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Positive Friction: Better Borrower Understanding, Better Portfolio Outcomes

An experiment with digital borrowers in Kenya

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Executive Summary

In designing digital consumer journeys, friction experienced by the user is often considered a negative attribute — causing unwanted delays, difficulties, or complexity. However, frictionless experiences, such as those often embedded in digital credit, can result in consumers accepting terms and conditions without considering them thoroughly or applying for products that may be unsuitable for their individual and life needs. The Center for Financial Inclusion (CFI) posited that friction can have a positive impact and add value when it is intentionally introduced in a consumer's journey. This paper details the results of an experiment testing this hypothesis, in partnership with Pezesha[1], a digital MSE lender in Kenya.

Digital credit refers to loans which are accessed and delivered to consumers through digital interfaces — primarily mobile phones. Digital credit has been characterized as having three attributes: 1) it is instant (with lending decisions often made in minutes or seconds); 2) it is automated (with loan decisions made by algorithms and not loan officers); and 3) it is remote (with the application, origination, and repayment processes all done through the borrower's phone) (Chen & Mazer, 2016).

The instant and automated nature of digital credit, while reducing friction in the consumer journey, have raised consumer protection concerns in areas such as over indebtedness (Cassara & Zapanta, 2024) and biases in lending decisions (Kelly & Mirpourian, 2024). Debt stress risks have been documented in surveys of digital credit consumers in several leading DFS markets,[2] raising concerns that for many borrowers, digital credit may not be welfare-enhancing.

CFI partnered with Pezesha to test the real-world impact of introducing positive friction in the digital credit journey. Together, we developed a brief quiz, comprising three questions that were introduced during the loan application journey, causing consumers to pause and consider the terms of their loan, their obligations, and the potential consequences of delayed repayment. These questions were tested with a treatment and control group, and analysis was focused on first-time borrowers of MSE loans from Pezesha. In order to explore whether Pezesha could extend their offerings to a new segment of customers without taking undue risks, they lowered their loan criteria as part of this experiment to include customers with a lower credit score and lower monthly income, as well as reducing the business documentation requirements.

While the overall sample in this experiment was not sufficient to establish statistical significance, results showed positive indications of the impact positive friction can have on both consumers and providers. First-time borrowers in the treatment group showed consistently better repayment performance than those in the control group, and this persisted across demographics. We found that the impact was larger on average among women, with women in the treatment group showing a default rate that is 20 percent lower than those in the control groups, while men in the treatment group only demonstrated a default rate that is 5 percent lower than those in the control group. Although performance on the quiz did not determine loan sanction, Pezesha reported a 12 percent higher repayment rate among customers who answered all three questions on the quiz correctly.

1 Pezesha provides loans for micro and small enterprises both independently and through embedded finance partnerships with 15 partners in sectors such as banking, healthcare, e-commerce, and telecommunications. Applicants are credit-scored in a real-time basis, and receive their loans within hours. To date, Pezesha has registered more than 200,000 SMEs and made more than 400,000 loans.

2 See, for example: Innovation for Poverty Action's surveys of consumers in four leading DFS markets, which includes data on late payment and multiple borrowing in digital credit https://poverty-action.org/consumer-protection-digital-finance-surveys; FSD Kenya's findings on the linkages between digital credit and reduced financial health for respondents to the FinAccess household finance survey https://www.fsdkenya.org/wp-content/uploads/2022/10/FSDK-Financial-health-report.pdf

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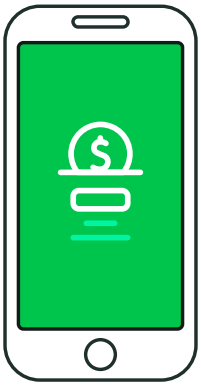
1 Introduction

The global digital credit market has transformed in the past decade and continues to evolve, shaped by new technologies, partnerships, and innovative business models (Izaguirre et al., 2025). Driven by mobile phone ownership and financial services delivered through mobile phones, access to digital credit has been growing rapidly (Klapper et al., 2025). Digital credit loans are typically short-term, unsecured loans that are delivered within a few seconds. While the interest rates charged can be high, there is evidence that such loans can help with consumption smoothing and increase consumption modestly without eroding savings or assets (Cassara et al., 2025). For some consumers, however, behavioral factors can increase their vulnerabilities and cause harm (see Table 1 for behavioral vulnerabilities associated with digital credit) (Izaguirre et al.). Whatever the reasons for the vulnerability might be, a responsible approach is to ensure that providers take steps to reduce the risks caused by these vulnerabilities so consumers trust that providers are acting in their best interests (Coppack et al., 2015).

At the Center for Financial Inclusion (CFI), we call this provider-led approach, "consumer protection by design"; i.e., an approach where providers build in consumer protection measures in the design and delivery of financial services (Venkatesan et al., 2024). Inherent to the success of this approach is a combination of consumer and business value. Positive friction, where friction is intentionally introduced at strategic points in the consumer journey to allow consumers to make more considered decisions, is an example of consumer protection by design. The relationship between speed of delivering digital credit and loan performance has been tested by Burlando et al., who found that slowing down loan disbursement in Mexico positively impacted repayment rates (Burlando et al., 2023).



However, the role of positive friction is not just to reduce the speed of delivery. We hypothesized that positive friction can deliver business and consumer value when it is designed so it addresses behavioral biases and reduces consumer risks. In partnership with Pezesha, a digital lender in Kenya that caters to micro and small enterprises, we tested our hypothesis. We tested this by developing a three-screen quiz on loan terms and features, which some borrowers were given during the loan application process with Pezesha. While the sample is too small to draw statistically significant conclusions,[3] the results of the experiment

3 In planning this experiment, we made an assumption of a 20 percent relative reduction in default rate based on a review of other related interventions (although none were directly comparable to this approach). Based on this assumption, we determined that a target sample size of 857 participants in each group (treatment and control) was needed for conclusions to be statistically significant. The challenges in achieving this sample are noted in the Study Limitations section. Given the lower observed relative reduction in default rate discussed in the Repayment Performance results section, the sample achieved provides directional indications of impact, although it is not statistically significant. A detailed explanation of original sample calculations and assumptions can be found in the Annex.

showed that on-time repayment is 10 percent higher among those first-time borrowers who encountered the intervention compared with those who did not, along with other positive results. The experiment, which was implemented from February 2024 to December 2024, demonstrates how providers can integrate positive friction into their digital credit product delivery to support improved consumer understanding while supporting their business objectives.

The potential benefits of this intervention are particularly relevant in the context of the Kenya market, as perhaps no country has seen digital credit scale faster and wider. Since the launch of M-Shwari in 2012, digital credit has expanded to include tens of millions of loans made annually (Mazer & Garz, 2024). However, throughout Kenya's digital credit market expansion, consumer protection and financial health concerns have arisen (Mazer & Garz). Kenya's FinAccess 2024 national survey found that only 18 percent of the adult population in Kenya was "financially healthy," and that 17 percent had defaulted on a loan, while 37 percent had been late repaying a loan (FinAccess, 2024). Similarly, a survey of Kenyan MSEs in June 2023 found 52.9 percent of MSEs had used savings to repay their loans, 30.5 percent had reduced household expenditure to repay loans, and 34.7 percent had taken other loans to repay existing loans (FinAccess, 2023). It is in this context of concerns regarding overborrowing and debt stress that this intervention was designed and implemented to support more intentional borrowing and increased understanding of loan terms and obligations upfront.

