, P. & Smart, L. (2017), [From advert to action: behavioural insights into the advertising of financial products](#)

3. Research Design

Overall approach

Our experiment was informed by a combination of qualitative and descriptive evidence gathered from several different angles. We worked in close collaboration with Citizens Advice and 2CV, a global market research agency.¹⁴

In the first phase, 2CV conducted user interviews. Alongside this, we conducted a rapid evidence review and an audit of retailer websites, and ran semi-structured interviews with experts. This combination of approaches helped us to understand the existing academic evidence on consumer behaviour and users' own experiences. The audit of existing BNPL checkout journeys helped to create a highly realistic decision-making environment in which to test our interventions.

The first phase of work helped us develop a shortlist of interventions to test in the second phase of the research. The second phase included two parts. First, 2CV conducted qualitative user testing of the interventions in the shortlist to get direct user feedback. This work acted like a funnel, helping to reject or refine the interventions we had shortlisted. Then, we used these refined designs to create the 3 broad interventions that we test in the quantitative experiment. The quantitative experiment is an online, hypothetical shopping task, which asks users to purchase a product and decide on different payment methods. We did this at scale - with over 2000 participants - and tested different interventions to see the effect of these interventions. The experiment will be explained in more detail below.

This approach maximises the value of both qualitative and quantitative research methods. The qualitative approach enables the intervention ideas to be refined and improved through a design process that focuses on the user. The best ideas, refined through this process, are then put into the experiment and tested at sufficient scale to provide highly reliable, quantitative evidence of their impact.

¹⁴ <https://www.2cv.com/>

Experimental Design

Sample selection and screening

We recruited a nationally representative sample of 2000 participants.¹⁵ Our overall sample size is primarily based on resource and time constraints. However, we conducted a power analysis in advance of data collection to determine that we needed 500 participants in each group to provide adequate statistical power for our analysis.¹⁶

All of our participants were over 18 years old, resident in the UK and shop online. Since we're specifically interested in online users, we screened for online shopping both at participant selection stage and again in a self-reported screening question. We also emphasised to participants that they will need to use a mobile phone to complete their task.

Experimental task(s)

The main task in the experiment was for participants to check out with a single item from a fictional online retailer - a pair of trainers. This checkout process involved deciding how to pay using the available payment options including debit/credit card or a choice of two different, hypothetical BNPL providers - EezyPay and QuickPay (shortened to EPay and QPay on some screens). Individuals were asked to imagine that this was a real purchase and to make their choices as they would in real life. Individuals were able to click on most aspects of the online environment, including asking for more information or reviewing the product terms and conditions. A full schematic of the decision points in the checkout environment can be found in Annex 1.

The participants were asked to complete a series of tasks and surveys within the experiment. Broadly, this led to a maximum of 5 stages.

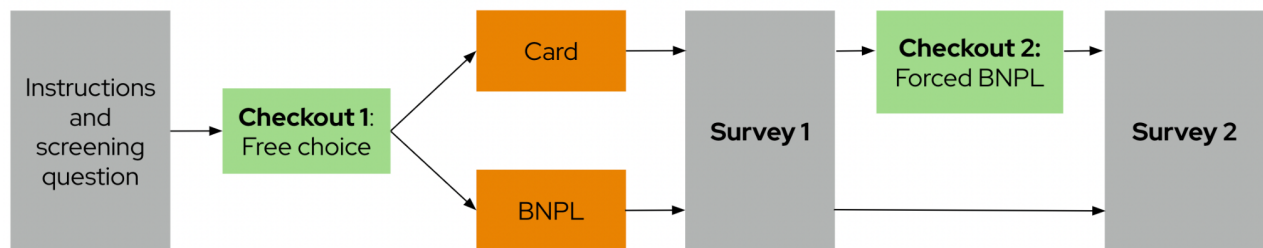
1. The initial screening questions and instructions for the experimental task

¹⁵ We ensure a nationally representative sample based on gender, age and region.

¹⁶ Power analysis conducted using the pwr package for R; Champeley et al., 2018

2. An initial “free choice” checkout task (Checkout 1) in which participants can select which payment option they would like to use (BNPL or a Debit/Credit Card)
3. An initial survey (Survey 1) which asks questions about the choices they made in the checkout task
4. If individuals chose to use debit / credit, then they are asked to retake the checkout task and told that they can only complete the purchase using a BNPL option (Checkout 2)
5. A final survey (Survey 2) which asks questions about the BNPL product, as well as a more general set of questions to understand more about the participants characteristics and behaviours. Both surveys can be found in Annex 2.

Figure 4: Overview of experimental tasks



Design of the experimental environment

In order to recreate a realistic consumer experience in our experiment, we undertook an audit of online retail checkouts. We focussed on the user journey for consumers who did not yet have a Buy Now Pay Later account. Each online retailer was reviewed on a mobile device. We reviewed 11 retailer checkouts and noted down common ways in which screens were presented, including the order of screens, key interactive features, copywriting and layout.¹⁷

This review found the following 8 design patterns appeared across retailers in the display of BNPL:

¹⁷ See also Johannesson (2021), [Dark Patterns in Digital Buy Now Pay Later Services](#)

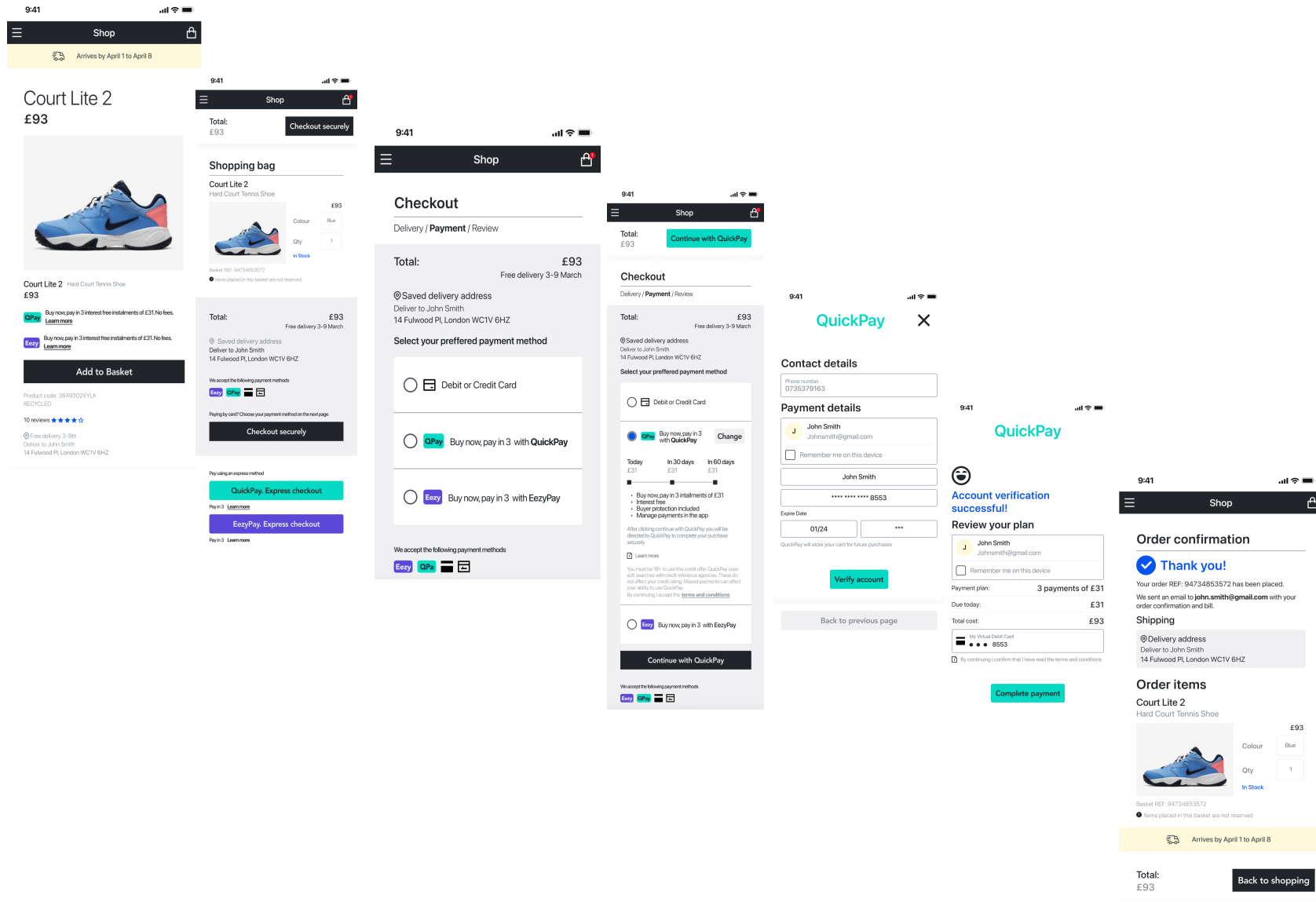
1. **BNPL is often advertised before the checkout.** For example on a product page, on a banner, or in a modal overlay.
2. **BNPL advertised during checkout - separately to other methods.** Using different language or different visual layout. Often described as an express service.
3. **BNPL advertised during checkout - alongside other non-credit payment methods,** and using the same language or visual layout.
4. **Process maps and checklists** are used to breakdown BNPL steps
5. **BNPL is often described as easy, quick and interest free**
6. **Breakdown of instalments is highlighted** as users sign up for BNPL
7. **Hidden Terms and Conditions,** with users needing to click through to find details
8. **Seconds to sign-up.** Users are seamlessly redirected to the BNPL provider when they click 'buy'.

The audit demonstrated the ease of checking out using a BNPL provider (as well as the offer of BNPL 'express checkouts'), showing why it is possible for consumers to use BNPL products with an incomplete understanding of the terms of the agreement, or even by accident.¹⁸ The review also found that typically, the broader checkout journey consists of many steps from selecting the payment method, to entering billing information and delivery details. These steps and features were mapped out and prioritised so that only essential screens remained in our experiment. For example, participants were not asked to enter a verification code that they received in an email at sign-up as this was not deemed essential to recreating the experience.

The 8 core design patterns were all replicated in the control condition for our experiment. To give readers a sense of the realism of the experimental environment, Figure 4 illustrates a simple user flow, with an individual paying by QuickPay without looking at any of the additional information or terms and conditions.

¹⁸ Citizens Advice (2021), [Buy Now... Pain Later?](#)

Figure 5: Simple user flow through the control condition



Interventions

Participants were randomly allocated to one of four different consumer journey experiences, as outlined below

Control	Disclosure Box	Disclosure Pop-up	Combined +
	Disclosures throughout checkout		Disclosures throughout checkout
		Disclosures in pop-up on payment screen	Disclosures in pop-up on payment screen
			Removal of branding

The **Control** condition represents current market practices for new users using BNPL via a retailer website on a mobile device. It realistically replicates the way that BNPL options are displayed to consumers in the shopping basket and checkout.

