

Behavioral Responses to Transparent Loan Pricing: Effects on Cost Recognition, Borrower Confidence, and Credit Choice

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Abstract

Transparent loan pricing is intended to help borrowers understand the economic consequences of credit before entering a contractual obligation. Yet disclosure alone does not guarantee comprehension. Borrowers frequently encounter multiple price components, including nominal interest rates, annual percentage rates, origination charges, processing fees, insurance costs, repayment periods, and other compulsory charges. The behavioral usefulness of pricing information therefore depends on how clearly these elements are organized and whether consumers can translate them into comparable measures of total borrowing cost. This study examines behavioral responses to progressively transparent loan-pricing formats, focusing on cost identification, decision confidence, anticipated fee surprise, decision time, and selection of comparatively expensive credit.

Because no original borrower dataset was provided, the article adopts an explicitly simulation-based design and does not represent synthetic observations as field evidence. A dataset of 360 hypothetical borrowers was generated across four disclosure conditions: fragmented pricing, APR-emphasized disclosure, APR plus itemized fees, and standardized total-cost comparison. The simulated analysis shows a progressive improvement in identification of the lowest-cost loan as transparency increases. Correct loan-cost identification rises from 45.56% under fragmented pricing to 88.89% under standardized total-cost comparison, while the proportion selecting a high-cost offer falls from 36.67% to 13.33%.

More transparent formats are also associated with greater decision confidence, lower anticipated fee surprise, and shorter evaluation time. The study argues that effective transparency requires more than legally complete information. Pricing disclosures should support comparison, reduce cognitive fragmentation, distinguish interest from noninterest charges, and show the monetary implications of repayment structure. The findings provide a methodological framework for subsequent field experiments examining how standardized loan-pricing communication can affect borrowing behavior without restricting consumer choice.

Keywords: loan pricing transparency, consumer credit, APR disclosure, behavioral finance, borrowing decisions, financial disclosure, loan comparison, consumer protection.



1. Introduction

Consumer credit decisions often require borrowers to evaluate several dimensions of price simultaneously. A loan may appear inexpensive when attention is directed toward the monthly installment while carrying substantial origination charges, a long repayment term, or a comparatively high effective borrowing cost. Conversely, a loan with a higher periodic payment may be economically less expensive over its full contractual life. The problem is therefore not limited to whether lenders reveal information; it concerns whether borrowers can identify, interpret, and compare the information that determines the true cost of borrowing. Federal Reserve consumer-testing work has emphasized that disclosures become useful when information is understandable, appropriately contextualized, and presented in a form that consumers can navigate rather than merely receive.

Research in consumer finance provides strong reasons to treat pricing presentation as a behavioral variable. Stango and Zinman examined what they termed payment-interest bias and found that consumers can underestimate borrowing costs when interest rates are insufficiently salient, while weaker enforcement of Truth in Lending disclosure requirements widened pricing differences between more-biased and less-biased borrowers. Their evidence indicates that the form and enforcement of pricing disclosure can influence market outcomes rather than functioning simply as administrative documentation. Bertrand, Karlan, Mullainathan, Shafir, and Zinman's consumer-credit field experiment likewise showed that nonprice features of loan marketing could materially influence demand, demonstrating that borrowing behavior is sensitive not only to economic price but also to how credit offers are cognitively presented.

Transparent pricing is especially significant because borrowers often encounter credit at moments when liquidity needs are immediate. Under such conditions, attention may concentrate on approval, installment affordability, or immediate cash availability rather than total contractual cost. Bertrand and Morse's field experiment with payday borrowers found that disclosures designed to make cumulative borrowing costs more salient reduced subsequent payday borrowing, with their dollar-cost intervention reducing future loan take-up by approximately 11% over the following four months. This evidence demonstrates that additional information can influence behavior when it directly addresses the cognitive process through which borrowers evaluate repeated borrowing costs.

Regulatory experience with mortgage disclosure provides an additional illustration. The Consumer Financial Protection Bureau developed the Loan Estimate and Closing Disclosure to consolidate previously overlapping mortgage disclosures into more standardized forms. Consumer testing reported substantially better identification of key loan information with the redesigned Loan Estimate, and the Bureau's 2020 assessment concluded that the TRID framework improved consumers' ability to locate important information and compare terms and costs, although evidence on broader understanding was more mixed. The implication is that transparency is multidimensional: standardized layout and comparison-friendly information can improve some elements of decision quality even when complex financial concepts remain difficult.

