August 2015

Leveraging technology to empower mortgage consumers at closing

Learnings from the eClosing pilot

Consumer Financial Protection Bureau

Message from Richard Cordray

Director of the CFPB

Since our inception, the Consumer Financial Protection Bureau (CFPB) has been committed to improving the mortgage process for consumers. With almost 10 million mortgages closed each year, the American mortgage market is the largest consumer financial market in the world. For most consumers, buying a home constitutes the largest financial transaction of their lives, and the financial crisis revealed the deep connections between the mortgage market and our broader economy. Yet, as we explained in our April 2014 report, *Mortgage Closings Today*, too often the process of obtaining a mortgage is fraught with considerable anxiety and overwhelming amounts of paperwork.[1] This process is currently not working as well as it could for consumers or industry.

The Bureau is committed to empowering mortgage consumers and fostering a more efficient, consumer-friendly process. While our initial efforts focused on establishing mortgage processing guard rails to protect consumers, our focus this year has been on empowering mortgage consumers through our Know Before You Owe initiative. Beyond rulemaking, this initiative also includes our work to provide tools and information that consumers can use to have more control over the mortgage process and to make better financial choices to meet their own life goals. We intend to be a catalyst for change in areas where we see great promise.

[1] Available at http://files.consumerfinance.gov/f/201404_cfpb_report_mortgage-closings-today.pdf

To that end, we are ardent believers in the promise of technology, including electronic closing technologies, referred to in this study and commonly known as eClosing. Using the power of technology has shown the potential to simplify the closing process and empower consumers with better organized information, more time to review that information, and the ability to embed educational resources. When the Bureau started exploring the process and use of eClosings in 2013, we participated in extensive conversations with consumers, industry stakeholders, consumer advocates, and partners across government. We heard anecdotal evidence about the potential benefits and risks of these technologies and about the challenges associated with eClosing adoption. However, we had not come across a consumer-focused study to evaluate any of these positive or negative impacts. For that reason, we set out to conduct a pilot project that would take a closer look at how the eClosing process might influence the mortgage closing experience for consumers.

Today, we are proud to share the results of that pilot, which reveal some important initial insights about how eClosing can influence a consumer's home-buying experience and can offer a promising option for consumers. Notably, eClosing borrowers in our pilot scored higher than paper borrowers on our measures of empowerment at closing, perceived understanding, and efficiency.

We were pleased, but not surprised, to see another critical finding in our pilot analysis: often, the consumers who showed the best results according to our metrics were those who received and reviewed their closing documents before the closing meeting. Early document delivery and review was associated with better measured outcomes in both paper and eClosing transactions, but the early delivery of documents occurred much more consistently in the eClosings we analyzed during the study. Similarly, those who accessed CFPB educational materials saw gains in the outcomes that we measured.

While we cannot determine any direct link here, I would intuit that both early document review and educational materials can play a role in helping consumers to better understand their closing documents and the process. Both of these results were well aligned with the research that was the basis of our Know Before You Owe initiatives to get more information into the hands of consumers earlier in the mortgage process. The timing requirements of the Know Before You Owe mortgage disclosure rule will help accomplish that goal. While the information that this pilot yielded is not sufficient to allow us to draw definitive conclusions, we were encouraged by what we saw within the scope of our pilot. Additional research is needed to gather more information, further validate some of these initial findings, and expand on how to serve consumers better. The overall story of this pilot on eClosing is positive, and the CFPB will continue to explore eClosing and further discuss how these technologies can enhance consumer outcomes. We are excited to continue to encourage other tools and processes that foster greater understanding, empowerment, and efficiency for consumers.

Central to the success of the pilot was our close work with participating lenders, technology vendors, and settlement agents. We are grateful to our pilot participants who contributed so much time and effort to produce this initial research, and we are eager to build on this work with other stakeholders across government and industry. We are pleased to see that more companies are adopting eClosing solutions and that our embedded educational materials will appear front-and-center in some of these closing platforms. Some companies have told us that they are utilizing eClosing technologies to improve the consumer experience, deliver and sign documents electronically and leveraging our Owning a Home website and content to educate consumers. Industry also tells us that they see eClosing as likely to improve efficiency and accuracy and to lead to lower costs. That could be a win-win outcome on both sides of the closing table.