This report presents the results of this experiment with positive friction in Pezesha's customer journey. Section 1 describes the experimental design process undertaken by CFI and Pezesha. Section 2 details the implementation of the experiment, including the assignment of treatment and control groups, data used to select and monitor participants, and the survey implemented to understand borrowers' experiences with the three-screen quiz. Section 3 discusses the results of the experiment, including quiz responses, repayment behavior, and insights from the borrower surveys. Section 4 follows with a discussion of the implications of this experiment and positive friction for financial service providers. Finally, Section 5 concludes with a call to action and look toward how this concept can be further explored.

Photo credit: iStock.com/Elen Marlen

TABLE 1: BEHAVIORAL VULNERABILITIES ASSOCIATED WITH DIGITAL CREDIT

Type of Bias	Consumer Behavior	How Does Digital Credit Enable It?
Hyperbolic discounting and present bias	Consumers overvalue short-term gains and undervalue long-term costs, resulting in impulsive borrowing.	Ease and speed of digital credit makes it easier to take on debt without deliberating needs and capacities.
Anchoring and message framing	Consumers can borrow amounts beyond their actual needs.	Loan terms are presented in a way that emphasizes benefits and downplays costs — for instance, high maximum loan amounts, pre-selection of maximum loan amount on screen.
Loss aversion and availability bias	Consumers often overvalue something readily accessible, with unrestricted access.	Loan terms are presented as an opportunity — for instance, "You qualify for..." or as an urgent, fleeting opportunity: "Act now not to miss out."
Salience bias	Consumers may miss loan repayments, neglect or misunderstand loan terms, or place digital loans on a lower repayment priority.	The lack of human interaction makes digital credit feel less real. The lack of understanding of loan terms can be worse in the case of embedded digital credit, where the loan is within the purchase of a good or service.
Default settings and status quo	Consumers may reborrow out of habit and not necessity.	Conditions offered are accepted as a default, which can create dependency or increase exposure to unfavorable terms by automating repeat borrowing instead of shopping around.
Overconfidence and mental accounting	Consumers are overconfident in their repayment ability, ignoring their cumulative debt burden.	The short-term nature and small size of digital loans can result in multiple borrowing while stressing consumers' ability to repay them.

Adapted from CGAP: Responsible Digital Credit: Frontier Solutions for Authorities and Providers

Photo credit: iStock.com/miroslav_1

In 2024, we published a brief, "Positive Friction for Responsible Digital Lending," that outlined the case for positive friction in inclusive finance more broadly (Venkatesan et al., 2024). Drawing from sectors beyond financial services, and based on secondary literature, we presented a typology of positive friction interventions and hypothesized that positive friction can be a powerful mechanism to increase consumer protection and achieve financial well-being.

We also noted that the business value derived from such interventions has been thinly researched, which is a primary motivation of this experiment with Pezesha.

In our initial brief, we explored several possible ways positive friction could be applied to improve consumer protection broadly, with some application to digital lending, summarized in Table 2.

TABLE 2: CONSUMER PROTECTION APPLICATIONS OF POSITIVE FRICTION
(Source: Venkatesan et al., 2024)

1	Steering consumer decisions towards more suitable products, amounts, and features
2	Delaying the disbursement of consumption loans during certain hours (e.g., late at night)
3	Extra review of terms and conditions or comprehension tests
4	Increasing protections for vulnerable groups, such as self-protecting lock-out features for undesired behaviors (e.g., gambling using loans)
5	Improving product suitability by having consumers provide additional personal, business, or loan needs information during the loan application process
6	Improving data privacy and data security through active management of sharing of data with third parties and periodic reconsent to data sharing

Introducing positive friction in digital credit presents an opportunity to test if interventions like adding new screens or quizzes to increase understanding and intentionality, or prompts to encourage greater reflection, could yield positive impacts on borrowers' decision making and loan repayment behavior. CFI collaborated with Pezesha to identify consumer behavior biases that could result in business losses, and used these insights to design the three-screen loan quiz that formed this experiment. Pezesha was considering the launch of a direct-to-retail lending business, targeting micro and small enterprises (MSEs) that were either first-time borrowers or had a lower credit score. Pezesha sensed the business opportunity in lending to this segment, but wanted to do so responsibly so they didn't cause greater harm to a vulnerable consumer segment or create additional risk in their portfolio. Introducing friction to help increase salience and informed decision making was considered one of several ways to mitigate default risk while expanding access to downstream MSE segments.

The three questions that comprised the quiz were designed to address three types of biases and came through suggestions made by Pezesha's employees in a participatory workshop.

Hyperbolic discounting and present bias: Applicants had to respond to a question that asked how much interest they would pay and what was the total amount repayable, which was meant to reduce impulsive borrowing.

Anchoring and message framing: Embedding the questions in the loan application process made applicants consider if they needed the loan and how much it would cost them, thus emphasizing costs and downplaying benefits.

Salience bias: Applicants were asked when the loan was repayable, which made the credit feel more real at the time of applying for loans.

TABLE 3. POSITIVE FRICTION TYPES AND REAL WORLD APPLICATIONS

In their work on "rational overrides," Van Lieren et al. identify nine intervention strategies based on academic literature that offer a typology of positive friction interventions (van Lieren et al., 2018).[4] This classification provides a theoretical underpinning; we use a subset of these interventions below and overlay a set of positive friction intervention examples from the real world to provide insights on the use of positive friction.

Intervention Strategy	Explanation and Theoretical Basis	Example
Extra Decision Points	Add extra decision points at the right time to force people to slow down and become more aware, allowing them an opportunity to re-evaluate the decision or behavior at hand. It helps to establish boundaries that can minimize the risk of making a mistake or undesired decision (Cox et al., 2016).	E-scooter related injuries in the UK are found to take place over the weekends/late at night when more riders are likely to be intoxicated. Voi, an e-scooter company, introduced an in-app reaction test where players must achieve a certain score to prove their ability to drive. The reaction test is active between 1:00 and 4:00 a.m. on Saturdays and Sundays (Voi, 2020).
Functional Friction	Include small, additional steps in the process to disrupt mindless, automatic interactions. People are asked to put in extra effort to reach their goal (Laschke et al., 2015).	In 1998, the UK redesigned Tylenol packaging, switching from bottles to blister packaging. As a result, Tylenol-related suicides declined by 43 percent (Emanuel, 2013). Blister packaging forced people to individually pop out pills from their casing, which caused enough friction to slow down suicide numbers (Brade, 2017).
Checklists	Simplify how information is presented to make it easy for people to remember and use. Simple checklists for important multistep procedures are effective reminders and useful in preventing errors (Hales & Pronovost, 2006).	The Boeing 777 Electronic Checklist was developed in the early 1990s as a new flight deck automation tool to help guide pilots through normal and emergency procedures before, during, and after flights, decreasing errors by an additional 46 percent compared to paper-based checklists.
Personalized Feedback	Prompt people to reflect on their own behavior and show data that is highly relevant to their own lives (Frysack et al., 2016).	Smartphones will tell you the average time you spend per week on the phone, which can lead people to spend less time on screens (Solon, 2018).
Real-Time Feedback	Show the consequences of people's current actions and encourage them to adjust and improve behavior (Hansen & Jespersen, 2013).	At first, Uber's surge pricing model led to a negative consumer experience and higher number of complaints. Although Uber told consumers that prices were higher due to consumer demand, people often ignored the information and were surprised by a higher fare. To combat this, Uber introduced a moment of friction when app users were forced to type in the correct surge price to confirm that they were aware of and accepted the increase. This led to a drop in consumer complaints (van Lieren et al., 2018).
Alerts	Make people aware, help them to remember important actions, or persuade people to perform a desired behavior. Alerts and reminders work as feedforwards and can be implemented as sounds, visuals and push notifications (Jung & Mellers, 2016).	Outlook will push a pop-up notification reminding people of the failure to include an attachment in an email if the word "attach" is used in the body of the email.