The **Disclosure Box** condition is identical to the **Control** condition, but with the addition of a prominent disclosure box, which appears throughout the shopping basket and checkout process. The **Disclosure Box** includes the following information: i) QuickPay / EezyPay are credit products; ii) Late payment could incur fees; iii) Non-payment could result in referral to a debt collection agency. This box was repeated wherever a BNPL option was presented, so on the product page, the basket page and the payment information screens.

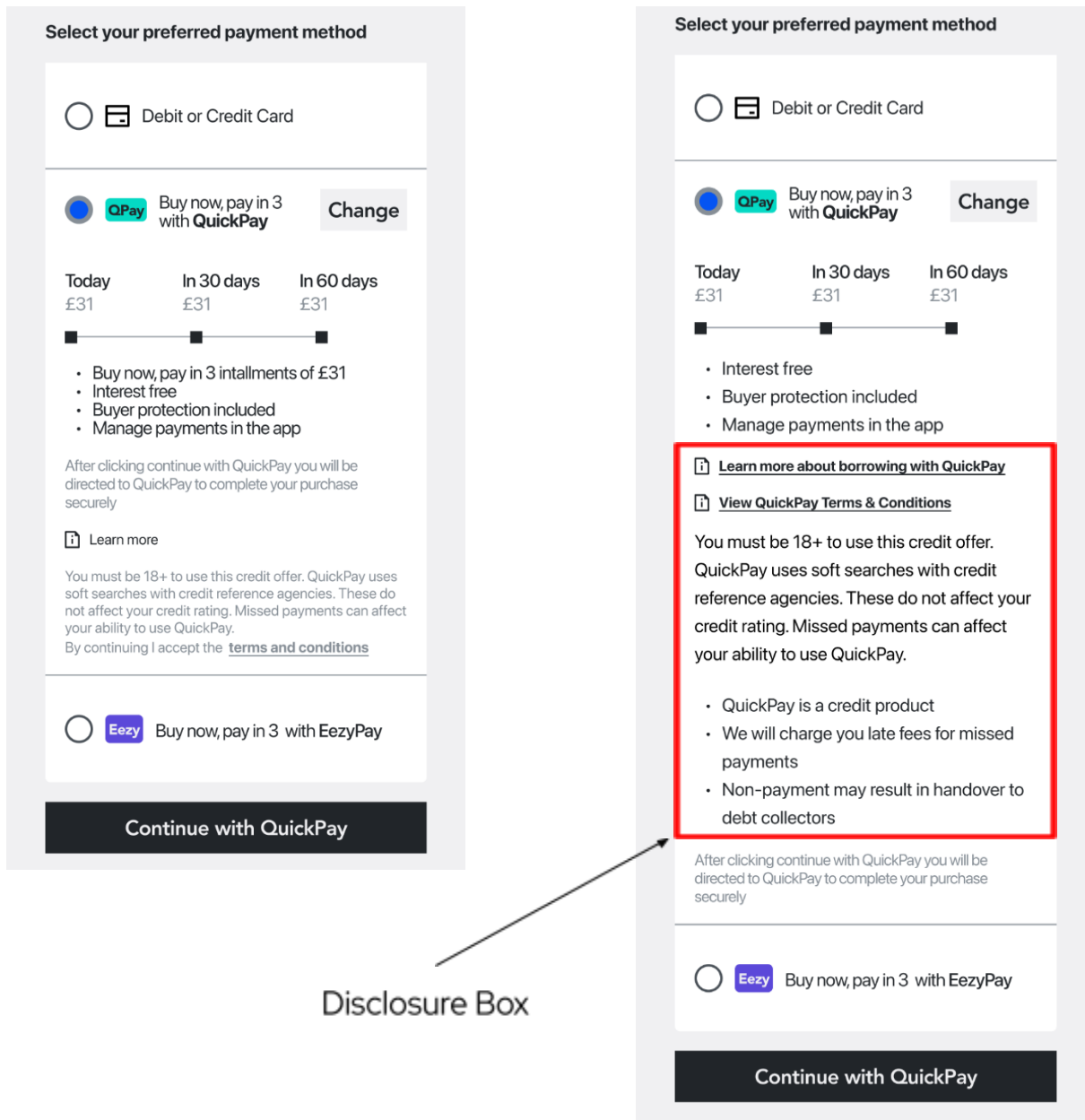
Figure 6: Disclosure Box that appeared throughout the user journey



Please note that QuickPay and EezyPay are credit products. Late payment or non-payment could incur fees and could be referred to debt collection agencies.

In addition, if the participant chose the radio button exploring the option to pay with either of the BNPL options, then the information would be repeated within the payment option as below.

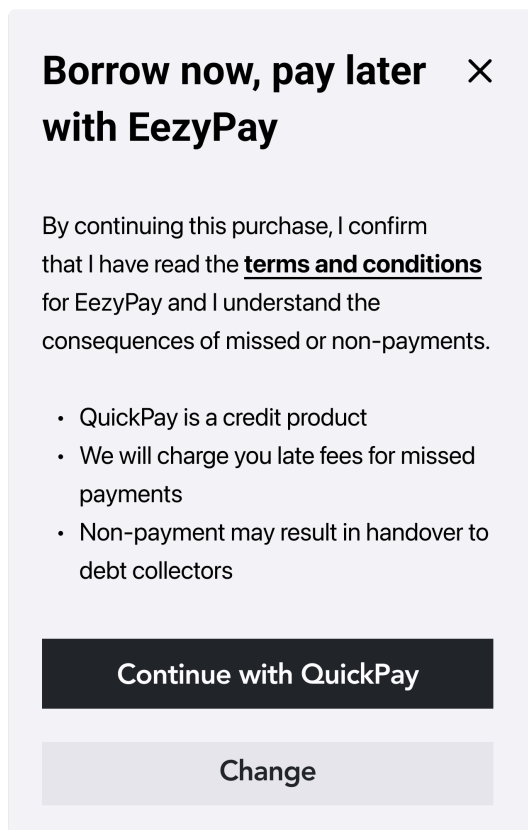
Figure 7: Comparison of Control (left) and Disclosure Box (right) payment option screens



The **Disclosure Box** condition is intended to make the key risks of BNPL more salient earlier on in the consumer journey as well as at the moment of purchase. The inclusion of information about potential risks such as late payment fees and debt collection in the event of late or non-payment acts to balance out the information about user benefits. All of this information is available for the user in the control condition (via the linked Terms and Conditions); the **Disclosure Box** simply makes the information more salient throughout the consumer journey.

The **Disclosure Pop-up** condition is identical to the **Control** condition, but with an additional pop-up screen requiring confirmation on the payment confirmation page. This pop-up contains the same information as in the disclosure box in the Disclosures condition and also includes the following text: *“By continuing this purchase, I confirm that I have read the terms and conditions [linked] for QuickPay [EezyPay] and I understand the consequences of missed or non-payments”*

Figure 8: Disclosure Pop-up confirmation screen



As in the **Disclosure Box** condition, the intention of this intervention was to make the most important risks more salient to users. No new information is provided, instead we simply take

some of the key information and give it to users at the moment in which they are about to make a decision. Unlike the **Disclosure Box** condition, this condition includes an extra friction to the process, requiring the user to re-confirm that they want to continue. Such decision points have been shown to be effective in helping consumers make better decisions in a variety of contexts.¹⁹

The **Combined+** condition incorporates both the **Disclosure Box** and the **Disclosure Pop-up** features. In addition, branding colours and logos are removed and the language is altered to focus on BNPL being a credit product and that using it is equivalent to borrowing. This also includes removing the “Express Checkout” option and including information about total costs. These changes occur throughout the user journey and are intended to help consumers understand the seriousness of the choice they are about to make, understand the full implications (of taking out a credit product) and put the BNPL products on the same visual level as the other payment option.

Figure 9.a: Comparison of Control (left) and Combined+ (right) Conditions on product screen





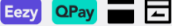


 Buy now, pay in 3 interest free instalments of £31. No fees. Learn more	<p>Credit and loan options:</p>  Borrow £93 with QuickPay over 3 interest free instalments of £31. Learn more
 Buy now, pay in 3 interest free instalments of £31. No fees. Learn more	 Borrow £93 with EezyPay over 3 interest free instalments of £31. Learn more

Figure 9.b: Comparison of Control (left) and Combined+ (right) Conditions on checkout screen













<p>We accept the following payment methods</p>  <p>Paying by card? Choose your payment method on the next page</p> <div style="background-color: black; color: white; text-align: center; padding: 5px;">Checkout securely</div>	<p>We accept the following payment methods</p>  <div style="border: 1px solid blue; padding: 5px; margin: 10px 0;">  Please note that QuickPay and EezyPay are credit products. Late payment or non-payment could incur fees and could be referred to debt collection agencies. </div> <p>Paying by card? Choose your payment method on the next page</p> <div style="background-color: black; color: white; text-align: center; padding: 5px;">Checkout securely</div>
<p>Pay using an express method</p> <div style="background-color: #00e0c0; color: white; text-align: center; padding: 5px; margin-bottom: 5px;">QuickPay. Express checkout</div> <p>Pay in 3 Learn more</p> <div style="background-color: #6a3d9a; color: white; text-align: center; padding: 5px; margin-bottom: 5px;">EezyPay. Express checkout</div> <p>Pay in 3 Learn more</p>	

¹⁹ See for example [Soman, Xu, and Cheema](#) (2010); [Soman, Cheema, and Chan](#) (2012); and, [Hayes, Lee and Thakrar](#) (2018) for decision points in dietary choices, credit card decisions and investment purchases.

Figure 9.c: Comparison of Control (left) and Combined+ (right) Conditions on product info screen

<div style="background-color: #00c090; color: white; padding: 5px; display: flex; justify-content: space-between; align-items: center;"> How it Works ✕ </div> <p>Buy Now. Pay Later. Interest Free.</p> <p>Spread the cost of your purchase with 3 interest free payments of £31. No fees.</p>	<div style="background-color: #0056b3; color: white; padding: 5px; display: flex; justify-content: space-between; align-items: center;"> Close ✕ </div> <p>How it Works</p> <p>Borrow Now. Pay Later. Interest Free.</p> <p>Spread the cost of £93 with 3 interest free instalments of £31.</p>
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Figure 9.d: Comparison of Control (left) and Combined+ (right) Conditions on payment selection screens

<div style="background-color: #f0f0f0; padding: 10px;"> <p>Select your preferred payment method</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <input type="radio"/>  Debit or Credit Card </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <input type="radio"/>  Buy now, pay in 3 with QuickPay </div> <div style="border: 1px solid #ccc; padding: 5px;"> <input type="radio"/>  Buy now, pay in 3 with EezyPay </div> <p style="font-size: small; margin-top: 10px;">We accept the following payment methods</p> <div style="display: flex; align-items: center; gap: 5px;">     </div> </div>	<div style="background-color: #f0f0f0; padding: 10px;"> <p>Select your preferred payment method</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <input type="radio"/>  Debit or Credit Card </div> <p>Available loan options</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <input type="radio"/> Borrow with QuickPay </div> <div style="border: 1px solid #ccc; padding: 5px;"> <input type="radio"/> Borrow with EezyPay </div> <p style="font-size: small; margin-top: 10px;">We accept the following payment methods</p> <div style="display: flex; align-items: center; gap: 5px;">     </div> </div>
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Outcome measures

We have two main outcome measures that we focus on in the analysis. These are (i) whether or not BNPL was chosen as the payment option in the first, “free choice” checkout; and (ii) the level of comprehension consumers have of the BNPL product. For the latter we created a total comprehension score which will combine comprehension about the BNPL products over nine different questions:

1. What is the interest rate that QuickPay / EezyPay adds to purchases?
2. Does QuickPay / EezyPay charge late fees for missed payments?
3. When is the second instalment due for this purchase?
4. Is QuickPay / EezyPay a credit product?
5. QuickPay / EezyPay charges late fees for missed payments. How much are those late fees?
6. Does QuickPay / EezyPay charge early repayment fees if you choose to pay for a purchase before your repayment is due?
7. Would QuickPay / EezyPay be able to take legal action against you in the event you were unable to pay for your purchase?
8. By using QuickPay / EezyPay for this purchase, would the company hold your personal information on record?
9. By using QuickPay / EezyPay for this purchase, did the company require you to create an account with them?