The present study develops a behavioral framework for examining this issue across progressively transparent loan-pricing conditions. Rather than assuming that "more disclosure" automatically produces better decisions, it separates four levels of presentation ranging from fragmented price components to standardized total-cost comparison. The analysis focuses on whether borrowers correctly identify the



least costly loan, how confident they feel about the choice, whether they anticipate unexpected charges, how long they require to reach a decision, and how frequently they select a relatively expensive loan. Because no field observations were supplied, all numerical results are explicitly simulated. The purpose is to establish a reproducible model that can later be tested through controlled experiments, lender-platform trials, laboratory studies, or ethically collected consumer-credit data.

2. Objectives of the Study

2.1 To Examine Behavioral Changes Under Increasing Pricing Transparency

The first objective is to evaluate how borrower behavior may change when the economic price of a loan becomes progressively easier to identify and compare. Transparency is not defined simply as the volume of information disclosed. A disclosure can contain every legally required figure and remain behaviorally opaque if essential price components are scattered across several pages, expressed using inconsistent units, or presented without a clear comparison framework.

The study therefore distinguishes fragmented information from structured transparency. It examines whether emphasizing APR improves decisions, whether combining APR with an explicit fee breakdown provides additional benefits, and whether standardized presentation of total repayment cost generates the strongest decision performance. This sequence reflects Federal Reserve testing that found plain language, visual organization, contextual information, and careful standardization can materially affect the usability of financial disclosures.

2.2 To Assess Decision Quality, Confidence, and High-Cost Loan Selection

The second objective is to examine several behavioral outcomes rather than treating loan acceptance as the only relevant response. A borrower may accept a loan while misunderstanding its cost, while another may reject the same loan after accurately recognizing its price. Decision quality therefore requires measures that capture comprehension and comparison alongside final choice.

The present framework evaluates correct identification of the lowest-total-cost offer, subjective decision confidence, anticipated fee surprise, time required to compare offers, and selection of a high-cost alternative. Together, these measures provide a broader account of whether transparent pricing improves the decision process rather than merely changing the probability of borrowing.

3. Review of Literature

3.1 Price Disclosure, APR, and Consumer Cost Recognition

The annual percentage rate was designed to provide a standardized measure through which consumers could compare borrowing costs across credit offers. Its usefulness arises because borrowers otherwise face multiple price components that are difficult to aggregate mentally. Federal Reserve consumer testing has described mortgage APR as potentially useful for comparison because it incorporates various upfront loan costs together with payments over the life of the loan. The same research, however, found that many consumers contacted only one lender or broker, thereby limiting the practical comparative context in which APR can perform its intended function.

Stango and Zinman's study provides an important behavioral explanation for why standardized rate disclosure matters. They argued that lenders can exploit consumers' difficulty in translating



payments into interest rates when marketing emphasizes apparently affordable periodic payments. Their analysis of Truth in Lending enforcement showed that weaker enforcement widened the interest-rate gap between borrowers who were more susceptible to payment-interest bias and those who were less susceptible. This evidence supports the proposition that transparent pricing can affect distributional outcomes because consumers with weaker financial numeracy may be particularly vulnerable to shrouded costs.

Nevertheless, an APR alone does not solve every comparison problem. Borrowers may misunderstand what APR includes, confuse it with the nominal contract rate, or fail to relate it to total repayment. The behavioral value of APR therefore depends on complementary presentation. Transparent pricing should help a borrower answer several distinct questions: what is the interest rate, which fees are compulsory, what amount will actually be received, what amount will ultimately be repaid, and how does one loan compare with another on an economically consistent basis.

3.2 Behavioral Framing and Borrowing Decisions

Behavioral research demonstrates that credit demand can respond strongly to presentation. Bertrand and colleagues implemented a field experiment with consumer-loan marketing in South Africa and found that advertising features influenced demand by magnitudes comparable in some cases to substantial changes in interest rates. Their results indicate that consumers do not process credit offers exclusively through a stable calculation of price and repayment utility; attention, framing, complexity, and peripheral cues can alter choice.

Bertrand and Morse later examined whether carefully designed disclosure could counter cognitive biases in payday borrowing. Their intervention made accumulated dollar fees more salient across repeated borrowing cycles. The treatment reduced subsequent payday borrowing, providing direct evidence that the framing of cost information can alter credit behavior. The finding is especially important for transparent pricing because it demonstrates that an economically equivalent cost can generate different behavioral responses depending on whether consumers are prompted to evaluate it over time.