Closing on a mortgage remains one of the most significant, yet stressful, times in the lives of consumers. However, this report offers promise that technology could be an important tool to break down a complex process into one that is easier to understand. We know that much work and further study lies ahead. We envision a world where most of the mortgage transaction is facilitated by technology, and where consumers have adequate time to review documents and access tools to help them break down the complexity of the process. The new Closing Disclosure, a consumer-tested summary of the transaction that gives consumers the final loan terms in one place before they sign, will serve as the key document that should be the front and center to guide the closing meeting.

We remain committed and excited to continue to learn and to work with all stakeholders – serving as a catalyst for consumer-friendly innovations, as a convener of cross-sector collaboration, and as an advocate – to ensure that consumers understand the commitment they are making and are empowered to make better informed financial choices.

Sincerely,

Richard Cordray

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1. Executive summary

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)[2] directed the Consumer Financial Protection Bureau (CFPB) to develop and implement initiatives intended to educate and empower consumers to make better informed financial decisions.[3] The financial crisis was a prime example of what happens when consumers operate in a world of little transparency. As part of the CFPB's broader efforts to improve the mortgage process for consumers, the Bureau took a look with a microscopic lens at one important part of a mortgage transaction: the closing process - the last step before a consumer is contractually obligated to their loan. Following this study, the Bureau became interested in how technology-enabled closings (eClosings) could facilitate embedding educational materials to closing platforms in addition to early review of closing documents. We conducted a pilot research program, with lenders and technology vendors, to evaluate eClosing processes and their role in influencing the consumer experience. It is important to note that when we talk about eClosing, we refer to mortgage closings that rely on technology that allows consumers and those involved with the mortgage transaction to view and sign documents electronically. Our definition also includes hybrid eClosing, in which a portion of the closing documents are viewed or signed electronically

[2] Pub. L. 111-203, 124 Stat. 1376-2223 (2010).)

[3] An important financial literacy mandate is set forth in Section 1013(d) of the Dodd-Frank Act, which directs the Bureau, through its Office of Financial Education, to develop and implement initiatives intended to “educate and empower consumers to make better informed financial decisions” and to “develop and implement a strategy to improve the financial literacy of consumers.” (12 U.S.C. § 5493(d)(1)&(2)). The Dodd-Frank Act also mandated the creation of other offices within the Bureau that are responsible for, among other things, developing financial education and policy initiatives to support the financial well-being of particular segments of the consumer population (12 U.S.C. § 5493(b),(e),(g)).

while others are signed with ink on paper.[4] The purpose of our pilot was to explore whether the use of eClosing technology combined with more time to review closing documents with embedded educational tools can help consumers navigate the closing process. In addition, we wanted to see how these changes might improve efficiencies in the lending process.

Seven lenders participated in this pilot; some had prior experience conducting eClosings and others instituted the necessary process changes for this pilot. In addition to gathering data from lenders and settlement agents, we also surveyed consumers who closed loans with these lenders.

Building upon consumer research in the report *Mortgage Closings Today*, we decided to evaluate the eClosing solutions of the pilot on three dimensions of the consumer experience: empowerment, understanding, and process efficiencies during the closing process.[5][6] For the purposes of this pilot, we measured empowerment in several ways, including the consumer's ability to feel like they are playing a more active role in the closing process – for example, by having sufficient time to review documents and ask questions. Similarly, we measure consumer understanding as knowledge of the most important loan information, such as: terms and fees, justifications for any difference between quoted and final costs, and awareness of the borrower's rights, responsibilities, and relevant consequences. We captured several indicators of process efficiency, including the timing for important steps of the process, delays, and errors in documents. Where possible, we collected data on both actual and perceived understanding and efficiency – in some instances, we relied on data as self-reported by consumers or other closing participants (e.g., settlement agents).[7] As described further in the Methodology section, our core

[4] Note that eClosings are fundamentally different from eMortgages. In the past, some mortgage closing parties have viewed eClosing as an “all or nothing” proposal with large focus on the eNote. It is clear that lenders have increasingly embraced “hybrid” approaches to eClosing, with pieces of the closing process moved to electronic format and others remaining on paper and/or in person. This “hybrid” approach is significantly more common across industry than a fully electronic closing; most often, when we are referring to an “eClosing”, we are referring to a hybrid process. See Methodology (in Chapter 3) for more information.