Secondary outcome measures

In addition to these primary outcome measures, the experimental environment also allows us to investigate a number of other interesting outcomes that could be affected by the different interventions. These include recall of payment method and product cost; perceived affordability of the product; positive user experience; likelihood of future use; whether they would recommend to others; overall evaluation of the brand; and trust in the brand.

Demographic and other participant information

The two surveys in our experiment helped us to collect additional information about the participants. This included: Prior usage of BNPL; general views of BNPL payment methods; Financial literacy using a standard 3 question measure;²⁰ Delayed gratification index (Money subscale) using a standard measure;²¹ Present-bias, measured using a single question which is

²⁰ Lusardi, A. & Mitchell, O.S. (2011), [Financial literacy around the world: an overview](#). Journal of Pension Economics and Finance, 10, pp 497-508

²¹ Hoerger, M., Quirk, S., & Weed, N. (2011), [Development and validation of the Delaying Gratification Inventory](#). Psychol Assess. 2011 Sep;23(3):725-38.

found to correlate with more complex measures of present bias;²² Self-reported financial distress using the questions from the ONS Wealth and Assets Survey;²³ and, Socio-economic status.

We used this information in our analysis to understand whether specific characteristics are correlated with our main outcome measures - whether someone chooses to use BNPL and their level of comprehension of the BNPL product. Where relevant, we also used this information to see whether different groups are affected differently by our different interventions.

²² Pinger, P.R. (2017), [*Thinking About Tomorrow? Predicting Experimental Choice Behavior and Life Outcomes from a Survey Measure of Present Bias*](#). SOEPpaper No. 935

²³ Gathergood, J. & Guttman-Kenney, B. (2016), [*Can we predict which consumer credit users will suffer financial distress?*](#)

4. Results

We now set out the results. First we briefly discuss the participants who completed our task. We then present the main results on choice of payment method and comprehension. We then look at the range of secondary outcomes we were able to measure in the experiment, and finally we assess how different groups behaved and how they reacted to our interventions. We include detailed statistical tables and explanations for all of our analysis in Annex 3.

As planned, 2011 participants completed the experiment. Of these, 37 were excluded as they did not pass the attention checks that were built into the experiment. Our final sample covers the remaining 1974 participants, who are representative of the national population for age, gender and geographic region. More details about the sample and balance across conditions can be found in Table 1, Annex 3.. Importantly we found that there is balance between conditions on observable characteristics, and a similar rate of attrition between the different conditions, as shown in Table 2, Annex 3.

Main Findings

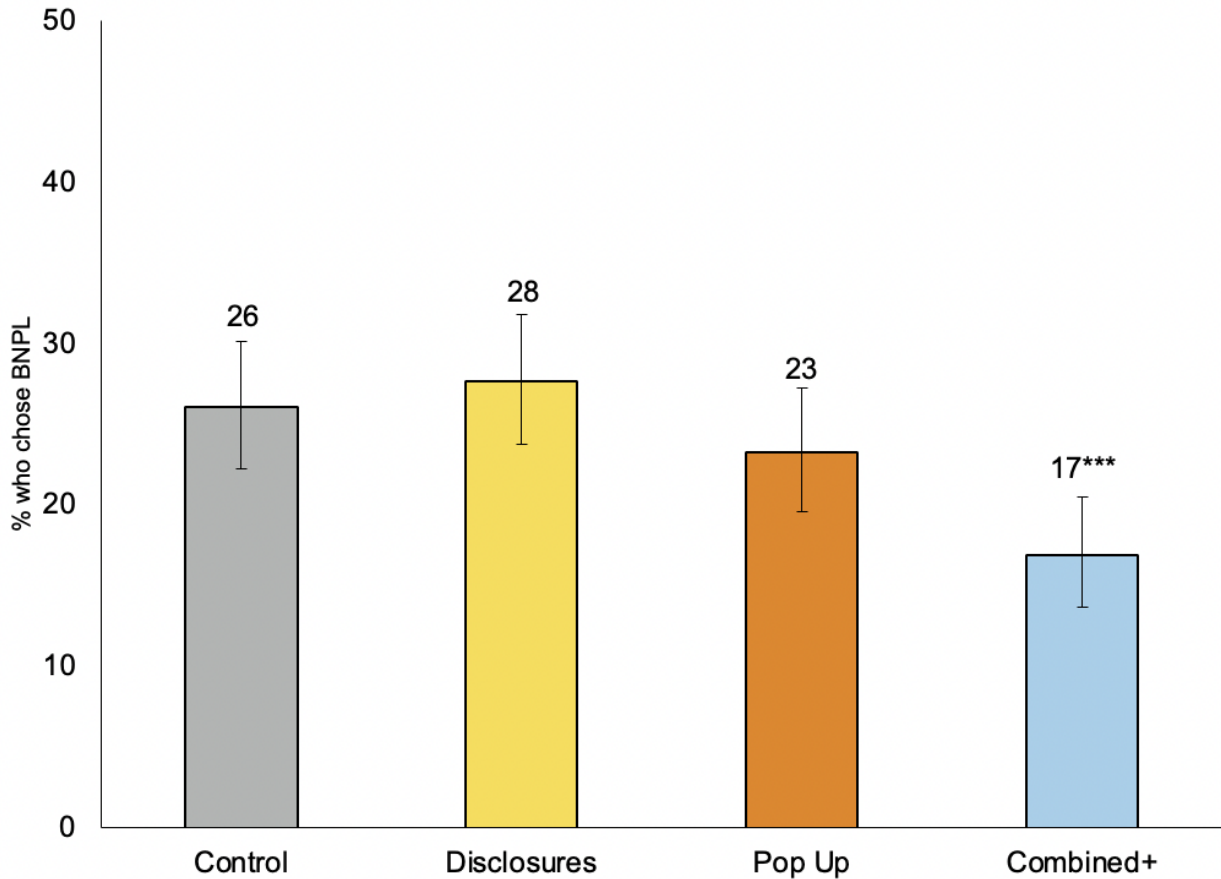
Choice of BNPL

In our **Control** condition, we find that 26% of participants chose BNPL. This is broadly in line with other estimates of BNPL use in the general population that suggest that 27% of UK adults made a payment using BNPL between Spring 2020 - Spring 2021.²⁴ This helped to give us confidence that people are making decisions in line with how they would behave in the real world, and therefore that the effect of our interventions might also be replicated in the real world.

We find that our **Combined+** intervention led to a reduction in the proportion of people selecting BNPL by 9 percentage points (a 35% reduction from the control group). This effect is highly statistically significant. We see some small changes in choices in the **Disclosure Box** and **Disclosure Pop-up** conditions, but these are not statistically significant.

²⁴ Citizens Advice (2021), [Buy Now... Pain Later?](#)

Figure 10: Effect of interventions on payment choice



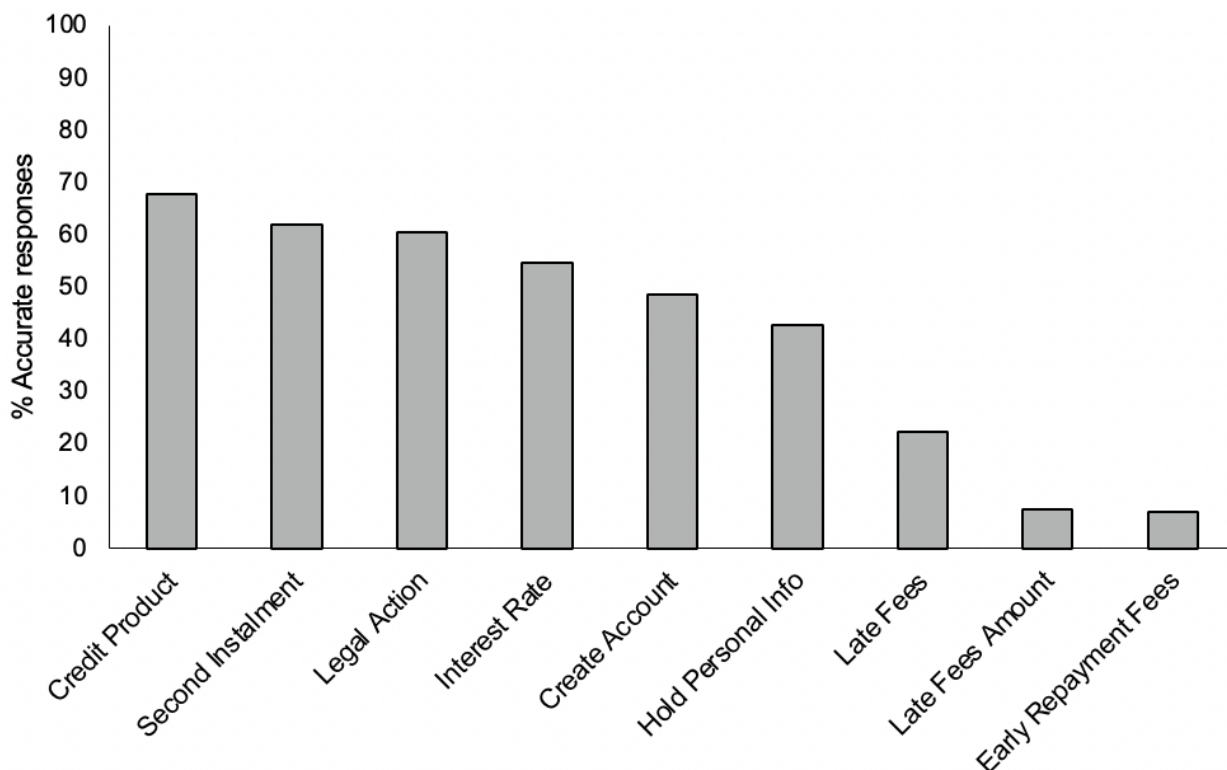
Note: Error bars represent 95% Confidence intervals. *** represents 1% threshold for statistical significance