These findings caution against defining transparency as an information-maximization exercise. The Federal Reserve's disclosure-testing program explicitly concluded that excessive information can overwhelm consumers and distract attention from key content. Plain wording, headings, tables, contextual frames, and meaningful comparison structures can improve usability, while complex explanations may sometimes fail even when formally accurate. Effective transparency is therefore better understood as usable completeness: material information should be available, but the architecture of presentation should prioritize the information necessary for a sound comparison.

3.3 Standardized Disclosure, Consumer Protection, and the Research Gap

Mortgage regulation provides one of the clearest institutional examples of standardized loan-cost disclosure. The CFPB's TRID framework integrated prior mortgage disclosures into a Loan Estimate and a Closing Disclosure for most covered closed-end mortgage transactions. The Bureau's 2020 assessment evaluated whether this integration improved the ability of borrowers to use and compare loan information. Evidence reported by the Bureau indicated improvement in locating key information and



comparing costs and terms across stages and offers, although the effect on more comprehensive understanding was less uniform.

Earlier experimental work by Lacko and Pappalardo at the Federal Trade Commission had already shown that existing mortgage disclosures failed to communicate important costs and terms effectively to many consumers. Their research found more favorable consumer responses to redesigned prototype disclosures, reinforcing the principle that disclosure design should be tested empirically rather than assumed to work because the required information is technically present.

The remaining research gap concerns the behavioral progression between levels of pricing transparency. Existing literature provides evidence on APR disclosure, disclosure design, credit marketing, mortgage forms, and behavioral interventions, but relatively fewer frameworks simultaneously compare fragmented pricing, APR salience, itemized fee transparency, and standardized total-cost presentation while examining multiple behavioral outcomes. The present simulation addresses this gap by specifying an experimental architecture suitable for later empirical validation.

4. Research Methodology

4.1 Research Design and Experimental Architecture

The study uses a quantitative simulation-based experimental framework. No claim is made that the 360 observations represent actual borrowers. Synthetic data are used because they allow the proposed research design to be demonstrated without creating fictitious empirical respondents. A future study could reproduce the architecture in an online randomized controlled experiment in which real participants are assigned to different pricing-disclosure interfaces.

The hypothetical participants are divided equally across four disclosure conditions, with 90 observations in each group. Every participant is assumed to compare otherwise equivalent loan scenarios in which the underlying financial terms remain constant while the presentation of pricing information changes. The first condition provides fragmented pricing information. The second prominently presents APR. The third combines APR with an itemized breakdown of compulsory fees. The fourth presents standardized APR, fees, total repayment, and comparison information in one consolidated format.

Table 1: Proposed Experimental Measurement Framework

Construct	Operational Definition	Measurement	Role
Pricing transparency	Degree to which interest, fees, and total repayment are consolidated and comparable	Four experimental conditions	Treatment variable
Cost-choice accuracy	Correct identification of the loan with the lowest total borrowing cost	0 = incorrect; 1 = correct	Primary outcome
Decision confidence	Borrower's perceived confidence in the selected offer	1–5 scale	Behavioral outcome
Fee surprise	Anticipated likelihood that charges would later appear unexpected	1–5 scale	Behavioral outcome



Construct	Operational Definition	Measurement	Role
Decision time	Time required to compare loan alternatives	Minutes	Process outcome
High-cost selection	Choice of a comparatively expensive loan despite the presence of a cheaper alternative	0 = no; 1 = yes	Risk outcome

The framework intentionally separates comprehension from confidence. Greater confidence is desirable only when it is accompanied by more accurate cost recognition. A poorly designed disclosure might generate unjustified confidence, while an effective disclosure should ideally improve both subjective certainty and objective choice accuracy.

4.2 Proposed Questionnaire and Behavioral Tasks

A future field or laboratory experiment should combine direct choice tasks with a short post-decision questionnaire. Participants could be shown three standardized loan offers containing equivalent principal amounts and repayment horizons but different distributions of interest and compulsory fees. Researchers could then observe which offer is selected and whether participants can accurately identify total borrowing costs without asking them to reveal sensitive personal borrowing histories.