[5] See Methodology (in Chapter 3) for full definitions of each outcome and how they were tested and measured.

[6] Note that this pilot was not intended to measure outcomes regarding the loan itself but rather the focus is on measuring improvements in the closing process.

[7] See Methodology (in Chapter 3) for clarification on the differences between perceived and actual outcomes. The Implications section (in Chapter 6) outlines our recommendations for further research to address this limitation.

experimental design revolved around dividing consumers among test groups who experienced a paper closing, a base eClosing, or advanced eClosing, where closing platforms included embedded educational materials and consumers had more time to review closing documents. [8] [9]

The CFPB asked consumers questions about their actual knowledge and understanding of the process, and how they felt about the process. On the perception questions, scores were calculated based on borrowers' rating their responses from "strongly agree" to "strongly disagree" to various statements. Data from these questions were presented as "net positive scores," which were calculated as the difference between the percentage of those who responded positively and the percentage of those who responded negatively.

It is worth noting that the pilot resulted in two important sources of learning: one was borrower-specific data on the consumer experience, of which the majority of borrowers in the study came from the pilot participants with prior experience with eClosings. At the same time, several pilot lenders who were using eClosing for the first time provided critical feedback regarding what it takes to implement and execute eClosing in the marketplace. This report outlines the key findings of this pilot program, summarizes lessons learned regarding the implementation of eClosing platforms and processes, and articulates potential implications and next steps for industry and the Bureau. In the years ahead, we believe that eClosing can provide an opportunity to deliver an improved experience for this important step in the mortgage transaction and benefit both industry and consumers.

[8] See Methodology (in Chapter 3) for a more detailed description of our experimental design. The key difference between "base" eClosing and "advanced" eClosing was that with advanced eClosings, consumers received their closing documents three days prior to their closing meeting and had access to CFPB educational materials.

[9] We use terms "empowerment at closing," and "feeling empowered" interchangeably. The definition of empowerment in closing used in this report refers to a set of measures defined solely for the purposes of the CFPB eClosing pilot and is not to be confused with the term "financial empowerment" or with the CFPB's work through its Office of Financial Empowerment. The CFPB's Office of Financial Empowerment works to empower low-income and economically vulnerable consumers to make informed financial decisions by providing them with tools and information and by promoting a more inclusive and fair financial marketplace. For more information about the Office of Financial Empowerment: http://www.consumerfinance.gov/empowerment/

1.1 Key findings

Evidence from the data, surveys, and interviews collected during this pilot indicates that eClosing solutions enhanced certain aspects of the overall consumer experience with the mortgage closing process, based on the three key outcomes described above. As summarized in Chapter 4, the most notable findings are as follows:

On average, eClosing borrowers in the pilot had higher scores than paper borrowers on our measured outcomes, including perceived empowerment, understanding (perceived and actual), and efficiency.

- The largest differences between borrowers who participated in an eClosing and a paper closing were in our measures of perceived empowerment and efficiency.

Consumers who received and reviewed documents before the closing meeting reported feeling more empowered in the closing process, with higher levels of perceived understanding and efficiency. Additionally, these consumers had higher scores on the actual understanding quiz relative to those who did not review documents before the meeting.

- Differences across these key outcomes were particularly pronounced in purchase transactions.[10]
- In the pilot, early document review was more prevalent in eClosing than in paper closings.[11]

Most pilot borrowers with access to CFPB educational materials stated that they used these materials and reported that they were useful.

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[10] For purchase eClosings, the total loan sample size was 138 and survey sample size was 47. For refinance eClosings, the total loan sample size was 985 and survey sample size was 490.

[11] Delivery of closing documents 3 business days prior to closing will be required by the Know Before You Owe mortgage disclosure rule as of October 3, 2015.

- Borrowers in the pilot who used educational materials reported higher empowerment in the closing process, less confusion, and clearer understanding than those who did not use them.