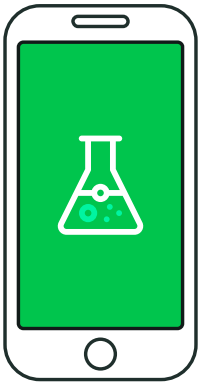
4 Van Lieren et. al define "rational overrides" as the terminology used in research to define micro moments of friction that can be used to disrupt mindless, automatic interactions, prompt moments of reflection, and increase conscious decision making.

2 Experimental Design

2.1 Overview

The testing of positive friction in this experiment was timed to align with the early 2024 rollout of Pezesha 2.0, a relaunch of the Pezesha brand and digital platform which, among other things, expanded Pezesha's direct lending to microentrepreneurs outside of their embedded finance partnerships. Under Pezesha 2.0, businesses can download the Pezesha app and apply for business loans, which take between 30 mins and two hours to disburse once approved (Pezesha, n.d.). Approval follows a five-step process that is outlined in the customer journey graph in Figure 1 below.

A core part of the Pezesha 2.0 strategy includes expanding credit provision to MSEs who are outside of Pezesha's current customer base, such as smaller enterprises who may currently rely on small digital consumer credit loans, have a lower credit score, and were first-time borrowers of MSE loans. These factors make this an inherently riskier group to serve, but Pezesha recognized the potential growth and business value that could be created with this expanded customer base, as well the potential benefits for customers who have traditionally had limited access to MSE credit.This study explored whether positive friction designed to support borrower intentionality and good borrowing behavior could reduce the risk of lending to these segments by increasing saliency of their loan obligations and impacting loan repayment behavior, thus contributing to business value by expanding customer acquisition to a new segment and minimizing business losses due to defaults.



To test this hypothesis, Pezesha reduced their credit scoring threshold for the borrowers included in the experiment from 550 to 450 on a scale of 900 and lowered the minimum loan amount from KES 10,000 (approx. USD $80) to KES 5,000 (approx. USD $40). The loan terms ranged from seven to 90 days and borrowers could choose the tenure and frequency of repayment (between one and three installments) at the time of application. Loan interest rates varied from 1.3 percent to 24 percent, depending on a range of factors such as credit score or previous history of borrowing from Pezesha and other lenders. (See Table 4.)

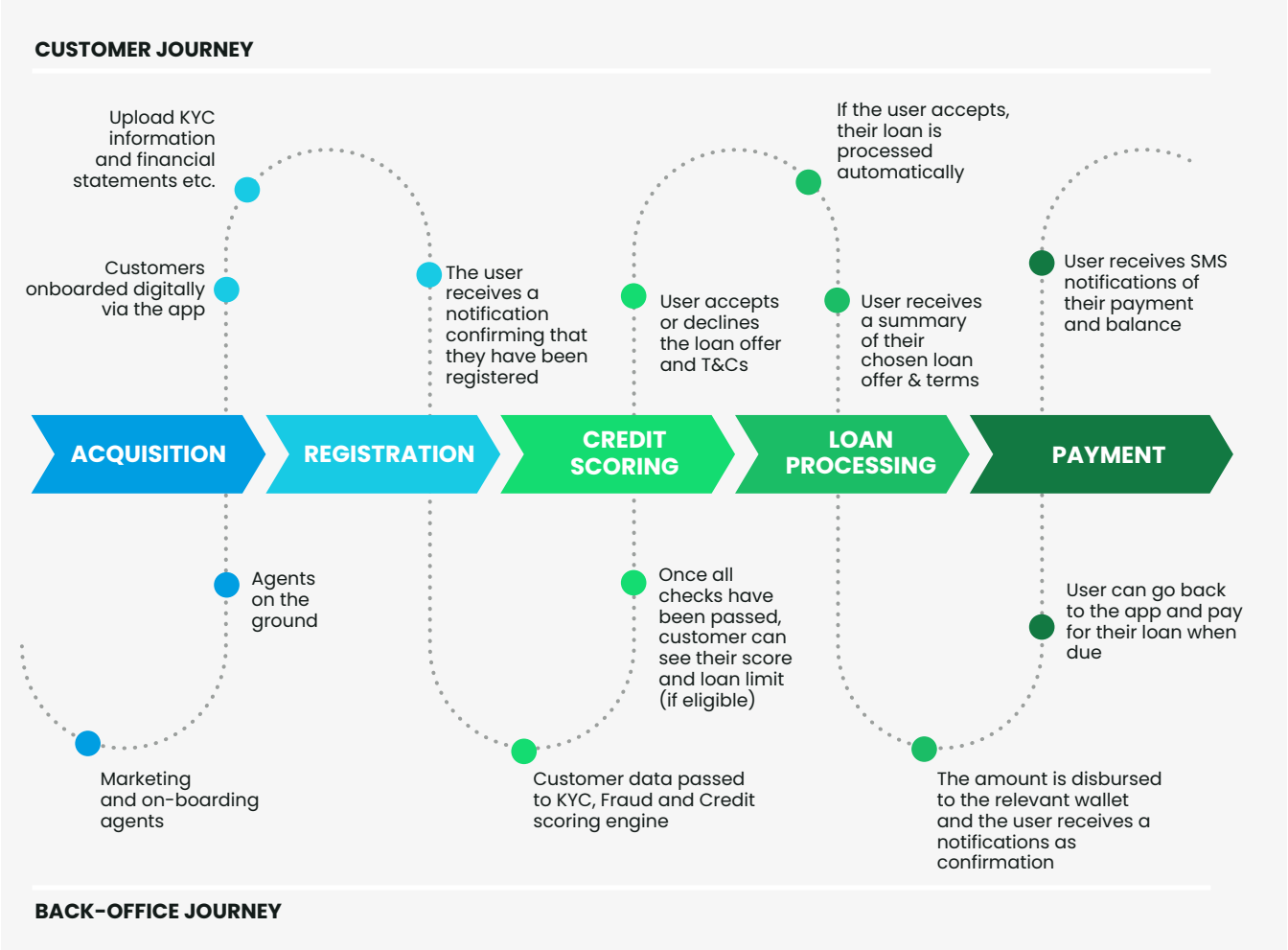
TABLE 4: KEY LOANS INCLUDED IN EXPERIMENT

	Minimun	Maximum	Average
Loan Size	KES 5,000 (approx. USD $40)	KES 200,000 (approx. USD $1,500)	KES 35,600 (approx. USD $275)
Duration	7 days	90 days	35 days
Interest Rate	1.3%	24%	7.1%
Payment Frequency	1	3	1.3

In identifying opportunities for use of positive friction, Pezesha staff considered the five key stages of their customers' loan journey, detailed in Figure 1: 1) Customer acquisition; 2) Customer registration; 3) Credit scoring; 4) Loan processing; and 5) Loan repayment.

Pezesha staff first mapped onto these stages the various negative friction points that could impact customer experience, such as lack of familiarity with the app, issues uploading documents, or poor understanding of terms and conditions. Beginning with negative friction points first helped to identify aspects of the customer experience that could be improved upon, and points where introducing friction strategically would address possible behavioral biases and contribute to better consumer outcomes.