Comprehension of BNPL product features

As noted above, our other main outcome measure was comprehension of the BNPL products available to participants. We test this using a set of 9 questions where there were unambiguously correct answers. Overall we find that comprehension of BNPL is low, with participants getting just 45% of the nine questions correct, on average. However there is a lot of difference between the questions; for example, comprehension that BNPL is a credit product is relatively high – 68% of participants in the control group got that right. In contrast, understanding of the existence and

size of late fees was relatively low - 22% and 7% respectively. This is in line with other evidence from a survey of users suggesting that three in ten users face a fee they didn't expect.²⁵

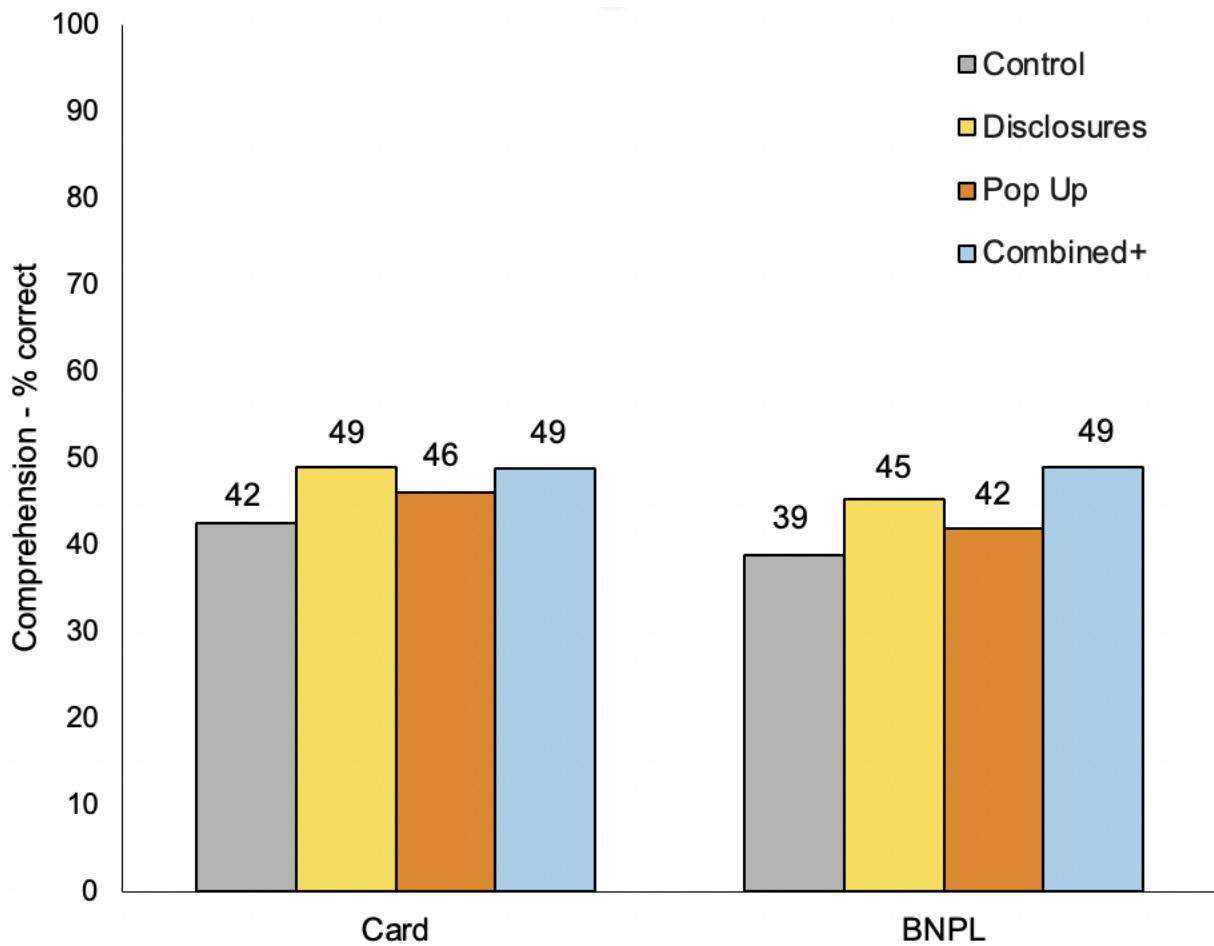
Figure 11: Baseline level of comprehension



We find that all three of our interventions are able to improve comprehension. We see increases of 6.3 percentage points, 3.5 percentage points, and 7.3 percentage points for the **Disclosure Box**, **Disclosure Pop-up** and the **Combined+** interventions respectively. We see this improvement across both individuals who initially chose BNPL and those who initially chose to pay by card (see Figure 12). It makes sense that **Combined+** shows the highest improvement, since this intervention includes both the **Disclosure Box** and the **Pop-Up**, as well as a number of other changes that made the available information even more salient.

²⁵ Citizens Advice (2021), [Buy Now... Pain Later?](#)

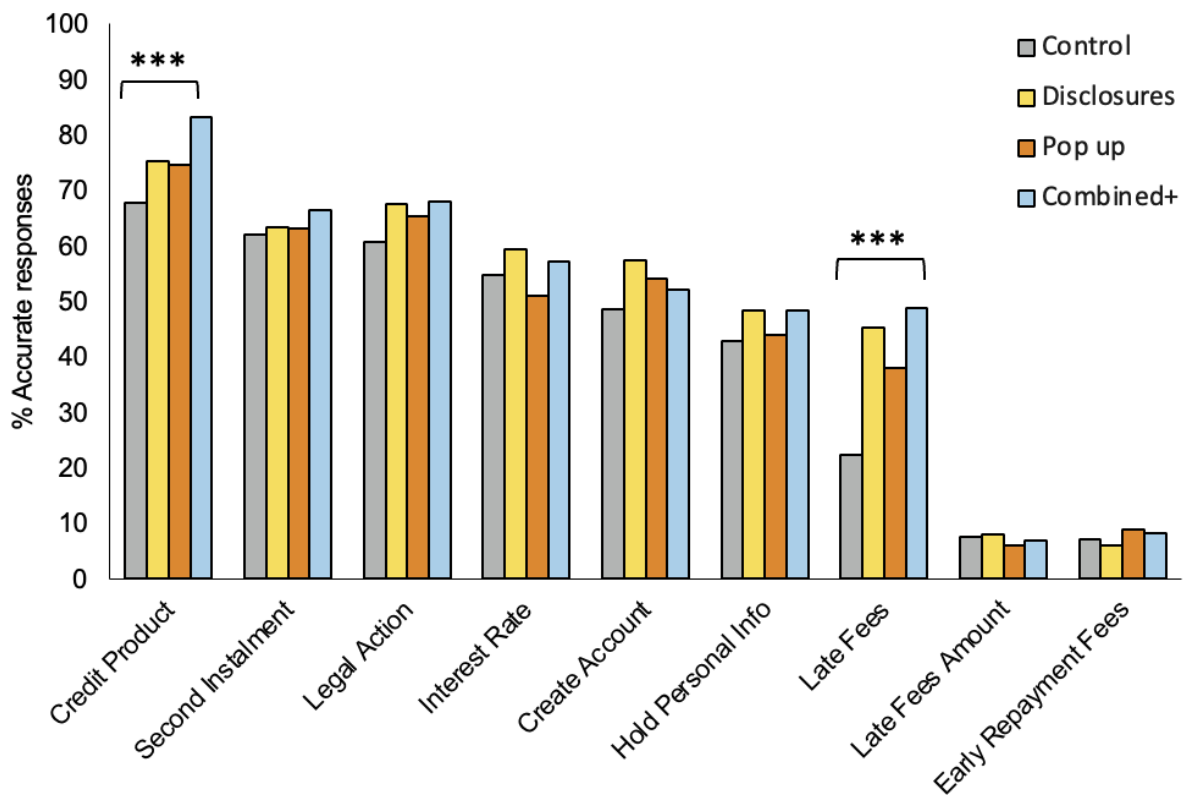
Figure 12: Effect of interventions on comprehension, by initial choice of payment



If we look into individual questions, we can see that this effect is primarily driven by the effect of our intervention on two specific questions within the set of 9 comprehension questions: knowledge that BNPL is a credit product and knowledge about the existence of late fees. Whereas 68% of participants in the **Control** group correctly identified that BNPL is a credit product, this figure rose to between 75% and 83% in the intervention groups; and whereas just

22% of participants in the **Control** group correctly identified that late fees would be applied in the event of non-payment, this more than doubled to between 38% and 49% in the intervention groups.

Figure 13: Effect of interventions on specific comprehension questions



Note: *** represents 1% threshold for statistical significance

Interestingly these aspects of the product were explicitly unshrouded in the **Disclosure Box**, **Disclosure Pop-Up** and **Combined+** conditions, whereas they were ‘hidden’ in the T&Cs in the **Control** condition. This suggests that whatever gets elevated into a salient position in the consumer journey gets noticed and used by more consumers. Other aspects of the BNPL were not made so salient in our interventions and we did not see a corresponding increase in comprehension on these aspects.

These results are in line with other results looking at consumer comprehension on complex issues. For example, in studies looking into privacy and marketing preferences, baseline comprehension scores were 50% and 42%, and the best interventions increased this to 60% and 46% respectively.²⁶ In a financial setting, research by the FCA into the comprehension of investment products was relatively low (54% - 59%) and increased moderately in response to information disclosure and decision point style interventions (10 percentage points and 14 percentage points respectively).²⁷ And finally, with respect to credit products, a survey of credit card users showed that 96% of borrowers underestimated the time it would take to repay an average credit card debt using minimum payments.²⁸

Secondary Results

As discussed above, we also have a number of other outcome measures that we can look at to further understand how our interventions affect consumers' preferences and behaviours.

Similar to comprehension, we test separately whether individuals can recall the price of the item purchased. This is of interest as individuals may be overly focussed on the repayment value (three repayments of £31) rather than the total price when making purchases with BNPL. The **Combined+** treatment is explicitly designed to tackle this by making sure that the total price appears in every place that the repayment value appears. However we find no effect of any of our treatments on the ability to correctly recall the total price of the shopping basket - across all groups roughly 81% of people recall the correct price (see Table 8 in Annex 3). However we do find that where individuals do incorrectly guess, they tend to underestimate the total price - 15% underestimate compared with 4% over-estimating.

Related to the total basket price, we ask participants about their perceptions of the affordability of the hypothetical item in our experiment. We were interested to know whether users of BNPL were more likely to rate the item as more affordable, as they could use the BNPL product to split the cost. In fact, we found the opposite effect; individuals who selected to pay by BNPL actually said the item was less affordable than those who chose to pay by credit or debit card (see Table 9). At first glance this may seem counterintuitive, but remember that this is from the

²⁶ [Behavioural Insights Team: Improving Comprehension of Online Contractual Terms and Privacy Policies, July 2019](#), experiments 2 and 3.

²⁷ See [Delias, Farghly, Hayes, Ng & Spohn](#) (2022) and [Farghly, Hayes, Ng & Spohn](#) (2022) respectively.

²⁸ Adams, P., Guttman-Kenney, B., Hayes, L., Hunt, S., Laibson, D., & Stewart, N. (2022), [Do nudges reduce borrowing and consumer confusion in the credit card market?](#) *Economica* (Centenary Edition)

self-selected group who said they would pay by BNPL; they may have chosen BNPL precisely *because* they perceived the product to be less affordable.