Detailed analysis revealed important nuances among transaction types on eClosings relative to paper closings in the pilot.

- For purchase transactions in the pilot, borrowers experiencing an eClosing scored higher than consumers in the paper closing group on perceived understanding and actual knowledge, and the relationship was even more pronounced in measures of perceived empowerment.

- For refinance transactions in the pilot, results were mixed on the measured outcomes among paper closings, base eClosings, and advanced eClosings.

eClosing transactions in the pilot exhibited shorter closing meetings and earlier document delivery, which matched higher scores on consumer perceptions of efficiency.

- On average, consumers experiencing an eClosing in the pilot received the documents more quickly after the documents were cleared to close and consumers had longer periods of time to review documents than consumers who did a paper closing.

- eClosing meetings in the pilot, on average, were reported to be much shorter than paper closings, particularly for purchases.[12]

- Borrower perceptions of efficiency were higher for eClosing borrowers than for borrowers in the paper closing group, particularly in reference to purchase transactions.

First-time homebuyers, low/moderate income borrowers and borrowers with the most years of formal education all had the largest positive gains between paper and eClosing, yet all scored relatively low on our measures of understanding and perceived empowerment.

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[12] This could be due largely to consumers having the opportunity to review documents in advance and ask questions before closing.

Readers of this report should note that our conclusions are based on the limited scope of loans in our pilot (3,292 loans and 1,254 survey respondents from seven lenders) and limitations of the experimental design (e.g. inability to run a fully randomized trial). Given the small sample size and demographic limitations, we did not test for statistical significance in our findings; rather, we report differences in average borrower outcomes to offer directional views of the consumer experience. In many cases, we include actual and percentage differences to provide transparency for readers seeking to interpret the findings. Because of the barriers to full randomization, the data could have selection bias, both within lenders and across lenders. Our findings of this report do not necessarily indicate causation, but rather a relationship between the variables. Nevertheless, the data we collected has given us valuable insights that can be used as a launching pad for further eClosing exploration and research and reinforced our perceptions that eClosing can improve the experience for consumers. [13]

1.2 Additional lessons learned

Chapter 5 provides lessons learned and insights from the companies that participated in the pilot, collected from interviews and conversations during and after the pilot. Several lessons learned relate to practices that contributed to successful implementation of eClosing solutions, while others are common challenges that a number of the participants faced.

Several common practices contributed to successful implementation of eClosing solutions among pilot participants. These factors played a role in differentiating the lenders who were able to conduct eClosings more easily from those who faced more challenges in implementation. Those key success factors included:

- Clear expectations and consistent communication between all players involved (e.g. lenders, vendors, and their associated partners) was necessary for a successful pilot collaboration.

[13] See Methodology (in Chapter 3) for a fuller explanation of the limitations of these data

- Commitment from company leadership was vital to driving the change and ensuring buy-in across the organization for the efforts involved in implementing eClosings.
- Allowing sufficient time for preparation and/or rollout, including robust user testing, minimized technology issues that consumers and settlement agents faced during the closing process.
- Upfront and continuous training of all stakeholders.

While the pilot highlighted the potential benefits of eClosing, it also underscored that the challenges lenders face in adoption and implementation are greater than previously understood. We categorized the common challenges as operational or coordination-related challenges. It is important to note that each participant was able to overcome these challenges to successfully close mortgages through eClosing solutions, and their observations on challenges provided valuable insight.

Operational challenges included processes and internal roadblocks that had to be overcome for successful implementation of new eClosing technology solutions.

- In some cases, pilot participants had consumers sign more documents with paper and ink than expected for a number of reasons, including limitations of technology platforms, a perception of risk regarding eSignatures,[14] and delays in pursuing implementation of electronic notarization (eNotarization).[15]
- Some lenders were not clear if using a hybrid eClosing process was acceptable when selling loans to secondary market investors. All resolved the concerns with their investors and were able to implement hybrid eClosing processes. .

[14] eSignature is a process in which the borrower, settlement agent, or other actor signs a document electronically, as compared to an "ink signature" or "wet signature" in which the actor signs on paper. An electronic signature could involve a signature pad similar to retail stores, a tablet computer, or another platform.