FIGURE 1: PEZESHA 2.0 CUSTOMER AND BACK-OFFICE JOURNEYS



Pezesha staff next identified possible positive friction uses to counter any concerns of business loss as a result of consumer behavior. Through this second round of brainstorming, Pezesha and CFI came up with a range of possible solutions, categorized into three concepts:

1. Knowledge
2. Alerts
3. Commitments

TABLE 5. POSITIVE FRICTION CONCEPTS IDENTIFIED BY PEZESHA STAFF

1. Knowledge
▪ Testing on terms and conditions ▪ Ensure customer reads terms and conditions ▪ Gamification to graduate up in loans ▪ Clear repayment schedule ▪ Loan calculator to understand rates and if they would qualify for a loan
2. Alerts/pop-ups
▪ Provide pictures and examples of what documents to upload and how ▪ Add illustrations to avoid uploading of wrong documents
3. Commitments
▪ Tool to plan repayment ▪ Option to choose daily or weekly installments

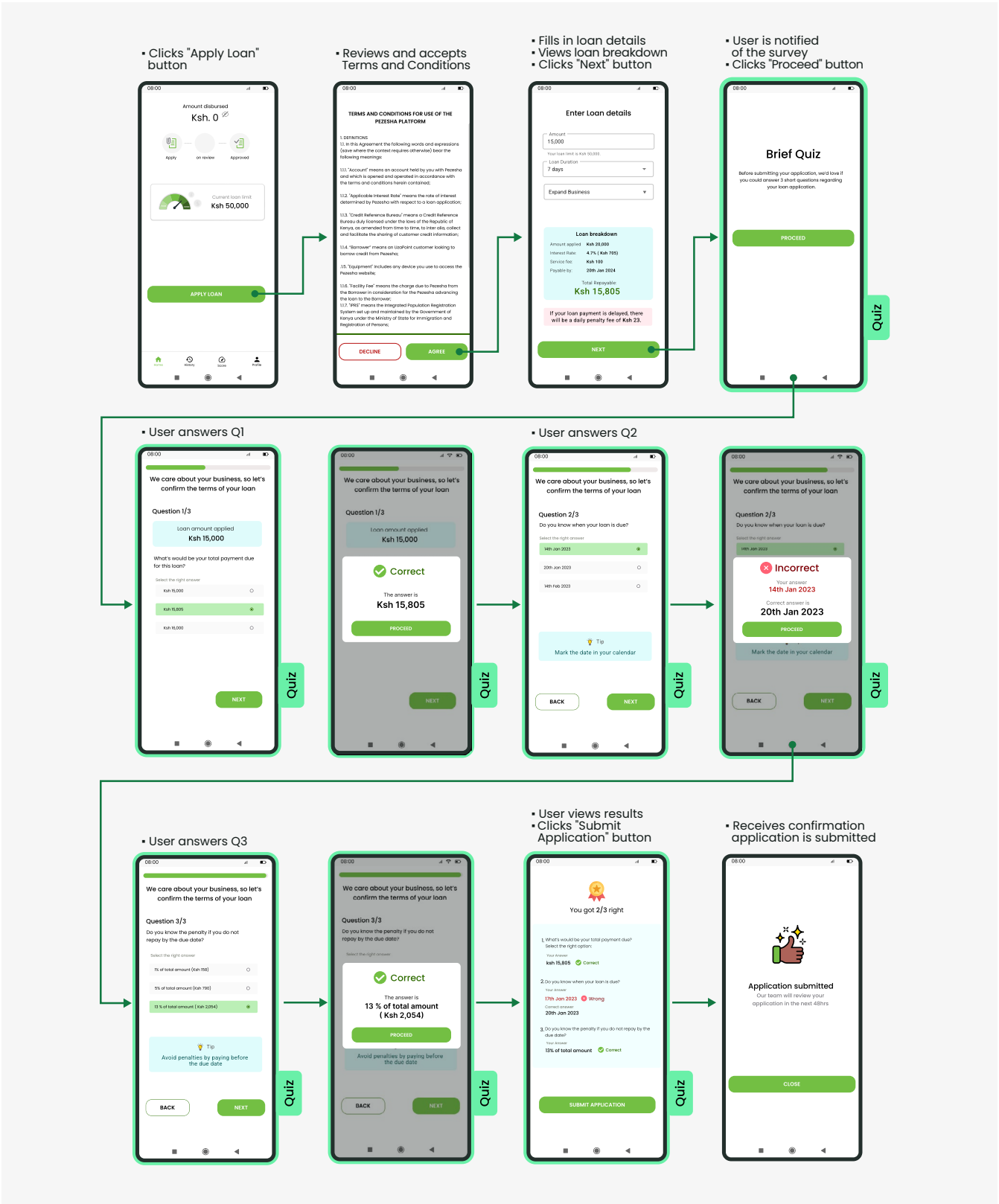
Pezesha staff used this long list of possible positive friction interventions to determine the final intervention for the experiment: testing knowledge of terms and conditions through a simple in-app quiz — hereafter referred to as the "key terms quiz." The content chosen for the key terms quiz was: 1) Total amount to repay for the loan (including principal and interest); 2) Repayment due date; and 3) Penalty amount for late repayment.

The key terms quiz intervention was chosen based on positive evidence from similar past experiments (Venkatesan et al., 2024),[5] the simplicity of design and implementation, and that the intervention occurs early in the loan process, but after the necessary documents have been uploaded. This means that the intervention would impact a high number of eligible Pezesha borrowers at a particularly salient moment in the loan application process for considering their loan terms and obligations.

Figure 2 shows how the quiz was inserted in this user journey. The key terms quiz was designed to be visually simple and limited to three options for answers on each question to avoid choice overload and limit time to complete the quiz. The three options were randomized to prevent applicants from sharing information with each other. Upon completing the quiz, consumers were informed how many questions they got right and what the correct answers were for any questions they answered incorrectly. The key terms quiz sought to improve consumer understanding of loan terms and conditions and hopefully influence their loan decision making and repayment behavior. The findings of this intervention are discussed next.

5 See Case Study 1 in Venkatesan et al. (2024)

FIGURE 2: APPLICATION SEQUENCE WITH KEY TERMS QUIZ



2.2 Implementing the Key Terms Quiz with Pezesha Customers

The key terms quiz experiment was implemented with loans originated from February 19, 2024, through December 6, 2024. Pezesha MSE loan borrowers were randomly assigned to treatment and control groups by alternating borrowers receiving the standard application and the application with the quiz embedded. Since the loans were short-term, there were repeat borrowers in the total sample of 1,449 loans. Within this sample, we find a total of 458 unique borrowers who took at least one loan, and for reasons explained below, our analysis focuses on first-time borrowers. In the early stages of the experiment, Pezesha encountered some unexpected challenges with applying the randomization, which required review and update of the process, and these early issues are largely responsible for the variation in sample size. There was also natural variation in the completion of loan applications and approval, further contributing to variation in numbers.