We ask a number of questions on participants' experience of the BNPL consumer journey (see Tables 10 to 13 in Annex 3). On user experience, we found that overall people report having a positive user experience (4.2 out of 5) and that this does not differ between groups. We found that participants who chose to pay using BNPL stated that they would be more likely to use our BNPL lenders for future purchases and that they would be more likely to recommend our BNPL providers to others. They also rated our BNPL lenders more favourably overall. Furthermore, our treatment conditions had little effect on the perceptions of participants who initially paid using credit/debit card, whereas perceptions did vary across conditions for participants who chose to use BNPL. Specifically, among participants who chose BNPL, perceptions were generally more positive in the **Combined+** condition than in the other conditions.

Why might this be the case? It is important to remember that participants were not randomly assigned to the card or BNPL groups - these groups were self-selected. Fewer participants chose to pay using BNPL in the **Combined+** condition, and so what we might be seeing here is that the threshold for choosing BNPL in the **Combined+** condition shifted, such that this group included those who were already more positively predisposed to BNPL payment methods. It is important, therefore, not to draw causal conclusions about the effect of our **Combined+** interventions on brand evaluations, because we cannot disentangle the effects of differential pre-existing attitudes from the effects of our interventions.

Finally we look at trust in BNPL providers. As expected we see that trust is higher amongst those who chose the BNPL option in Checkout 1. But unlike the other self-reported measures of brand perception, we do not find any differences according to the different interventions that we tested.

Sub-group Analysis

As noted above we collected information about participants demographic background, financial circumstances (including prior BNPL use) and behavioural traits. For demographic information, we include gender, age, ethnicity (analysed separately, but also with a binary variable of white / people of colour), and disability status. We also collected information about transgender people, but do not have sufficient sample size to investigate this group specifically. For financial

circumstances we have information about household income, financial distress, socio-economic status and prior use of BNPL. In behavioural traits we include present bias, delayed gratification and financial literacy. We used this information to analyse what participant features predict our two main outcome measures - choice of payment in Checkout 1 and comprehension of the BNPL products.

We found that the biggest single predictor of choice in Checkout 1 is prior BNPL use. Although other variables were statistically significant predictors when looked at in isolation, when combined only prior BNPL use was significant (Table 14 in Annex 3). For example, if we only look at demographic factors, then we find that disability is a significant predictor of choosing BNPL is Checkout 1. However this disappears when we include the variable for prior BNPL use. We do not find any significant interaction terms between our conditions and prior-use.

For comprehension of the BNPL products, there was a more nuanced picture, with comprehension being influenced by age, income and financial literacy (Table 15 in Annex 3). Comprehension was lower in the 18-24 year old group and in the lowest income group. And each additional correct response on the Financial Literacy survey was associated with a 4 percentage point increase in comprehension. We do not find any significant interaction terms between our conditions and age, income, or financial literacy.

5. Conclusions and policy recommendations

Through a rigorous mixed-methods research approach, we designed and tested a set of interventions to help consumers make more informed choices to use BNPL in online retail environments. We asked a nationally representative sample to make payment choices in a highly realistic online shopping environment. By randomly varying who was exposed to different interventions, we were able to estimate the causal effect of our interventions. Compared with the **Control** condition, our interventions improved comprehension and, in one case, changed choices. Firms, regulators and policymakers should be alert to the importance of design choices and behavioural science to help inform responsible digital product design.

We found that all of our interventions are able to increase comprehension on two key aspects of BNPL: that BNPL is a form of credit, and that in our case, BNPL products charge late fees. In addition, we found that one of our interventions - a layering of disclosure, decision points and marketing changes - also changes people's behaviour, leading to fewer people choosing BNPL to pay for their hypothetical shopping basket. We also see that preferences for, and subjective valuation of BNPL does not decrease due to our interventions, demonstrating that we can have a positive impact on comprehension without damaging people's perceptions of BNPL.

Although some demographic, financial, and behavioural characteristics were associated with increased BNPL use, the only characteristic that reliably predicted the likelihood to choose BNPL in our experiment was whether the participant had used BNPL in real life in the past 12 months. We also found that comprehension of the BNPL product terms was lowest in younger participants, in participants with the lowest household incomes, and in participants with the lowest levels of financial literacy.

All research methods have limitations. One of the main drawbacks of using a hypothetical online experiment is that the decisions are also hypothetical, so individuals *may* choose differently when their own money is on the line. However, there are good reasons to believe that our results will translate into the real world. First, we designed our consumer journey using an audit of real retailers' BNPL user journeys, and recreated this journey in high-fidelity to mimic a real consumer journey. Second, we see that the hypothetical choice to use BNPL in our experiment closely matches the prevalence in the real world. Finally, we see that comprehension and choices move together as would be expected.

A second, related drawback is that we do not know whether our interventions helped people to make more *affordable* payment choices. A key policy concern is that excessive BNPL use could simply be storing up debt that cannot be repaid in the future. As choices are hypothetical and there is no risk of individuals ending up in problematic debt, and no way for us to accurately measure affordability during the experiment, we cannot answer this question.

These two drawbacks of online hypothetical experiments point towards further research using field trials. Field trials are experiments conducted with firms using their real customers making real choices; consequently, field trials can address both of these drawbacks and provide even better evidence of the effectiveness of these and other interventions. Such research could help tell us more about the impact of our interventions on affordable lending. We welcome invitations of interest from regulators, policymakers and BNPL providers willing to work with us to further test these and other interventions in the real world, so that we can be sure they work before they are put into practice, either through regulations or by firms directly.

Authors

This report was put together as a collaboration between [Paul Adams](#) and CogCo. Any mistakes or omissions are Paul Adams and CogCo's responsibility.

Acknowledgements

Many of the insights at the heart of this report would not have been possible without the discussions and inputs of numerous experts that we have engaged while conducting the research. With that in mind, we would like to thank Merle van den Akker, Chris Woolard, John Gathergood, Philip Newall, Stefan Hunt, Daniel Read, Dilip Soman, Neil Stewart and Shlomo Benartzi for giving us their time and insights.

Annex 1: Experimental design

Checkout 1 instructions

In a moment, we will ask you to purchase an item in a pretend online checkout.

There is no right or wrong way to do this; just respond with what comes naturally to you! If a button or a link that you tap does not respond, you do not need it to complete the task.

You will not be asked to input any personal details or payment information. The survey has no access to any of your personal information or apps on your phone.

Please pretend this is a real purchase and base your choices on what you would really do.

Doing so will help us to understand how people really make decisions when they are shopping online.

Important: Once in the checkout, do not use the back button on your phone, as this will cause the survey to end. If you wish to go back to a previous screen in the checkout, please use the blue "Back" button at the top of the checkout screen

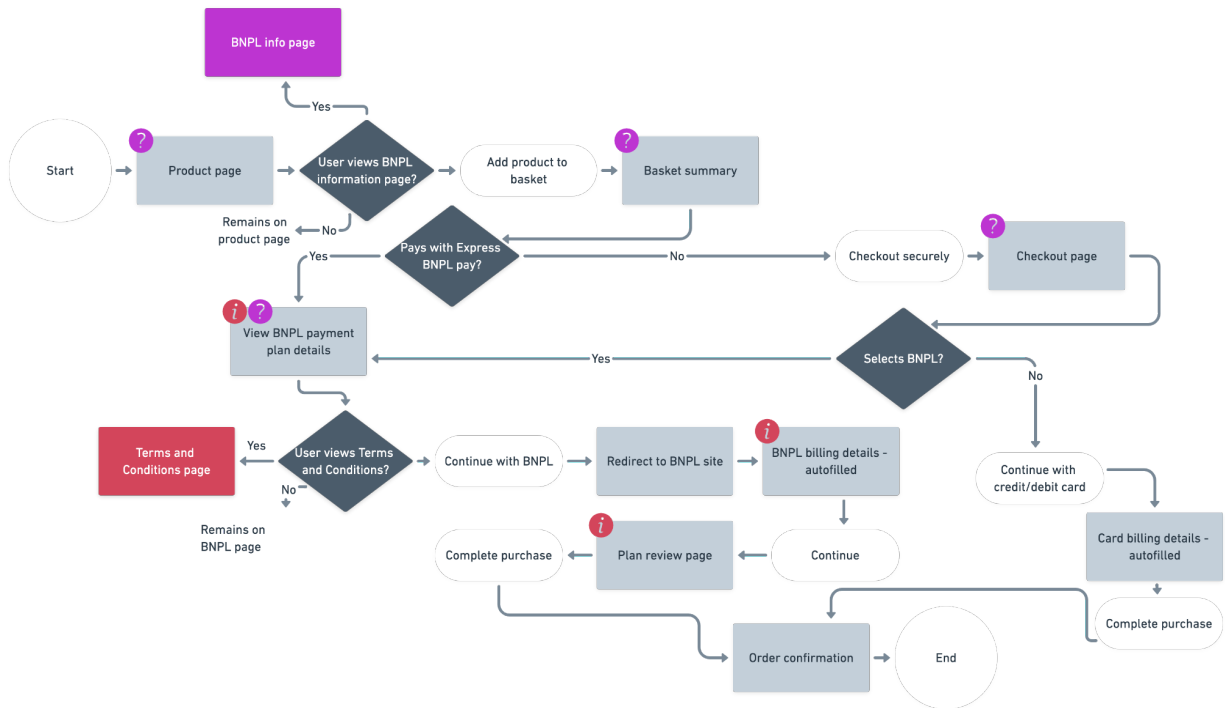
Checkout 2 instructions

Thank you for answering those questions. We are going to ask you to go through the checkout again. This time, however, we will ask you to complete the purchase using either QuickPay or EezyPay.

As before, the survey has no access to any of your personal information or apps on your phone, and you will not be charged for the purchase.

Important: Once in the checkout, do not use the back button on your phone, as this will cause the survey to end. If you wish to go back to a previous screen in the checkout, please use the blue "Back" button at the top of the checkout screen

Full Schematic of user flow for Checkout 1



Annex 2: Survey questions

Survey 1

Recall

Which payment method did you use to make the purchase?

- a. Credit/debit card
- b. QuickPay
- c. EezyPy
- d. I can't remember

What was the total payable cost for the item you purchased? Please enter your answer in whole pounds (free text entry)

Affordability

In your opinion, how affordable was the item, to you personally?

- a. Very affordable
- b. Quite affordable
- c. Quite unaffordable
- d. Very unaffordable

Survey 2

Comprehension

You may have noticed that QuickPay and EezyPay are exactly the same and have identical terms and conditions.

We will now ask you some questions about your understanding of the terms and conditions of QuickPay / EezyPay.

Please base your answers to these questions only on information you read in the online checkout. If you didn't read a particular piece of information, please respond "don't know".