[15] eNotarization is an electronic notarization process in which the notary signs with an electronic signature and places a "seal" or "stamp" on the electronic document.

- Some participants reiterated that additional guidance from investors on how to address hybrid solutions would be particularly helpful, particularly before broad-based industry use.

- Large-scale workflow and process changes were required to implement eClosing solutions, particularly early document delivery for advanced eClosing.

  - Lenders' pilot experiences shed light on the specific actions each lender took to comply with three-day early document delivery during the period prior to implementation of the Know Before You Owe mortgage disclosure rule, including carefully managing a pipeline of loans for early delivery.

- **Lenders who pursued electronically signed Promissory Notes (eNotes) found process changes to be more complex to manage.[16] Lenders taking incremental steps by implementing hybrid solutions faced less implementation difficulties.**

  - Though lenders may be incentivized to focus on electronically signed Promissory Notes immediately, it may be more feasible to start by having some documents be signed electronically while more complex documents signed with ink. When the focus is on providing consumers with a more empowering experience that is easier to navigate, 100% electronically signed documents is not always necessary.

The large number of separate stakeholders that participate in a mortgage closing transaction and the unique incentives of each party resulted in coordination challenges.

- Given the lack of immediate incentives, and the challenges (including investment of time and resources) associated with implementing a new system or process, many external stakeholders who did business with the pilot participants (e.g. settlement agents, real estate agents, closing attorneys) were resistant to the process changes required to implement eClosing.

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[16] An "eNote" is a promissory note that is signed electronically. This is not the same as an eMortgage, which generally requires the electronic creation, execution, transfer, and storage of the promissory note.

- The low number of eNotarization capabilities remains a sizable challenge. Several pilot participants faced obstacles in obtaining an eNotary for the purposes of the pilot.
- In some instances, technology vendors were unable to adapt to lender expectations and needs specific to implementing eClosing.
    - Though technology capabilities exist, platforms were sometimes not flexible or adaptive enough to address issues quickly.
    - The biggest challenge cited by participants related to the mapping of closing document packages.[17]
    - Effective eClosing solutions also required live support for technical and process issues during the closing process.
- We have perceived a learning curve for settlement agents and other industry stakeholders when first executing an eClosing transaction.
    - User feedback is critical to learning and developing a more refined process.
    - In the early stages of an eClosing rollout, there is a risk that some eClosing consumers may have a less favorable experience than a regular paper closing – this was particularly true with those implementing eClosing for the first time. We learned that borrower feedback, user testing, and training are critical to mitigating this risk, as described in the Implications chapter (Chapter 6).

1.3 Potential implications

We have outlined five proposed implications of this data, taken from the key findings and lessons learned from the pilot, which are described further in Chapter 6. As mentioned previously, while our analysis showed positive results on many of the outcomes we measured,

[17] A key element of many eClosing solutions is the ability of the electronic platform to build a complete set of all possible combinations of documents in a closing package. Doing so ensures that an accurate package of closing documents can be provided to each borrower. We refer to this process as "document mapping."

we gave careful consideration to the nuances and limitations of the data in evaluating potential implications and next steps.

Industry should continue to explore eClosing as a promising option for consumers.

- On average, eClosing borrowers in the pilot scored higher on the key outcomes we measured (empowerment, understanding, and efficiency at closing) than borrowers experiencing paper closings.
- Early document delivery and review appeared to be associated with better consumer outcomes in the pilot findings.

Opportunities for further research exist and we encourage mortgage stakeholders to focus on the following areas:

- Addressing specific gaps in the pilot loan dataset (e.g. diversity of geography and institution type, sample size, borrower profiles, and lender cost data) to gain a more complete understanding of how eClosings affect a broader range of lenders and consumers.
- Leveraging and building on the CFPB's focus on empowerment, understanding, and efficiency as a foundation for further analysis and probing further on several questions the pilot was unable to answer.
  - Focusing on feelings of empowerment, understanding and efficiency, in addition to borrower satisfaction. The CFPB believes strongly that consumer satisfaction is not the sole measure of consumer outcomes, and that at times, it could even be misleading.
  - Further evaluating whether certain consumer segments (e.g. first-time borrowers, low- income borrowers, and well-educated borrowers) may benefit more from eClosing than others.