Exactly five questionnaire items are proposed and have not been administered. Q1 would ask, “Which of the displayed loan offers has the lowest total borrowing cost over the stated repayment period?” Q2 would ask, “How confident are you that you correctly understood the complete price of the loan you selected?” Q3 would ask, “How easy was it to compare the interest rate and compulsory fees across the available loan offers?” Q4 would ask, “How likely do you think it is that you would encounter a charge later that was not obvious when you first compared these loans?” Q5 would ask, “If the loan were required today, which of the displayed offers would you choose?”

The experimental interface should record decision time independently of questionnaire responses. A future empirical study could additionally collect financial literacy, numeracy, borrowing experience, age, education, income, employment type, and prior exposure to loan products as covariates. Because these variables may influence comprehension, randomization should be checked for balance before treatment effects are estimated.

4.3 Simulation Procedure and Analytical Strategy

A fixed random seed was used to generate 360 synthetic observations. The modeled probability of correctly identifying the lowest-cost loan was set progressively higher as disclosure transparency increased. Decision confidence was likewise modeled to increase, while anticipated fee surprise and decision time were modeled to decline. High-cost loan selection was assigned decreasing probabilities under the more transparent disclosure conditions.

The analysis is descriptive by design. Frequencies, percentages, group means, and cross-condition comparisons are used to illustrate expected behavioral patterns. Inferential claims about actual



borrowers are deliberately avoided because statistical significance generated from a constructed dataset would not provide evidence about any real consumer population.

Future validation could estimate treatment effects through logistic regression for cost-choice accuracy and high-cost selection, alongside linear or ordinal models for confidence and fee surprise. Interaction terms could be included to determine whether disclosure effects differ by financial numeracy or prior borrowing experience.

5. Analysis

5.1 Behavioral Differences Across Pricing Conditions

The simulated results demonstrate a clear behavioral progression across the four disclosure conditions. Under fragmented pricing, only 45.56% of hypothetical borrowers correctly identify the least costly loan. Accuracy rises to 60.00% when APR is emphasized and to 70.00% when APR is accompanied by an explicit fee breakdown. The strongest result occurs under standardized total-cost comparison, where 88.89% make the correct cost-based choice.

The pattern suggests that APR improves comparison but does not by itself eliminate confusion created by multiple noninterest charges. Additional fee visibility produces a further increase in decision accuracy, while combining all material cost information within a standardized comparison structure yields the highest modeled performance.

Table 2: Simulated Behavioral Responses to Increasing Loan-Price Transparency

Disclosure Condition	Simulated n	Correct Lowest-Cost Choice (%)	Mean Decision Confidence	Mean Fee Surprise	Mean Decision Time (min.)	High-Cost Choice (%)
Fragmented pricing	90	45.56	2.94	3.75	8.08	36.67
APR emphasized	90	60.00	3.44	3.06	7.12	30.00
APR + fee breakdown	90	70.00	3.88	2.50	6.57	26.67
Standardized total-cost comparison	90	88.89	4.19	2.02	5.97	13.33

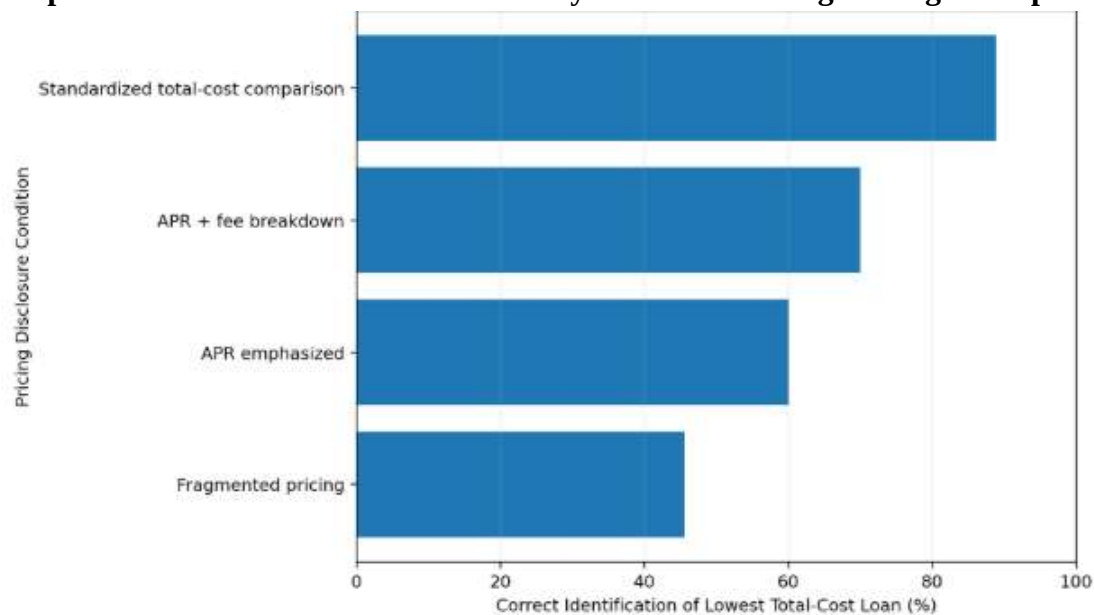
The table shows that transparency affects several dimensions simultaneously within the simulation. The standardized condition produces the highest decision confidence while also producing the lowest fee-surprise score and shortest average evaluation time. This combination is important because clearer