1. What is the interest rate that QuickPay / EezyPay adds to purchases?
 - a. 0%*
 - b. 1%
 - c. 3%
 - d. 5%
 - e. I don't know

2. Does QuickPay / EezyPay charge late fees for missed payments?
 - a. Yes*
 - b. No
 - c. I don't know

3. When is the second instalment due for this purchase?
 - a. In 7 days
 - b. In 14 days
 - c. In 30 days*
 - d. In 60 days
 - e. I don't know

4. Is QuickPay / EezyPay a credit product?
 - a. Yes*
 - b. No
 - c. I don't know

5. QuickPay / EezyPay charges late fees for missed payments. How much are those late fees?
 - a. £3
 - b. £6
 - c. £9
 - d. £15
 - e. I don't know

6. Does QuickPay / EezyPay charge early repayment fees if you choose to pay for a purchase before your repayment is due?
 - a. Yes
 - b. No *
 - c. I don't know

7. Would QuickPay / EezyPay be able to take legal action against you in the event you were unable to pay for your purchase?

- a. Yes*
- b. No
- c. I don't know

8. By using QuickPay / EezyPay for this purchase, would the company hold your personal information on record?

- a. Yes*
- b. Only if I provide permission
- c. No
- d. I don't know

9. By using QuickPay / EezyPay for this purchase, did the company require you to create an account with them?

- a. Yes*
- b. No
- c. I don't know

Note: Response options marked with an asterisk are the correct responses

User experience

We will now ask you some questions about your experience of the QuickPay / EezyPay checkout process

The QuickPay / EezyPay checkout process was...

- 1. Easy
- 2. Frustrating*
- 3. Quick

For all items, the response scale was a 1-5 Likert scale with "Not at all" (1), "Moderately" (3), and "Extremely" (5) anchors

*Reverse scored

Likelihood of future use

How likely would you be to use QuickPay / EezyPay for a future purchase?

1 - Not at all / 2 / 3 - Moderately / 4 / 5 - Extremely

Recommend to others

If a friend or family member asked for advice on whether to use QuickPay / EezyPay, how likely would you be to recommend QuickPay / EezyPay to them?

1 - Not at all / 2 / 3 - Moderately / 4 / 5 - Extremely

Overall evaluation of the brand

Overall, how favourable is your overall evaluation of QuickPay / EezyPay?

1 - Not at all / 2 / 3 - Moderately / 4 / 5 - Extremely

Brand perceptions

You will now read some statements about QuickPay / EezyPay. Please rate your agreement / disagreement with each statement using the scale provided. **Please base your answers only on the impression of the brand that you formed during the checkout process**

1. QuickPay / EezyPay is an organisation I can trust
2. QuickPay / EezyPay make their terms and conditions clear to their customers
3. QuickPay / EezyPay aims to help their customers
4. QuickPay / EezyPay takes advantage of its customers*

Response scale: 1-5 Likert scale, with "Strongly disagree" and "Strongly agree" anchors

*Reverse scored

Usage of BNPL providers

How many times in the past 12 months have you purchased anything using a Buy Now Pay Later method?

Once

2-5 times

6-10 times

11-15 times

More than 15 times

N/A - I have purchased items using Buy Now Pay Later, but not in the past year

N/A - I have never used Buy Now Pay Later to purchase items

Over the last 12 months, how many different Buy Now Later providers have you used?*

1

2-3

4-5

More than 5

I don't know

*This question was only asked of participants who indicated that they had used BNPL at least once in the previous 12 months

General views of BNPL methods

The next few questions will ask you about your general views about Buy Now Pay Later services.

Buy Now Pay Later services allow customers to delay payment for an item or to split the cost of an item across multiple payments (e.g., Klarna, ClearPay, LayBuy). They are often offered on online purchases at the point of payment.

Buy Now Pay Later methods can be described as...

1. Easy to use
2. Cheap
3. Likely to lead to overspending*
4. Useful in helping to plan for large purchases
5. Risky for the financial health of the people who use them*
6. Easy to understand
7. Useful in helping with budgeting

Response scale: 1-5 Likert scale with Strongly Disagree and Strongly Agree anchors

*Reverse scored

Financial literacy

1. Suppose you had £100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
 - a. *More than £102**
 - b. Exactly £102
 - c. Less than £102
 - d. I don't know

2. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
 - a. More than today
 - b. Exactly the same
 - c. *Less than today**
 - d. I don't know

3. Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock investment fund"
 - a. True
 - b. *False**
 - c. I don't know

Delayed Gratification index - Money subscale

Next, we will ask you a few questions about your financial habits

1. When I am able to, I try to save away a little money in case an emergency should arise
2. It is hard for me to resist buying things I cannot afford*
3. I try to spend money wisely
4. I cannot be trusted with money*
5. When someone gives me money, I prefer to spend it right away*
6. I manage my money well
7. I enjoy spending money the moment I get it*

Response scale: 1-5 Likert scale with Strongly Disagree and Strongly Agree anchor points

* Reverse coded

Present bias

"I live for today and do not think about tomorrow"

1-7 Likert scale with Strongly Disagree and Strongly Agree anchors

Socio-economic status

1. "I don't think I'll have to worry about money too much in the future". How much do you agree with this statement?
2. "I have enough money to buy things I want". How much do you agree with this statement?
3. "I don't need to worry too much about paying my bills". How much do you agree with this statement?

1-5 Likert scale with Strongly Disagree and Strongly Agree anchors

Financial Distress

1. Thinking about any consumer debts you have, to what extent is keeping up with the repayment of them and any interest payments a financial burden? Would you say it was:
 - a. A heavy burden
 - b. Somewhat of a burden
 - c. Not a problem at all
 - d. N/A I have no consumer debts
 - e. Prefer not to say
2. Which one of the following statements best describes how well you are keeping up with your bills and credit commitments at the moment?
 - a. Having real financial problems and have fallen behind with many of them?
 - b. Falling behind with some of them
 - c. Keeping up with all of them, but it is a constant struggle
 - d. Keeping up with all of them, but it is a struggle from time to time
 - e. Keeping up with all of them without any difficulties
 - f. Don't have any commitments
 - g. Prefer not to say
3. In the past 12 months, how often have you run out of money before the end of the week or month and needed to use a credit card or overdraft to get by?
 - a. Always
 - b. Most of the time
 - c. Sometimes

- d. Hardly ever
- e. Never
- f. Prefer not to say

Demographics

Which of the following age brackets do you fall into?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75-84
- 85+
- Prefer not to say

Which of the following regions do you live in?

- North East
- North West
- Yorkshire and Humberside
- East Midlands
- West Midlands
- East of England
- South East
- South West
- London
- Wales
- Scotland
- Northern Ireland

Which, if any, of the following terms best describes your gender?

- Woman
- Man
- Non-binary
- Prefer not to say
- Don't know

Transgender is an umbrella term that refers to people whose gender identity, expression or behaviour is different from those typically associated with their assigned sex at birth. Other

identities considered to fall under this umbrella include non-binary, gender fluid, and genderqueer - as well as many more.

Do you identify as transgender?

Yes

No

Prefer not to say

The Equality Act 2010 defines a person as disabled if “they have a mental or physical impairment, which has a substantial and long term (has lasted, or is expected to last, for at least 12 months) adverse effect on their ability to carry out normal day to day activities.

We follow the social model of disability. We believe that society’s barriers and negative attitudes cause people to be disabled, not a person’s impairment or long term health condition.

Do you consider yourself to be disabled?

Yes - a physical health condition/disability

Yes - a mental health condition/disability

Yes - physical and mental health condition(s)/disability

No

Prefer not to say

What is your ethnic group?

White Scottish/English/Welsh/Northern Irish/British

White Irish

White Gypsy or Irish Traveller

Any other White background

White and Black Caribbean

White and Black African

White and Asian

Any other mixed/multiple ethnic background

Indian

Pakistani

Bangladeshi

Chinese

Any other Asian background

Black African

Black Caribbean

Any other Black/African/Caribbean background

Arab

Any other ethnic group

Prefer not to say

Which of the following best represents the total annual income for your household, before deductions, tax, and national insurance?

- Less than £9,999
- £10,000 to £19,999
- £20,000 to £29,999
- £30,000 to £39,999
- £40,000 to £49,999
- £50,000 to £59,999
- £60,000 to £74,999
- £75,000 to £99,999
- £100,000 or more
- Prefer not to say
- I don't know

How often do you shop online?

- Most days
- Weekly
- Monthly
- A few times a year
- Yearly
- Less than once a year
- Never

Attention check

This is an attention check question. From the list of colours below, please select "Red".

- Blue
- Green
- Red
- Yellow

Annex 3: Experimental results

Table 1: Demographic breakdown of participants across each of the conditions

	Control	Disclosures	Pop Up	Combined	Overall
Gender					
Woman	53.74%	52.85%	52.93%	53.25%	53.19%
Man	46.06%	46.75%	46.06%	45.73%	46.15%
Non-binary	0.00%	0.41%	1.01%	0.81%	0.56%
Missing	0.20%	0.00%	0.00%	0.20%	0.10%
Age					
18-24	6.67%	7.11%	7.27%	6.71%	6.94%
25-34	14.95%	14.63%	15.96%	18.50%	16.01%
35-44	19.39%	20.73%	18.38%	19.51%	19.50%
45-54	21.82%	19.31%	20.00%	21.14%	20.57%
55-64	19.80%	19.11%	21.82%	16.87%	19.40%
65-74	14.95%	16.06%	13.74%	13.82%	14.64%
75+	2.42%	2.85%	2.83%	3.46%	2.89%

	Missing	0.00%	0.20%	0.00%	0.00%	0.05%
<hr/>						
Ethnicity						
	White	90.91%	88.21%	88.49%	85.97%	88.34%
	Asian	4.04%	4.47%	5.05%	5.29%	4.71%
	Mixed	4.04%	4.88%	3.43%	7.11%	4.86%
	Black	0.20%	1.22%	0.81%	0.20%	0.61%
	Other	0.81%	1.22%	2.22%	1.42%	1.42%
<hr/>						
Region						
	East Midlands	10.30%	10.37%	9.50%	7.93%	9.52%
	East of England	4.84%	7.32%	8.08%	5.49%	6.43%
	London	11.92%	9.96%	9.29%	10.98%	10.54%
	North East	5.66%	4.07%	5.05%	4.88%	4.91%
	North West	11.72%	11.99%	12.12%	12.81%	12.16%
	Northern Ireland	2.83%	1.83%	2.02%	1.63%	2.08%
	Scotland	7.48%	6.91%	8.49%	6.91%	7.45%
	South East	13.33%	16.26%	13.94%	15.85%	14.84%

South West	7.48%	8.13%	7.88%	9.96%	8.36%
Wales	4.24%	4.47%	3.43%	4.47%	4.15%
West Midlands	9.50%	8.33%	9.90%	10.16%	9.47%
Yorkshire and Humberside	10.71%	10.37%	10.30%	8.94%	10.08%
<hr/>					
Disability					
Yes	24.24%	22.97%	24.65%	23.17%	23.76%
No	72.12%	74.59%	73.13%	74.39%	73.56%
Missing	3.64%	2.44%	2.22%	2.44%	2.69%
<hr/>					
Household income					
<£10,000	9.09%	6.71%	8.69%	5.49%	7.50%
£10,000 - £19,999	16.77%	17.89%	16.36%	17.48%	17.12%
£20,000 - £29,999	18.18%	17.89%	19.19%	18.50%	18.44%
£30,000 - £39,999	13.94%	12.81%	13.33%	13.01%	13.27%
£40,000 - £49,999	11.11%	10.98%	11.31%	11.59%	11.25%
£50,000 - £59,999	6.06%	5.89%	4.65%	6.71%	5.83%
£60,000 - £74,999	4.85%	6.30%	6.47%	6.30%	5.98%

£75,000 - £99,999	3.64%	4.88%	4.85%	6.30%	4.91%
>£100,000	3.84%	3.46%	2.83%	2.03%	3.04%
Missing	12.53%	13.21%	12.33%	12.60%	12.67%

Table 2. Attrition rates across conditions

	Control	Disclosures	Pop up	Combined+	Overall
Dropped out	32.30%	36.43%	30.17%	34.80%	33.52%
Completed	67.70%	63.57%	69.83%	65.20%	66.48%

In total, 3025 people completed the panel provider’s screening questions and were passed through to the experiment. Of those, 2011 (66.48%) completed the experiment. A chi square test of association indicated that attrition rates did not significantly differ across conditions, $\chi^2(3, N = 3025) = 7.71, p = .053$.