Though there may be additional research needed, industry participants exploring eClosing should consider implications from this pilot (both common challenges and key success factors) to inform their implementation plans.

- Feedback from pilot participants underscored that barriers to eClosing adoption are real, and more prominent than was initially thought. The participants, however, demonstrated that eClosing adoption was feasible even with a short implementation period.

- While not a definitive roadmap, lessons learned from participants emphasize several essential steps for successful and timely implementation of eClosing solutions.

The CFPB and other government partners should leverage this pilot to determine next steps, such as:

- Using the experiences of pilot participants to better inform eClosing implementation efforts and to dispel common myths around eClosing; and.

- Continuing to examine the consumer experience in the context of eClosing and be thoughtful about how we use data to do so.

Overall, the CFPB is encouraged by the results of this pilot and remains interested in further evaluating and encouraging more consumer-friendly closing processes, particularly after the marketplace has implemented the Closing Disclosure as part of the Know Before You Owe mortgage disclosure rule. [18]

[18] 78 Fr 79730 (Dec. 31, 2013), 80 FR 8767 (Feb. 19, 2015), and 80 FR 43911 (July 24, 2015).

2. Context & background

The CFPB's Know Before You Owe efforts focused on mortgages go beyond rulemaking. The Bureau has invested in understanding key functions in financial markets in order to understand the consumer experience in these markets and to serve as a catalyst for change. We do this by convening cross-market participants to discuss and drive consumer-centric improvements. The Bureau is consistently seeking to work with and learn from stakeholders in order to inform current and future initiatives. Where possible, the CFPB aims to be an active participant in dialogues around innovation, consumer behavior, and education, among other areas.

To most consumers (and to the CFPB), mortgages are much more than individual financial transactions; they are the gateway to a home, which is closely tied to a borrower's financial well-being, and the building of safe strong communities. Mortgages play a similarly fundamental role in our nation's economy, which we saw falter during the most recent financial crisis. Given the clear implications of a healthy mortgage market for the well-being of borrowers and the broader economy, the CFPB has led multiple initiatives to empower consumers during the home loan process. Mortgage closings, in particular, are lengthy and often stressful. Due to the significance of mortgage closings and the amount of information conveyed to consumers during closing, the Bureau has focused on the closing process as one piece of our broader efforts surrounding mortgage simplification, which have included the Know Before You Owe mortgage disclosure rule, *Your Home Loan Toolkit*, educational online tools such as *Owning a Home*, and related reports on the home mortgage shopping experience.

The CFPB's *Mortgage Closings Today* report published in April 2014 laid out the Bureau's research into consumer "pain points" with the mortgage closing process. As outlined in that report, consumer concerns include little time to review closing documents, the overwhelming volume of paperwork involved in the closing process, and the complexity of the closing documents. Based on this research, we articulated a vision for the mortgage closing process – an empowered, knowledgeable homebuyer experiencing a more efficient, consumer-friendly process, and we began evaluating options to achieve this vision.

Among potential solutions to improve the consumer experience, the CFPB chose to explore two in depth: (1) use of technology in closings (eClosings) and (2) reduction and simplification of the closing package. The Bureau's research found that other stakeholders own or regulate most closing documents, limiting opportunities for the CFPB to reduce the size of the closing package. Given the CFPB's limited jurisdiction with respect to closing documents, we have focused our efforts over the past year on studying eClosing as a possible solution to some of the pain points identified. Additional consumer-friendly features could offer the potential to reduce the complexity of the closing process, increase overall efficiencies, and reduce costs.

There are various ways that lenders offer eClosing to their consumers, ranging from electronic documents to fully-integrated mortgage closing portals and beyond. For some time, the conversations regarding eClosing adoption centered on "all or nothing" approaches with a large focus on the electronically signed Promissory Notes or "eNotes." Over the past few years, however, conversations have evolved toward increasingly embracing "hybrid" approaches to eClosing, with pieces of the closing process moved to electronic format and others remaining on paper. To be clear that when we talk about eClosing we do not refer to an electronically signed mortgage or "eNote;" we are simply talking about the increasing use of technology in the mortgage closing transaction. Hybrid eClosings are definitely within our vision of eClosing.