TABLE 6. DEMOGRAPHICS OF TREATMENT AND CONTROL GROUPS (FIRST-TIME BORROWERS ONLY)

		Treatment (n=253)	Control (n=205)
Gender	Male	61%	62%
	Female	39%	38%
Age	18-29	27%	24%
	30-39	49%	51%
	40-49	21%	18%
	50+	3%	7%
Average Loan Size		KES 29,726	KES 31,104

Since repeat borrowers are likely to display propensity to repay loans and have prior experience with borrowing and familiarity with the loan process, we focus our analysis primarily on the 458 first-time borrowers on the platform,whose characteristics are summarized in Table 6. First-time borrowers in the treatment and control groups had slight variations in their gender, age, and loan size, due to the small sample size and randomized distribution. To monitor the experiment's impact, two primary sources of data were used:

1. **Anonymized administrative data:** This includes data on individual borrowers, including demographic information, loan amounts and due date, repayment behavior, and interaction with the quiz for the treatment group. Table 7 summarizes the data categories captured for each loan in the control and treatment group. This data was used to inform the analysis of borrower behavior in treatment and control groups discussed in the results section of this report.
2. **Phone survey of borrowers:** This survey was conducted early in the experiment to understand customer experiences with the loan and the presentation of loan information. Pezesha staff and the Busara Centre for Behavioral Economics implemented a phone survey of 60 borrowers, comprising 43 borrowers in the treatment group and 17 borrowers in the control group. The survey, conducted five months into the experiment, probed what borrowers remembered from the loan process, including the information asked for and provided during application, and their recall and experiences completing the key terms quiz. Additional questions probed what they did or did not understand and their ease of completing the quiz. The survey data complemented the administrative data analysis, providing insights on what did or did not resonate with borrowers from Pezesha's loan application process. Participants who did not pay their loans on time were also asked what the primary reasons were for their delayed repayment or non-repayment.

TABLE 7. LOAN DATA CAPTURED FOR EACH PEZESHA LOAN

Borrower Information	Loan Details	Loan Performance	Quiz Engagement
1. Loan ID (anonymized) 2. Customer ID (anonymized) 3. Gender 4. Date of birth 5. Repeat or first-time borrower 6. County of residence 7. Credit score	1. Loan amount 2. Origination date/time 3. Funding date/time 4. Interest rate 5. Loan duration 6. App or web-based application	1. Paid or funded 2. Penalty amount charged 3. Days late 4. Portfolio at risk (PAR) status 5. Frequency of repayment 6. Fraud risk indicators	1. Treatment or control 2. Quiz response date/time 3. Answers to quiz questions 4. If answers to quiz questions are correct or incorrect

2.3 Study Limitations

Before discussing the key results from the experiment, we must first acknowledge some limitations to the study scope and design.

1. **Limited sample size:** As noted above, the total sample reached during the experiment (and particularly the sample of first-time borrowers) was insufficient to obtain statistical significance in our analysis. As such, the results and findings presented in this report should be considered indicative results and should be viewed in this context. The sample size was ultimately limited by the gradual rate of customer acquisition for the Pezesha 2.0 product, driven partly by the fact that this was a new product and a new customer segment for the partner, and building awareness and customer acquisition channels takes time.

2. **Technical limitations on data generation:**
   a. Due to technical limitations, we were unable to receive any significant insight on time taken per screen during the customer onboarding journey, including the length of time per quiz question and review of quiz performance. We could also not see if borrowers went back to change their loan size or term once encountering the quiz. This could have provided a useful proxy for level of customer engagement throughout the quiz.

   b. We were unable to receive specific datapoints on customer drop-offs during the onboarding customer journey. However, using insights from Pezesha staff, qualitative research, and comparison of overall applications and disbursements in the different sample groups, we did not find any evidence of higher drop-offs among the treatment group.

   c. We were unable to investigate the impact of time delays on disbursements after application on repayment behavior. We see this as a key area for further research and testing, as noted in the Call to Action.

3 Results of the Key Terms Quiz Experiment

Analysis of borrower behaviors and responses to the quiz provide a range of useful insights on their interaction with, and influence of, the key terms quiz, discussed below. The directional results presented below are focused on first-time borrowers unless otherwise specified.

3.1 Quiz Engagement

Respondents' performance on the quiz showed strong recall of the terms of the loan, with 75 percent answering all three questions correctly, 23 percent answering two questions correctly, and only 1.6 percent and .8 percent answering one or zero questions correctly, respectively. As expected, almost all (96 percent) correctly recalled the loan amount, 94 percent recalled when the loan is due, and 83 percent knew the late repayment penalty amount.

While Pezesha was unable to specifically track drop-offs that resulted from the quiz, there was no indication of a higher drop-off among the treatment group compared with the control, and so there does not appear to be any loss of customers during loan application due to the treatment.

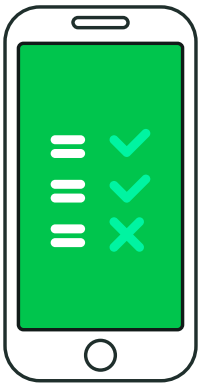


Photo credit: iStock.com/derejeb

3.2 Repayment Performance

While the study was relatively underpowered due to sample size limitations, there are some directional indications of possible positive differences for first-time borrowers' repayment behaviors between the treatment and control groups, summarized in Table 8.[6] When measuring average days past due, we found that first-time borrowers in the treatment group performed marginally better than those in the control group, with averages of 56 and 60, respectively. Interestingly, when we look at returning borrowers, they do not show differences between the treatment and control groups for being late on repayment (39.2 percent vs. 39.1 percent) nor for loans reaching PAR30 (24.2 percent vs. 23.7 percent).

TABLE 8: REPAYMENT PERFORMANCE FOR TREATMENT AND CONTROL GROUPS (FIRST-TIME BORROWERS)

	Treatment	Control
Late on repayment at any point (PAR[7] 1+)	49.8%	54.9%
(PAR 30 +)	39.1%	42.2%
Loan write-off (PAR 90+)	27.3%	28.8%

Further analysis of the first-time borrowers was conducted to identify any noteworthy differences in repayment performance by demographic, summarized in Table 9.

TABLE 9: PAR STATUS OF FIRST-TIME BORROWERS IN TREATMENT AND CONTROL GROUPS BY DEMOGRAPHICS

		Treatment		Control	
		Late Repayment (PAR 1+)	PAR 30+	Late Repayment (PAR 1+)	PAR 30+
Gender	Female	46%	33%	54%	41%
	Male	51%	42%	57%	44%
Age	18-29	51%	41%	50%	38%
	30-39	52%	44%	56%	45%
	40-49	46%	27%	56%	44%
	50+	38%	38%	64%	29%
Credit Score	450-549 (newly included)	47%	40%	61%	48%
	550-649	52%	39%	56%	42%
	650-749	59%	43%	50%	39%
	750+	39%	29%	52%	40%

6 Using chi-square tests and logistic regressions, these findings did not reach statistical significance.

7 CGAP defines PAR as: "The value of all loans outstanding that have one or more installments of principal past due more than a certain number of days." (Source) The PAR ratio is calculated by dividing the total portfolio at risk (X days) by the gross loan portfolio. It is generally an industry standard to track PAR ratio that aligns with loan repayment terms to gain insight on portfolio quality.

The analysis above shows that, with a few exceptions, borrowers in the treatment group consistently perform better than those in the control group across demographics, with a lower rate of any late repayment as well as lower rate of loans entering PAR 30+. Below, we note some key takeaways from the results shown above:

1. Research has shown that women generally demonstrate higher repayment rates than men (Vidal & Caire, 2024), and that discrepancy is evidenced in the findings from this experiment. Interestingly, these results also indicate that the impact of the intervention on repayment rate is greater among women borrowers. Looking only at instances of loans in PAR30, we find a difference of 8 percentage points between women in the treatment and control groups, compared to a difference of 2 percentage points for men. This translates to women in the treatment group showing a rate of PAR30 that is 20 percent lower than those in the control groups, while men in the treatment group only demonstrate a rate of PAR30 that is 5 percent lower than those in the control group. While this points to the potential for improved portfolio quality across clients that can lead to improved business values, it also shows the added value that can be gained through the use of gender-intentional customer recruitment and credit scoring that accounts for these differences.