Table 3. Regression model - predicting checkout 1 payment decision from experimental condition

	Coefficient	Standard error	90% Confidence Interval		t	p
			Lower	Upper		
Intercept	.256	.019	.215	.246	13.48	< .001
Condition: Disclosures	.013	.027	-.031	.058	-0.50	.62
Condition: Pop up	-.024	.027	-.068	.020	0.89	.37
Condition: Combined+	-.091	.027	-.135	-.046	-3.37	<.001

Note: For Condition, the reference category is the Control condition.

To test our hypothesis that the percentage of participants choosing BNPL would vary across conditions, we conducted a linear regression, predicting payment decision (0 = Card, 1 = BNPL)

from experimental condition. In accordance with our analysis plan, each experimental condition was compared against the Control condition using a one-sided test with a Bonferroni-corrected alpha level of .017.

Overall, adding Condition to the regression model significantly improved the fit of the model to the data, $F(3, 1973) = 6.24, p < .001$. Participants in the Combined+ condition were significantly less likely to choose the BNPL option than participants in the Control condition, $t = -3.42, p < .001$. The effect size was around 9.2 percentage points (ATE = -0.091, 90% CI [-.135, -.046]).

Table 4. Regression model - predicting Comprehension (% correct) from experimental condition and payment decision

	Coefficient	Standard error	90% Confidence Interval		<i>t</i>	<i>p</i>
			Lower	Upper		
Intercept	42.30	0.97	40.71	43.89	43.79	< .001
Payment decision: BNPL	-3.04	1.10	-4.84	-1.24	-2.77	.006
Condition: Disclosures	6.40	1.31	4.25	8.55	4.90	< .001
Condition: Pop up	3.44	1.31	1.29	5.59	2.63	.005
Condition: Combined+	7.00	1.31	4.84	9.15	5.34	<.001

Note: For Payment decision, the reference category is credit/debit card. For Condition, the reference category is the Control condition

To test our hypothesis that comprehension would be improved in the experimental conditions, we conducted a linear regression, predicting total comprehension scores from Condition and Payment decision. In accordance with our analysis plan, each experimental condition was compared against the Control condition using one-sided tests, with Bonferroni-corrected alpha levels of .017.

Overall, adding Condition to the regression model improved the fit to the data, $F(3,1973) = 12.51, p < .001$. Comprehension scores were significantly higher in the Disclosures condition than in the Control condition, with an average increase of around 6.40 percentage points (90% CI [4.25,

8.55]). Comprehension scores were also significantly higher in the Pop up condition than in the Control condition, with an average increase of 3.44 percentage points (90% CI [1.29, 5.59]). Finally, comprehension scores were significantly higher in the Combined+ condition than in the Control condition, with an average increase of 7.00 percentage points (90% CI [4.84, 9.15]).

Table 5. Main effect of condition for each comprehension question

Item	Test
What is the interest rate that QuickPay / EezyPay applies to purchases?	$F(3, 1970) = 2.49, p = .059$
Does QuickPay / EezyPay charge late fees for missed payments?	$F(3, 1970) = 29.78, p < .001^{***}$
When is the second instalment due for this purchase?	$F(3, 1970) = 0.76, p = .52$
Is QuickPay / EezyPay a credit product?	$F(3, 1970) = 10.70, p < .001^{***}$
QuickPay / EezyPay charges late fees for missed payments. How much are those late fees?	$F(3, 1970) = 0.48, p = .69$
Does QuickPay / EezyPay charge early repayment fees if you choose to pay for a purchase before your repayment is due?	$F(3, 1970) = 1.05, p = .37$
Would QuickPay / EezyPay be able to take legal action against you in the event you were unable to pay for your purchase?	$F(3, 1970) = 2.52, p = .057$
By using QuickPay / EezyPay for this purchase, would the company hold your personal information on record?	$F(3, 1970) = 1.67, p = .17$
By using QuickPay / EezyPay for this purchase, did the company require you to create an account with them?	$F(3, 1970) = 2.73, p = .043$

To explore where our interventions had the largest effects on comprehension, we conducted a series of linear regressions, predicting accuracy on each question from Condition. We applied Bonferroni-corrected alpha levels of .006 (.05/9) to these analyses. These exploratory analyses indicated that accuracy differed across conditions on two of the comprehension items: the existence of late fees, $F(3, 1973) = 29.78, p < .001$, and the understanding that BNPL is a credit product, $F(3, 1973) = 10.70, p < .001$. For both of those items, accuracy was significantly higher in all three treatment groups than in the Control condition (see Tables 6 and 7).

Table 6. Regression model - predicting accuracy (proportion correct) on Comprehension Question 2 - existence of late fees

	Coefficient	Standard error	90% Confidence Interval		<i>t</i>	<i>p</i>
			Lower	Upper		
Intercept	.224	.021	.189	.259	10.47	< .001
Condition: Disclosures	.229	.030	.179	.279	7.55	< .001
Condition: Pop up	.156	.030	.106	.205	5.13	<.001
Condition: Combined+	.264	.030	.214	.313	8.69	<.001

Note: For Condition, the reference category is the Control condition

Table 7. Regression model - predicting accuracy (proportion correct) on Comprehension Question 4 - BNPL as a credit product

	Coefficient	Standard error	90% Confidence Interval		<i>t</i>	<i>p</i>
			Lower	Upper		
Intercept	.677	.019	.645	.709	35.08	< .001
Condition: Disclosures	.075	.027	.030	.120	2.75	.006
Condition: Pop up	.069	.027	.024	.114	2.52	.012
Condition: Combined+	.155	.027	.110	.200	5.66	<.001

Note: For Condition, the reference category is the Control condition

Table 8. Recall of item cost across conditions

	Control	Disclosures	Pop up	Combined+
Accurate	80.33%	83.95%	81.06%	81.19%
Underestimate	16.19%	12.35%	14.87%	14.72%
Overestimate	3.49%	3.70%	4.07%	4.09%

20 participants did not enter a sensible cost estimate, and so were removed from this analysis. Of the remaining participants, 81.63% of participants correctly recalled the total cost of the item, 3.84% overestimated the cost, and 14.5% underestimated the cost. To determine whether Condition was associated with cost recall, we conducted a 4 (Condition) x 3 (Recall: Accurate, Underestimate, Overestimate) chi-square test of association. The test was not statistically significant, $\chi^2(6, N = 1954) = 3.36, p = .76$, Cramer's $V = .03$.

Table 9. Mean (and standard deviation) for perceived affordability of the product, broken down by Condition and Payment Decision

Payment choice	Control	Disclosures	Pop up	Combined+
Credit/Debit card	2.70 (0.86)	2.63 (0.79)	2.63 (0.83)	2.65 (0.82)
BNPL	2.52 (0.90)	2.62 (0.85)	2.51 (0.73)	2.24 (0.82)

To explore whether perceived affordability was affected by experimental condition, and whether participants who initially chose BNPL differed in perceived affordability from those who initially chose card, we conducted a 2 (Checkout 1 decision) x 4 (Condition) ANOVA on Affordability. The analysis revealed a significant main effect of Payment decision, $F(1, 1966) = 15.34, p < .001, \eta^2 = .008$. Participants who initially chose to pay using BNPL perceived the item to be less affordable ($M = 2.47, 95\% \text{ CI } [2.40, 2.55]$) than participants who initially chose to pay using credit/debit card ($M = 2.65, 95\% \text{ CI } [2.61, 2.69]$).

The main effect of Condition was also statistically significant, $F(3, 1966) = 3.14, p = .024, \eta^2 = .008$. Post-hoc Tukey tests indicated that perceived affordability was significantly lower in the Combined+ condition ($M = 2.44, 95\% \text{ CI } [2.34, 2.54]$) than in the Control condition, ($M = 2.62, 95\% \text{ CI } [2.53, 2.70]$), $t = 2.71, p = .034$, or in the Disclosures condition ($M = 2.57, 95\% \text{ CI } [2.48, 2.66]$), $t = 2.75, p = .031$.

The interaction term was also statistically significant, $F(3, 1966) = 3.46, p = .016, \eta^2 = .005$. To interpret this interaction term, we conducted a series of independent t-tests, comparing participants who chose BNPL with those who chose card within each experimental condition. We applied a two-sided, Bonferroni-corrected alpha level of .0125 to these comparisons. The only statistically significant comparison was in the Combined+ condition, wherein participants who chose BNPL perceived the item as less affordable than participants who chose to pay by card, $t(487) = 4.17, p < .001, d = .51, 95\% \text{ CI } [0.27, 0.75]$.

Table 10. Mean (and standard deviation) for User experience ratings, broken down by Condition

Control	Disclosures	Pop up	Combined+
4.20 (0.75)	4.25 (0.83)	4.19 (0.78)	4.38 (0.78)

Overall, participants' user experience of the BNPL checkout was positive, with a grand mean score of 4.20 ($SD = 0.79$) from a possible maximum of 5. To explore whether any of our interventions affected user experience, we conducted a one-way ANOVA with the UX index as the dependent variable and Condition as the independent variable. The main effect of condition was not statistically significant, $F(3, 1970) = 2.32, p = .074, \eta^2 = .004$.

Table 11. Mean (and standard deviation) for likelihood of future use, broken down by Condition and Payment Decision

Payment choice	Control	Disclosures	Pop up	Combined+
Credit/Debit card	2.54 (1.38)	2.44 (1.34)	2.46 (1.40)	2.37 (1.36)
BNPL	3.49 (1.26)	3.41 (1.36)	3.73 (1.17)	2.37 (1.36)

We explored whether our interventions affected participants' self-rated likelihood of using our BNPL providers for future purchases, and whether any effects were moderated by participants' initial payment decisions. To address these questions, we conducted a 2 (Checkout 1 decision) x 4 (Condition) ANOVA on Likelihood of Future Use. Unsurprisingly, participants who chose to pay using BNPL rated their likelihood of future use as higher ($M = 3.64, 95\% \text{ CI } [3.52, 3.77]$) than participants who initially chose to pay using credit/debit card ($M = 2.45, 95\% \text{ CI } [2.38, 2.52]$), $F(1, 1966) = 272.61, p < .001, \eta^2 = .121$.