In 2014, the CFPB initiated an eClosing pilot program to source new information in order to evaluate the role of current solutions and potentially help spur innovations in the mortgage closing process. This pilot was not constructed to create additional mortgage rules but rather to learn and evaluate eClosings as an option for improving the closing process and to share our experience with stakeholders interested in implementing such process changes. To begin, the CFPB analyzed the market for eClosing solutions, evaluated the features and functionalities available in the marketplace, and used that research as a foundation for the pilot requirements, including potential functionalities for "advanced" solutions such as those that embed educational materials and tools into their electronic closing platforms.

The CFPB established and designed this eClosing pilot with several goals in mind. With respect to the consumer experience, the Bureau launched the pilot to explore if and how eClosing technologies can educate and begin to empower consumers and can simplify the closing process. The CFPB's *Mortgage Closings Today* report laid out the roadmap for engaging a subset of relevant stakeholders during this pilot. As stated at that time, by working with lenders and technology providers, the CFPB sought to encourage consumer-friendly features within existing eClosing platforms and to explore how lenders and vendors are currently overcoming barriers to eClosing implementation. Within the context of the larger mortgage market, the Bureau hopes that the pilot and its findings will spur action and innovation around mortgage closing solutions and further dialogue on the benefits, opportunities, and risks of eClosing.

This pilot would not have been possible without the 12 pilot participants, as well as the participation of other key participants (e.g. settlement agents, borrowers) in the closing process. We recognize the immense amount of dedication that the pilot required from each participant. Their preparation prior to and during the pilot, the data collected from their closing operations, and their comments and feedback after the pilot have allowed us to better understand the consumer experience and industry practices within mortgage closings. The CFPB would like to acknowledge and express our appreciation for the efforts of each participant throughout the pilot process.

Technology Vendors:

- Accenture Mortgage Cadence
- DocMagic, Inc.
- eLynx
- Pavaso, Inc.
- PeirsonPatterson, LLP

Lenders:

- Blanco National Bank
- Boeing Employees Credit Union
- Franklin First Financial, Ltd.
- Flagstar Bank
- Mountain America Credit Union
- Sierra Pacific Mortgage
- Universal American Mortgage Company

3. Methodology

3.1 Pilot participants

Following the release of *Mortgage Closings Today*, the CFPB issued a set of pilot guidelines and called for proposals from potential participants.[19] In this pilot, we defined a "participant" as a partnership between a technology vendor providing an eClosing platform[20] and a lender that has contracted with the vendor to use that platform in its closings.[21] We received applications from multiple lender-vendor partners, reviewed the proposals to ensure they aligned with our pilot expectations, and selected a subset of the applicants to participate in the pilot. We could only select a subset of applicants because we needed to limit the scope of the project. The pilot guidelines requested that each participant have capacity to collect the data needed to help the CFPB evaluate the use of eClosing features. The document also outlined the minimum technical functionality expected of participants. Beyond the required functionalities, we included a list of

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[19] Available at http://files.consumerfinance.gov/f/201404_cfpb_guidelines_eclosing-pilot.pdf

[20] In last year's *Mortgage Closings Today* report, we broadly defined eClosing as a mortgage closing that relies on technology for stakeholders to view and/or sign documents electronically. These technologies could include eDocuments and eDelivery (e.g. emailing a PDF or utilizing an electronic document portal), eSignatures, eNotarization, and eStorage (e.g. an eVault for document storage).

[21] Lenders with similar in-house eClosing solutions were also eligible for this pilot.

advanced features that could potentially further the Bureau's vision for mortgage closings.[22] We encouraged participants to develop and test a subset of these advanced features during the pilot.

3.2 Data sources

During the pilot, the CFPB collected information from four sources to support the analyses and findings described in this report. These sources include loan and process data from participants (both administrative data and settlement agent-reported data), survey data from consumers post-closing, follow-up interviews with consumers post-closing, and feedback interviews with lenders and technology providers.