2. While mixed results were seen among the lowest (18–29) and highest (50+) age groups, there are positive indications of impact among customers ranging from 30 to 49 years of age. This is of particular value to Pezesha, as this range includes 70 percent of customers in the treatment group and 68 percent in the control. Overall, customers between the ages of 30 and 49 years old in the treatment group showed lower PAR30 rates by 14 percent compared to the control group.

3. A key group that showed one of the largest impacts of the intervention is borrowers with a credit score between 450 and 549. This borrower segment is referred to as "newly included" throughout this report, as they had previously been excluded from access to Pezesha's loan products until the provider lowered the credit score threshold as part of this experiment. Among newly included borrowers in the treatment group, they demonstrated a 23 percent lower rate of any late repayment and a 17 percent lower rate of PAR30 compared to the control group. This result has particular significance to the potential business value that can be generated with thoughtful inclusion of a positive friction intervention. While providers would clearly benefit from the improved loan performance demonstrated across groups, this finding shows the potential for providers to reach an entirely new group of clients without the risk of incurring additional risk, and warrants further testing with a larger sample size and other interested digital credit providers.

TABLE 10. PAR STATUS OF FIRST-TIME BORROWERS BY CREDIT SCORE

Credit Score	Treatment		Control	
	Late Repayment (PAR 1+)	PAR 30+	Late Repayment (PAR 1+)	PAR 30+
450-549 (newly included) (n=107)	47%	40%	61%	41%
550+ (n=146)	52%	38%	53%	40%

A primary motivation of this experiment was to identify ways to onboard consumers with lower credit scores in a way that would support informed borrowing and positive repayment behavior. As noted, differences in repayment rate between treatment and control groups were particularly pronounced for the lowest credit score segments. (See Table 10.) While the sample was not large enough to determine statistical significance of this difference, the fact that these lower-score borrowers performed relatively well in repaying their loans signals that there may be a business case for Pezesha for serving this new segment and calls for further testing of positive friction with low credit score borrowers to determine if this trend holds with a large sample size. This is further supported by the fact that of the first-time borrowers, 59 percent of the treatment group and 59 percent of the control group borrowers took out at least one more loan during the experiment period. To better understand repayment rate patterns, we also looked at any impact of the interest rate. As could be expected, the interest rate was correlated with the repayment performance, with lower interest rates less likelier to be associated with any type of late repayment.

TABLE 11: RELATIONSHIP BETWEEN INTEREST RATE AND REPAYMENT PERFORMANCE FOR FIRST-TIME BORROWERS

Interest Rate Range	Late Repayment (PAR 1+)	≥PAR30
1% - 2.9% (n=23)	17.4%	4.35%
3% - 5.9% (n=46)	34.8%	26.1%
6% - 8.9% (n=272)	39.3%	30.1%
10%+ (n=117)	95.7%	77.8%

3.3 Borrower Survey Results

The borrower survey sought to understand experiences with the Pezesha loan application interface and reasons for different observed repayment behaviors among borrowers. A total of 60 interview surveys were completed in June 2024. The sample distribution was skewed to oversample treatment borrowers, to enable deeper insights to be gained on the impression and reaction of borrowers to the intervention, while including some comparative insights from the control group. The survey respondent distribution is shown in Table 12.

TABLE 12. DISTRIBUTION OF SURVEY RESPONDENTS

		Distribution
Treatment or Control	Treatment	43
	Control	17
Gender	Male	41
	Female	19
Age	18-29	22
	30-39	28
	40+	10
First-Time or Repeat	First-Time	19
	Repeat	41
Repayment	On-Time	40
	Late	20

Most borrowers (41 percent) had taken loans ranging from KES 10,000 to KES 20,000, with the median loan amount of KES 25,000. These loans were predominantly used for business reasons, such as business expansion (32 percent), starting a business (17 percent), and restocking (42 percent), and only 9 percent were used for personal reasons.

Survey respondents were asked both whether they remembered any of the information asked of them when they applied for their loan with Pezesha and the steps of the loan process. The most commonly recalled details of information requested were name, next of kin, ID, purpose of funds, M-PESA or bank statements, business details, and amount, duration, and interest rate of loan. These match closely with actual requirements requested by Pezesha of potential borrowers.

Treatment group respondents were asked a range of questions about the key terms quiz to understand their experiences and recall of the quiz. Eighty-eight percent of respondents remembered at least some of the quiz questions, and 27 percent recalled all three questions. First-time borrowers generally found the quiz helpful to clarify loan terms, and appreciated knowing the exact interest amount, noting that Pezesha's transparency was better than other institutions. This increased their confidence in Pezesha and made them feel more informed and secure in their borrowing decisions. By contrast, many repeat customers felt it was not necessary to take the quiz again, viewing it as redundant. This means that the key terms quiz may be an intervention which should only be applied to first-time borrowers, not all loan applications.

Regarding repayment behavior, late-paying borrowers had more negative views on the quiz, and overall respondents did not attribute much impact of the quiz on their repayment behavior (which does not necessarily mean it did not impact repayment behavior). They generally felt that loan confirmation and repayment reminder SMSes Pezesha sends out to all borrowers were the main aid for them remembering their loan terms.

BOX 1: PEZESHA RESPONSE AND POST-EXPERIMENT ACTIONS

Pezesha joined this experiment to both contribute to broader consumer protection research that can drive positive change in the sector, and to explore how they can expand access to a new segment of MSE customers without incurring undue risk to their portfolio quality and to the consumers they serve. Various changes to the loan criteria were made to expand access to this segment. This included lowering the minimum credit score from 550 to 450, reduced business documentation requirements, and lowering the minimum income requirement from KES 30,000 to KES 15,000. These changes led to the addition of clients that were inherently riskier and therefore had a slightly higher expected default compared to Pezesha's existing portfolio.

While the default rates reported above for the entire experimental sample were higher than normally seen across Pezesha's broader loan portfolio, as expected due to the expansion to a new customer segment, the intervention showed promising potential to minimize the risk of including this new segment. The consistently better repayment performance among the treatment group shows how positive friction can serve as a tool to enable customers taking out a loan to improve understanding and make more responsible decisions, while mitigating the impact on portfolio quality from the inclusion of higher risk customers. As a result, Pezesha has taken actions to expand the use of positive friction. The quiz is now a permanent feature in the application flow for first-time borrowers and includes a wider set of questions which may be presented to customers. In particular, Pezesha has added questions on how to interpret credit scores and how borrower's actions can impact their score in a positive or negative manner.

The consistently better repayment performance among the treatment group shows how positive friction can serve as a tool to enable customers taking out a loan to improve understanding and make more responsible decisions, while mitigating the impact on portfolio quality from the inclusion of higher risk customers.

The ongoing use of positive friction is in line with, and has provided key insights to, additional Pezesha initiatives to drive positive consumer outcomes, such as the launch of Elimiza, a financial education platform that is embedded in their app and covers a wide range of financial literacy skills and knowledge. The insights gained throughout this experiment and Pezesha's continued use of positive friction have supported the development of the platform and ongoing refinements to the content.