disclosures need not necessarily slow consumers by requiring them to process more information. When price components are consolidated effectively, transparency can potentially reduce rather than increase cognitive effort.

5.2 Loan-Choice Accuracy Under Increasing Transparency

Graph 1 isolates the primary outcome: correct identification of the lowest-total-cost loan. The progressive increase is substantial across the four conditions, particularly between fragmented presentation and standardized comparison.

Graph 1: Simulated Loan-Choice Accuracy Under Increasing Pricing Transparency



The increase from 45.56% to 88.89% represents a 43.33 percentage-point difference between the least and most transparent simulated conditions. This should not be interpreted as an estimated real-world treatment effect. Rather, it illustrates the central hypothesis to be tested empirically: a disclosure that simultaneously displays APR, compulsory fees, and total repayment in a standardized format may produce substantially more accurate comparison than a presentation in which the same economic information is dispersed.

The graph also illustrates why disclosure research should avoid a binary transparent-versus-nontransparent distinction. The intermediate conditions produce meaningful but incomplete improvements. APR salience increases accuracy, and fee itemization provides further improvement, but the strongest modeled response occurs when the borrower is relieved of the need to reconstruct total cost from several separate components.

5.3 High-Cost Selection, Confidence, and Decision Efficiency

Selection of the relatively expensive loan falls from 36.67% under fragmented pricing to 13.33% under standardized total-cost presentation. The direction is consistent with the argument that transparent



pricing improves competitive comparison by making expensive offers more readily distinguishable. This mechanism is conceptually consistent with the Federal Reserve's description of APR as a comparison-friendly measure when consumers possess the necessary comparative context.

Decision confidence increases from a mean of 2.94 to 4.19 across the same conditions. At the same time, anticipated fee surprise declines from 3.75 to 2.02. These movements suggest that standardized presentation may improve both the perceived and objective dimensions of decision quality when confidence is supported by greater accuracy rather than generated by persuasive marketing.

Average decision time falls from 8.08 minutes under fragmented information to 5.97 minutes under standardized comparison. The simulation therefore treats transparency as a mechanism for reducing search and computational burdens. This interpretation is compatible with consumer-testing evidence showing that thoughtful headings, tables, organization, and contextual information can improve users' ability to locate and understand financial information.

6. Discussion

6.1 Transparent Pricing as Decision Architecture

The first major implication is that loan-price transparency should be understood as decision architecture rather than document completeness. A disclosure may technically contain the nominal interest rate, APR, processing charges, insurance costs, repayment period, and other charges while still requiring the borrower to perform several calculations before determining which offer is cheaper. Under time pressure or limited numeracy, this fragmented architecture creates opportunities for attention to shift toward whichever figure is easiest to understand, particularly monthly installments.

Stango and Zinman's findings provide a useful theoretical foundation for this interpretation. Their evidence indicates that consumers who have difficulty translating payment streams into interest costs can pay different rates when disclosure enforcement is weaker. Transparent pricing therefore has an equity dimension as well as an efficiency dimension. Consumers with stronger financial numeracy may reconstruct fragmented prices with relative ease, while consumers with weaker numeracy may benefit disproportionately from standardized presentation.

The policy objective should consequently not be to remove choice or require every consumer to prefer the cheapest loan. A higher-cost product may legitimately provide other valued attributes, such as flexibility or speed. The transparency objective is narrower and more defensible: borrowers should be able to recognize the additional price they are paying for those attributes. A decision can then remain autonomous while becoming economically informed.