The main effect of Condition was not statistically significant, $F(3, 1966) = 1.87, p = .13, \eta^2 = .002$. In other words, we did not observe any evidence that our interventions increased or decreased participants' willingness to use our BNPL providers for future purchases.

However, the interaction term was statistically significant, $F(3, 1966) = 3.77, p = .01, \eta^2 = .005$ (see Figure 5). To interpret this interaction, we conducted separate one-way ANOVAs for participants who did and did not choose to use BNPL. For participants who paid using BNPL, likelihood of future use varied across conditions, $F(3, 447) = 3.47, p = .016, \eta^2 = .023$. Post-hoc Tukey tests revealed that participants in the Combined+ condition rated their likelihood of future use as higher than participants in the Disclosures condition, $t = -2.93, p = .019$. For participants who paid by credit/debit card, there was no statistically significant effect of condition, $F(3, 1966) = 0.99, p = .40, \eta^2 = .002$.

Table 12. Mean (and standard deviation) for likelihood of recommending to others, broken down by Condition and Payment Decision

Payment choice	Control	Disclosures	Pop up	Combined+
Credit/Debit card	2.81 (1.30)	2.67 (1.22)	2.68 (1.31)	2.75 (1.30)
BNPL	3.39 (1.19)	3.35 (1.26)	3.64 (0.99)	3.99 (1.05)

To determine whether our interventions affected participants' self-reported likelihood of recommending our BNPL provider to a friend or family member, we conducted a 2 (Checkout 1 decision) x 4 (Condition) ANOVA on Likelihood of recommending. Participants who chose to pay using BNPL rated their likelihood of recommending our BNPL providers to friends and family more highly ($M = 3.59, 95\% \text{ CI } [3.48, 3.71]$) than participants who initially chose to pay using credit/debit card ($M = 2.73, 95\% \text{ CI } [2.67, 2.79]$), $F(1, 1966) = 163.86, p < .001, \eta^2 = .076$.

In addition, the self-rated likelihoods of recommending to a friend or family member differed between conditions, $F(3, 1966) = 4.64, p = .003, \eta^2 = .006$. Post-hoc Tukey tests revealed that the likelihood of recommending to a friend or family member was higher in the Branding condition ($M = 3.37, 95\% \text{ CI } [3.22, 3.52]$) than in the Control condition ($M = 3.10, 95\% \text{ CI } [2.97, 3.23]$), $t = 2.702, p = .035$, or in the Disclosures condition ($M = 3.01, 95\% \text{ CI } [2.89, 3.13]$), $t = 3.65, p = .002$.

In addition, the interaction term was statistically significant, $F(3, 1966) = 4.64, p = .003, \eta^2 = .006$. A one-way ANOVA revealed that, for participants who paid using BNPL, likelihood of

recommending to a friend/family member differed across conditions, $F(3, 1966) = 6.62, p < .001, \eta^2 = .041$. Participants in the Branding condition ($M = 3.99, 95\% \text{ CI } [3.74, 3.85]$) rated their likelihood of recommending the BNPL provider to a friend or family member more highly than participants in the Control condition ($M = 3.39, 95\% \text{ CI } [3.19, 3.59]$), $t = 3.73, p = .001$, or participants in the Disclosures condition ($M = 3.35, 95\% \text{ CI } [3.43, 3.85]$), $t = 4.03, p < .001$. In contrast, for participants who initially chose credit/debit card, Condition did not significantly affect the likelihood of recommending to a friend/family member, $F(3, 1507) = 0.94, p = .42, \eta^2 = .002$.

Table 13. Mean (and standard deviation) for trust in our BNPL lenders, broken down by Condition and Payment Decision

Payment choice	Control	Disclosures	Pop up	Combined+
Credit/Debit card	3.15 (0.81)	3.18 (0.83)	3.13 (0.78)	3.17 (0.78)
BNPL	3.40 (0.72)	3.41 (0.82)	3.53 (0.61)	3.69 (0.70)

We conducted a 2 (Checkout 1 decision) x 4 (Condition) ANOVA on Trust in our BNPL lenders. There was a statistically significant main effect of Checkout 1 decision, $F(1, 1966) = 70.87, p < .001, \eta^2 = .035$. Participants who chose to pay using BNPL were more trusting of our BNPL providers ($M = 3.51, 95\% \text{ CI } [3.44, 3.58]$) than participants who chose to pay using credit/debit card ($M = 3.16, 95\% \text{ CI } [3.12, 3.20]$).

Trust in the BNPL providers did not significantly differ across conditions, $F(3, 1966) = 2.36, p = .07, \eta^2 = .003$, and the interaction between Condition and Checkout 1 decision was also not statistically significant, $F(3, 1966) = 2.46, p = .06, \eta^2 = .004$.

Table 14. Regression model predicting Payment Decision (0 = Credit/debit card; 1 = BNPL) from demographic factors (Disability, Ethnicity, Gender, and Age), Financial Circumstances and habits (Financial Distress, Household Income, SES index, Past BNPL usage), Cognitive traits (Present Bias, Delayed Gratification, Financial Literacy), and Condition

	Coefficient	Standard error	95% Confidence Interval		t	p
			Lower	Upper		
Intercept	.214	.099	.019	.400	2.16	.031
Disability	.016	.025	-.033	.065	0.62	.53
Ethnicity - Asian	.004	.048	-.091	.099	0.09	.93
Ethnicity - Black	.188	.145	-.096	.472	1.30	.19
Ethnicity - Mixed	-.016	.051	-.116	.083	-0.33	.75
Ethnicity - Other	-.028	.119	-.261	.204	-0.24	.81
Gender - Non-binary	.052	.138	-.219	.324	0.38	.71
Gender - Woman	-.018	.022	-.062	.026	-0.80	.43
Age - 25-34	-.066	.048	-.161	.029	-1.36	.17
Age - 35-44	-.016	.047	-.108	.076	-0.34	.73
Age - 45-54	.028	.047	-.065	.121	0.58	.56
Age - 55-64	.021	.049	-.075	.117	0.43	.67
Age - 65-74	.019	.051	-.081	.119	0.38	.71
Age - 75-84	-.001	.076	-.150	.149	-0.01	.99
Age - 85+	.425	.239	-.044	.894	1.78	.076
Financial Distress	.020	.014	-.007	.048	1.47	.14
Income: £10-20k	.022	.042	-.061	.105	0.51	.61
Income: £20-30k	.029	.042	-.054	.111	0.68	.50
Income: £30-40k	.061	.045	-.027	.149	1.3	.17

Income: £40-50k	-.013	.047	-.105	.078	-0.28	.78
Income: £50-60k	-.009	.054	-.115	.097	-0.16	.87
Income: £60-75k	-.010	.054	-.116	.096	-0.19	.85
Income: £75-100k	.042	.058	-.071	.155	0.74	.46
Income: >£100k	.020	.068	-.113	.153	0.30	.77
SES Index	-.003	.017	-.035	.030	-0.16	.87
BNPL Usage: Infrequent	.196	.024	.149	.243	8.21	<.001
BNPL Usage: Frequent	.311	.041	.231	.390	7.63	<.001
Present bias	-.003	.010	-.024	.017	-.024	.75
Delayed Gratification	-.017	.019	-.055	.020	-0.89	.37
Financial literacy	-.013	.012	-.037	.011	-1.10	.27
Condition - Disclosures	.009	.029	-.047	.066	0.33	.74
Condition - Pop up	-.024	.029	-.081	.032	-0.85	.39
Condition - Combined+	-.082	.029	-.138	-.025	-2.85	.004

Note: For Disability, the reference category is no disability; for Ethnicity, the reference category is White; for Age, the reference category is 18-24 years; For Income, the reference category is <£10k; For BNPL usage, the reference category is Non-user; for Condition, the reference category is Control.

Table 15. Regression model predicting Comprehension (% correct) from demographic factors (Disability, Ethnicity, Gender, and Age), Financial Circumstances and habits (Financial Distress, Household Income, SES index, Past BNPL usage), Cognitive traits (Present Bias, Delayed Gratification, Financial Literacy), and Condition

	Coefficient	Standard error	95% Confidence Interval		<i>t</i>	<i>p</i>
			Lower	Upper		
Intercept	19.89	4.74	10.59	29.20	4.20	<.001
Disability	-0.26	1.20	-2.60	2.09	-0.21	.83
Ethnicity - Asian	1.26	2.31	-3.27	5.79	0.55	.59
Ethnicity - Black	7.03	6.92	-6.54	20.59	1.02	.31
Ethnicity - Mixed	-2.17	2.42	-6.92	2.58	-0.90	.37
Ethnicity - Other	-4.00	5.67	-15.12	7.12	-0.71	.48
Gender - Non-binary	1.06	6.61	-11.90	14.03	0.16	.87
Gender - Woman	0.54	1.07	-1.56	2.64	0.51	.61
Age - 25-34	5.10	2.31	0.56	9.63	2.21	.028
Age - 35-44	5.89	2.25	1.48	10.30	2.62	.009
Age - 45-54	7.35	2.27	2.91	11.80	3.24	.001
Age - 55-64	7.96	2.33	3.39	12.54	3.41	<.001
Age - 65-74	8.33	2.44	3.54	13.12	3.41	<.001
Age - 75-84	7.09	3.65	-0.07	14.25	1.94	.05
Age - 85+	19.26	11.44	-3.18	41.70	1.68	.09
Financial Distress	1.47	0.66	0.18	2.77	2.23	.026
Income: £10-20k	3.77	2.02	-0.19	7.74	1.87	.062
Income: £20-30k	3.88	2.02	-0.08	7.85	1.92	.055
Income: £30-40k	3.52	2.14	-0.68	7.71	1.65	.10

Income: £40-50k	5.10	2.23	0.73	9.46	2.29	.022
Income: £50-60k	4.60	2.59	-0.48	9.67	1.78	.076
Income: £60-75k	5.55	2.59	0.48	10.62	2.15	.032
Income: £75-100k	4.63	2.76	-0.77	10.04	1.68	.093
Income: >£100k	4.30	3.25	-2.08	10.67	1.32	.19
SES Index	-0.09	0.80	-1.65	1.48	-0.11	.91
BNPL Usage: Infrequent	3.90	1.14	1.66	6.14	3.41	<.001
BNPL Usage: Frequent	6.86	1.95	3.05	10.68	3.53	<.001
Present bias	0.19	0.50	-0.79	1.16	0.37	.71
Delayed Gratification	0.71	0.92	-1.09	2.50	0.78	.44
Financial literacy	3.97	0.58	2.82	5.11	6.80	<.001
Condition - Disclosures	4.28	1.37	1.60	6.96	3.13	.002
Condition - Pop up	2.72	1.37	0.04	5.41	1.99	.047
Condition - Combined+	6.34	1.38	3.66	9.06	4.62	<.001

Note: For Disability, the reference category is no disability; for Ethnicity, the reference category is White; for Age, the reference category is 18-24 years; For Income, the reference category is <£10k; For BNPL usage, the reference category is Non-user; for Condition, the reference category is Control.



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