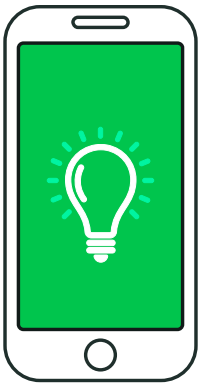
4 Insights and Implications for Providers

The potential business value provided by this intervention has been recognized by Pezesha, and they have already begun to expand the use of positive friction. In their recent Impact Report (Pezesha, 2024), Pezesha shared some of the key results[8] from the experiment that convinced them to explore this expansion:

- +10 percent on-time repayment rate
- -15 percent PAR 90
- +12 percent repayment rate for customers who got 3/3 on the quiz

While the sample size is too small to demonstrate statistical significance of the findings, Pezesha feels that the results provide enough evidence of influence on customer behavior and intent to lead to improved credit quality. While key drivers of business value from the intervention are discussed below, Pezesha has noted a number of other demonstrated or potential benefits provided by the intervention:

1. **Improved credit scoring:** While this is yet to be embedded, Pezesha sees a strong opportunity to embed the behavioral data provided to complement transactional insights. Providers could, for example, offer more flexible loan terms to customers based on better quiz performance. Quiz questions could also be tailored to provide information that individual providers feel is relevant in their context to their internal credit scoring criteria. In Pezesha's case, one approach they have explored is using a positive friction intervention to test customers' knowledge of credit scores in general and how different actions they take may impact their score. This can provide valuable knowledge to customers on steps they can take themselves to improve their score and thus their ability to access affordable working capital.



2. **Insight on customer knowledge gaps:** The intervention itself can enhance financial literacy outcomes by reinforcing customer awareness and understanding of loan terms, while insights from quiz performance can direct Pezesha on where financial education may be needed and help tailor learning content and nudges accordingly. By rotating the quiz questions utilized and identifying key deficiencies in knowledge among their client base, Pezesha can provide targeted or on-demand resources to address these identified knowledge gaps.

8 Results reflect performance of the Pezesha 2.0 portfolio (direct to MSME) since the beginning of the experiment. In Pezesha's analysis, they included both new and repeat borrowers and removed a few outlying high-ticket customers.

3. **Enhance responsible market practices:** The method and intent of adding positive friction to credit applications aligns with responsible lending practices and evolving regulatory expectations. The introduction of positive friction to digital credit products can demonstrate to responsible investors how consumer protection is embedded in the products instead of treated as a simple compliance exercise, which can help secure funding. From a regulatory perspective, this tool enables providers to show proactive actions taken to address overindebtedness and related issues, and potentially avoid unwanted regulatory oversight or intervention in operations.

In addition to these key benefits, we present a few ways in which business value could be measured and assessed when there is a statistically significant sample.

1. **Consideration of time and resources to implement the intervention.**
   The simplicity of the key terms quiz means that the intervention only required the design of several new screens, and so the primary expenses to account for are the days spent by the Pezesha staff developing the screens, adjusting the loan qualification criteria, conducting phone surveys in collaboration with the qualitative research firm in conducting interviews, and monitoring repayment performance. Additional efforts and costs for the project include the time spent by CFI for project management, leading the design workshops, conducting the survey, and monitoring and evaluating the experiment. However, outside of a research experiment, a lender would not need to conduct the borrower surveys and could substantially reduce the staffing time spent to replicate a version of the design from this experiment. Further, as the key terms quiz is rolled out to more borrowers, the marginal cost for implementing the quiz for each borrower positively influenced by the treatment reduces, eventually reaching marginal per-borrower costs. With early evidence of the easily scalable potential of the key terms quiz intervention, Pezesha has expanded its use to their embedded finance portfolio, discussed further below.

2. **Improved portfolio quality and reduced collections cost.**
   This intervention is an opportunity for providers to enhance customer awareness and understanding of loan terms and drive improved on-time repayment. While the sample size prevents us from reporting findings with statistical significance, we find that on-time repayment is 10 percent higher among those first-time borrowers who encountered the intervention compared with those who did not. This difference can lead to greater liquidity of funds and enabling additional repeat borrowers over a shorter timeframe. When customers pay on time, they are also more likely to improve credit scores and enable access to higher loan amounts.

3. **Business value from increased customer acquisition**
   In addition to the business value impact discussed above, another key factor in the implementation of this intervention was the addition of newly included customers, which was enabled by the lowering of loan eligibility criteria. Pezesha wanted to see if the introduction of this intervention, in addition to eligibility changes, would enable them to reach new customers without additional risk.

TABLE 13: LOAN PERFORMANCE FOR LOWER CREDIT SCORE BORROWERS

Proportion of borrowers with credit scores from 450–549	38%
Avg. loan size of lower credit score borrowers	KES 20,797
Avg. interest rate of newly included borrowers	7.1%
Difference in PAR status (late repayment), treatment vs. control	14%
Difference in PAR status (PAR 30+), treatment vs. control	8%

Current sample sizes are too small to draw conclusive insights, but there is a positive business value to Pezesha with the inclusion of these customers, as well as evidence of a higher effect of the intervention among this group.

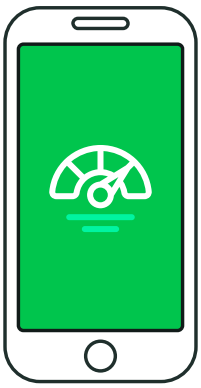
In discussions with fintech investment experts to add context to this work, we sought to explore the key factors and outcomes from this type of intervention that would be attractive to the investment community. The initial recommendations focused on core performance metrics such as growth, default rates, operating costs, and overall efficient management of the loan book. The ability to expand loan book volume and serve a new class of customers was also seen as a strong value proposition. The ability to serve lower-income customers specifically is particularly attractive to socially minded investors, but the potential to expand the possible customer base while partially mitigating additional risk is something all investors value and could contribute to bridging the significant credit gap most MSEs experience in emerging markets.

5 A Call for Further Testing of Positive Friction in Digital Credit

The promising results from this experiment and the numerous other potential variations and applications of positive friction in financial services point to significant opportunities for further research and testing of this concept. For digital credit, it would be valuable to continue exploring the use of positive friction in the application stage to drive greater understanding and encourage thoughtful decisions over impulsive ones. There is also potential for the testing of positive friction applied through time delays in disbursements, as evidenced by the work of Burlando et al (Burlando et al., 2023), discussed in our brief (Venkatesan et al., 2024). The proliferation of other channels for instant credit, primarily in the form of embedded finance and "buy now, pay later" products, provides another avenue to explore how the thoughtful introduction of minimal friction at key decision points could drive positive consumer outcomes.

Beyond digital credit, there is significant potential for testing how the use of positive friction could generate benefits when applied to other financial products. It would be beneficial to explore broader applications of positive friction in payments and savings products to understand how to drive responsible financial decisions.

Key to any application of positive friction is the need to balance the ease, convenience, and speed of digital financial services that customers value with the potential for negative outcomes that can come from customers accessing products that are unsuitable, predatory, or not well understood. Additionally, widespread adoption and implementation of this concept will only be realized if clear evidence is established of both improved consumer outcomes and increased business value for providers.



BOX 2:

In our ongoing efforts to explore how consumer protection can be integrated into the design of financial services and products for the benefit of both customers and providers, CFI will continue to explore this concept and the various potential applications. If you would like to partner with us on this ongoing research, we would love to connect and explore opportunities for collaboration on further testing.