6.2 Why APR Alone May Be Insufficient

The simulated progression from APR emphasis to APR plus fee disclosure and finally to standardized total-cost comparison illustrates an important limitation of single-metric transparency. APR is highly valuable because it standardizes borrowing cost, but it is an abstract percentage and can be misunderstood. Consumers may continue to focus on installment size or may not understand how upfront charges interact with the stated interest rate.

Federal Reserve testing explicitly noted that APR becomes particularly meaningful as a comparison device when borrowers can evaluate similar offers side by side. The same testing program



found that context and framing can improve comprehension of individual disclosure elements. These observations support presenting APR together with monetary outcomes rather than treating it as a self-explanatory statistic.

Bertrand and Morse's payday-loan experiment reinforces the value of translating percentages and per-transaction charges into cumulative dollar consequences. Their intervention was effective when it helped borrowers consider costs across repeated borrowing cycles rather than in isolation. For transparent loan pricing, this implies that percentage measures should be complemented by total dollar repayment and clear disclosure of unavoidable charges.

Standardization further allows consumers to compare like with like. If one lender emphasizes a monthly installment, another emphasizes a nominal interest rate, and a third highlights an introductory fee waiver, comparison becomes cognitively expensive even when every figure is truthful. A consistent disclosure structure limits this strategic variation without requiring lenders to offer identical products.

6.3 Implications for Lenders, Regulators, and Digital Credit Platforms

For lenders, transparent pricing can support trust and reduce post-contract dissatisfaction. The simulated decline in fee surprise illustrates an important commercial implication: when consumers understand costs before accepting a loan, unexpected charges should become less likely to damage the lender–borrower relationship. Transparent pricing should therefore be viewed not solely as a compliance cost but also as a component of responsible product design.

Regulators can draw a similar lesson from the development of mortgage disclosures. The CFPB's integrated Loan Estimate and Closing Disclosure were designed to consolidate information and improve comparison. Its 2020 assessment reported improvements in consumers' ability to locate key information and compare loan terms and costs, even though evidence on overall understanding was not uniformly conclusive. This mixed evidence is instructive: better design can improve important behavioral outcomes without eliminating every cognitive challenge associated with complex financial products.

Digital lending platforms create additional opportunities. Interfaces can dynamically present standardized total-cost comparisons, explain fees before confirmation, and display repayment consequences without requiring users to open multiple documents. However, digital design can also undermine transparency through preselected options, visually dominant monthly-payment figures, difficult-to-find fees, or interface friction that discourages comparison. Transparent pricing principles should therefore apply to the entire decision interface rather than only to downloadable contractual documents.

7. Conclusion

Transparent loan pricing has the potential to improve consumer credit decisions when disclosures are designed around how borrowers actually compare financial alternatives. The central distinction developed in this paper is between formal disclosure and usable transparency. Providing economically material information is necessary, but information must also be organized so that borrowers can recognize interest charges, compulsory fees, and total repayment without reconstructing the loan's price from disconnected elements.



The simulation-based analysis illustrates this principle. Correct identification of the lowest-cost loan increases progressively from fragmented pricing to APR disclosure, APR with itemized fees, and standardized total-cost comparison. The most transparent condition also produces lower modeled high-cost loan selection, greater decision confidence, less anticipated fee surprise, and shorter comparison time. These numerical results are synthetic and should not be generalized to real borrower populations, but they establish a clear empirical design for future testing.

The findings also reinforce a broader behavioral insight from existing consumer-finance research. Stango and Zinman demonstrate that disclosure can constrain outcomes associated with payment-interest bias, Bertrand and Morse show that appropriately framed cost information can change borrowing behavior, and regulatory consumer testing indicates that disclosure design affects comprehension and comparability. Transparency should therefore be evaluated according to behavioral performance rather than the number of disclosures delivered.

Future empirical studies should randomize actual participants across disclosure formats and measure comprehension, loan choice, decision time, recall, and subsequent repayment behavior. Researchers should also examine heterogeneity by numeracy, financial literacy, prior borrowing experience, income stability, and digital familiarity. The broader objective should not be to prescribe which loan consumers must choose, but to create pricing environments in which the economic consequences of each choice are sufficiently visible for genuine informed consent and meaningful market competition.

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