References

- Brade, Z. (2017, January 27). Designing a product with mental health issues in mind. Monzo. https://monzo.com/blog/2017/01/27/designing-product-mental-health-mind
- Burlando, A., Kuhnk, M., & Prina, S. (2023). Too Fast, Too Furious? Digital Credit Delivery Speed and Repayment Rates. IZA Discussion Papers, No. 16451. https://www.econstor.eu/bitstream/10419/282578/1/dp16451.pdf
- Cassara, D., Zapanta, A., & Garz, S. (2024). Mobile Instant Credit: Impacts, Challenges, and Lessons for Consumer Protection. Center for Effective Global Action. https://reports-cega.berkeley.edu/mobile-instant-credit-report/
- Cassara, D., & Zapanta, A. (2024, January 23). The promise and harms of digital credit: What does the evidence say? Innovations for Poverty Action. https://poverty-action.org/blog/promise-and-harms-digital-credit-what-does-evidence-say
- CGAP. (2003). Microfinance Consensus Guidelines: Definitions of Selected Financial Terms, Ratios, and Adjustments for Microfinance. https://www.cgap.org/sites/default/files/CGAP-Consensus-Guidelines-Definitions-of-Selected-Financial-Terms-Ratios-and-Adjustments-for-Microfinance-Sep-2003.pdf
- Chen, G., & Mazer, R. (2016, February 8). Instant, automated, remote: The key attributes of digital credit. CGAP. https://www.cgap.org/blog/instant-automated-remote-key-attributes-of-digital-credit
- Coppack, M., Raza, Y., Sarkar, S., & Scribbins, K. (2015). Occasional Paper No. 8: Consumer Vulnerability. Financial Conduct Authority. https://www.fca.org.uk/publication/occasional-papers/occasional-paper-8.pdf
- Cox, A., Gould, S., Cecchinato, M., Iacovides, I., & Renfree, I. (2016). Design Frictions for Mindful Interactions: The Case for Microboundaries. CHI' EA 16: Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems, 1389–1397. https://www.ucl.ac.uk/uclic/sites/uclic/files/design-frictions_chi2016lbw_v14.pdf
- Emanuel, E. (2013, June 2). A Simple Way to Reduce Suicides. The New York Times. https://archive.nytimes.com/opinionator.blogs.nytimes.com/2013/06/02/a-simple-way-to-reduce-suicides/
- Field, E., Pande, R., Papp, J., & Rigol, N. (2013). Does the classic microfinance model discourage entrepreneurship among the poor? Experimental evidence from India. American Economic Review, 103(6), 2196-2226. https://doi.org/10.1257/aer.103.6.2196
- FinAccess. (2023). MSE Tracker Survey – Wave II: Follow-up on 2019 and 2021 FinAccess Household Surveys. https://www.centralbank.go.ke/wp-content/uploads/2023/08/FinAccess-MSE-Tracker-Survey-August-2023.pdf
- FinAccess. (2024). 2024 FinAccess Household Survey. https://www.centralbank.go.ke/wp-content/uploads/2024/12/2024-FINACCESS-HOUSEHOLD-SURVEY-MAIN-REPORT.pdf
- Frysak, J., Bernroider, E., & Maier, K. (2016). An Effort Feedback Perspective on Persuasive Decision Aids for Multi-Attribute Decision-Making. International Journal of Information Technology & Decision Making, 16(1), 161–181. https://doi.org/10.1142/S0219622016500486
- Hales B., & Pronovost, P. (2006). The checklist—a tool for error management and performance improvement. Journal of Critical Care, 21, 231–235. https://doi.org/10.1016/j.jcrc.2006.06.002
- Hansen, P., & Jespersen, A. (2013). Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy. European Journal of Risk Regulation, 2013(1), 3–28. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2555337
- Izaguirre, J.C., Arenaza, S., Meagher, P., & Valenzuela, M. (2025). Responsible Digital Credit: Frontier Solutions for Authorities and Providers. CGAP. https://www.cgap.org/sites/default/files/publications/Tech%20Guide_Responsible%20Digital%20Credit.pdf
- Jung, J., & Mellers, B. (2016). American Attitudes Toward Nudges. Judgment and Decision Making, 11(1), 62–74. https://www.researchgate.net/publication/297046362_American_attitudes_toward_nudges
- Karlan, D., Morten, M., & Zinman, J. (2016). A personal touch in text messaging can improve microloan repayment. Behavioral Science & Policy, 1(2), 25–31
- Karlan, D. S., & Zinman, J. (2009, July 15). Expanding Microenterprise Credit Access: Using Randomized Supply Decisions to Estimate the Impacts in Manila. Yale Economics Department Working Paper No. 68; Yale University Economic Growth Center Discussion Paper No. 976. SSRN. http://dx.doi.org/10.2139/ssrn.1444990
- Kelly, S., & Mirpourian, M. (2024, January 18). Algorithmic bias, financial inclusion, and gender. Women's World Banking. https://www.womensworldbanking.org/insights/algorithmic-bias-financial-inclusion-and-gender/
- Klapper, L., Singer, D., Starita, L., & Norris, A. (2025). The Global Findex Database 2025. World Bank. https://www.worldbank.org/en/publication/globalfindex
- Laschke, M., Diefenbach, S., & Hassenzahl, M. (2015). Annoying, but in a Nice Way: An Inquiry into the Experience of Frictional Feedback. International Journal of Design, 9, 129–140. https://www.ijdesign.org/index.php/IJDesign/article/viewFile/2099/689
- Mazer, R., & Garz, S. (2024). Fast growth and slow policy: a decade of digital credit in Kenya. Oxford Review of Economic Policy, 40(1), 82–103. https://doi.org/10.1093/oxrep/grad055
- Pezesha. 2.0 Showcase. https://pezesha.com/2.0-showcase/
- Pezesha. (2024). 2024 Impact Report. https://storage.googleapis.com/impact-report-2024/Pezesha_2024_impact_report.pdf
- Solon, O. (2018, June 4). Apple's new 'digital wellbeing' tools aim to help reduce screen time. The Guardian. https://www.theguardian.com/technology/2018/jun/04/apple-ios12-screen-time-apps-how-much-spent-phone-digital-wellbeing

- van Lieren, A., Calabretta, G., & Schoormans, J. (2018). Rational Overrides: Influence Behavior Beyond Nudging. Design Research Society Biennial Conference Series. https://dl.designresearchsociety.org/cgi/viewcontent.cgi?article=1668&context=drs-conference-papers
- Venkatesan, J., Mazer, R., & Rice, C. (2024). Positive Friction for Responsible Digital Lending: A Call to Action. CFI. https://www.centerforfinancialinclusion.org/wp-content/uploads/2024/03/cfi-positive-friction-for-reponsible-digital-lending-report-2024.pdf
- Vidal, M., & Caire, D. (2024). Gender-Intentional Credit Scoring. CGAP. https://www.cgap.org/research/publication/gender-intentional-credit-scoring
- Voi. (2020, September 23). Tap the helmets: Voi introduces world's first Reaction Test for e-scooters to discourage drunk riding. https://www.voi.com/blog/voi-reaction-test
- Wendel, S. (2013). Designing for Behavior Change: Applying Psychology and Behavioral Economics. O'Reilly Media, Inc.

Annex

Sample Calculations and Assumptions

Since Pezesha is changing the credit appraisal criteria to lend to a newer set of customers who are likely riskier, this could increase the default rate from 20 percent to a higher number. We assumed a **30 percent baseline default rate.**

As a result of introducing positive friction, we expected to see a **20 percent relative reduction.** This number is based on previous studies that introduced interventions in credit.

- Karlan and Zinman (2009) found a 21 percent reduction in loans when borrowers were offered dynamic incentives.
- Karlan et al. (2016) found a reduction in unpaid loans (30 days past due) from 13.5 percent to 9.8 percent when borrowers were sent text message reminders.
- There are other studies that found a higher reduction: Field et al. (2013) found a 370 percent decrease in default rate when borrowers were given a repayment grace period.
- Burlando et al. (2023) found a 21 percent reduction in default rates as a result of delayed disbursements.

Assumption of a 30 Percent Baseline Default Rate:

- For a 20 percent relative reduction (effect size of approximately 0.135), we would need about 857 participants in each group, assuming equal group sizes.

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