3.2.1 Direct loan data

Pilot participants provided loan, demographic, and process data at the individual loan level for each reported transaction. The process data that we asked the companies to collect related to the key outcomes described above: understanding, efficiency and empowerment at closing. Some data points were direct administrative data, while others were reported by settlement agents after the closing meeting. These included, for example, whether the borrower accessed closing documents or educational materials online, the length of the closing meeting, and the number of questions asked by the borrower. In many cases, the ideal data points were not feasible due to the impracticality of manual collection or the resources needed to implement an automatic collection mechanism before pilot launch. In these instances, we worked with pilot participants to identify the closest proxy for certain data points. Due to operational challenges, the most difficult data points for consistent, accurate collection were related to cost, dates/times that events in the closing process occurred, and indicators of closing document review (both actual closing documents and CFPB educational materials). The final dataset included 3,292 loans, but some loans had specific data points missing due to challenges in collecting those data points.

[22] These included but were not limited to educational materials, customized document sequencing, expanded communication tools, acknowledgement of document receipt, and error detection functionality.

3.2.2 Consumer survey data

Borrowers who completed mortgage transactions during the pilot were invited to complete a follow-up survey. We achieved a survey response rate of 38% (1,254 total surveys completed, either online or by mail). The questions received by each borrower varied based on the closing that they experienced (e.g., paper vs. eClosing). In some cases, the survey questions mirrored a data point collected in the direct loan data, such as number of questions asked by the borrower. We asked for these data (1) to use as a primary measure if the data points provided by participants were inconsistent and (2) to test the difference between borrower and participant perceptions.

3.2.3 Consumer follow-up interviews

We invited a subset of borrowers who completed the survey to participate in an in-depth phone interview, which generally lasted 30 to 45 minutes. Interviewers asked the borrowers a series of questions about their mortgage closing experience, the format of their closing process, and, when applicable, how their most recent closing compared with prior closing experiences. While the discussions were open-ended, the interviewers asked the questions in a systematic and structured manner. In total, 60 interviews were conducted. Due to the limited sample size, we relied on these interviews to provide additional qualitative insight and support to the quantitative analysis in this report.

3.2.4 Pilot Participant follow-up interviews

At the conclusion of the pilot, we requested feedback from each lender and technology vendor. Participants each provided written feedback via email and joined a phone or in-person interview with CFPB staff. During these open discussions, we focused on soliciting key learnings from the participants about barriers and success factors for implementing eClosing, which we summarize in Chapter 5 of this report.

3.3 Segments

3.3.1 eClosings versus paper closings

We set out to conduct a randomized controlled trial to rigorously test the influence of technology and eClosing on the consumer experience. However, during the course of the pilot we realized that full randomization would be difficult for a variety of operational and institutional reasons; as a result, we were unable to fully randomize the treatment and control groups. The implications of these methodological issues are discussed more in the results section and throughout this report, and they contribute to the number of caveats we must use when interpreting the results of the pilot.

The core control and treatment groups used during the pilot focused on whether the closing was electronic or paper. Borrowers experienced one of three closing scenarios: paper closings, base eClosings, or advanced eClosings. Paper Closings were our control group of borrowers experiencing the traditional paper closing process practiced in the market today without the use of any electronic functionality during the closing meeting to sign closing documents.[23] One important caveat for the research design, however, is that consumers were not randomly assigned to the paper group, as consumers had to have the ability to "opt out" of eClosing. This means that there could be bias in the assignment of paper closings to consumers, and results should be interpreted accordingly. Base eClosings were the first core treatment group, which included eClosings similar to those performed prior to the pilot, without any of the additional features. The second core treatment group, advanced eClosings, had two requirements in addition to the base eClosing functionality: the borrower had to electronically receive the full closing document package at least three business days prior to closing, and the borrower had to have access to electronic educational resources directly in the lender's online closing portal for consumers to access while reviewing their documents. All of the pilot participants agreed to use educational materials prepared by the CFPB, thereby standardizing some of the materials presented to borrowers in the pilot. In both base and advanced eClosings, some of the documents may have been signed with paper and ink given challenges around eSignature and

[23] Some paper borrowers did receive a HUD-1 in PDF format via email prior to their closing

eNotarization, which is further discussed in Chapter 5. While we hoped to conduct true randomization of base and advanced eClosings to consumers at the individual level, this was sometimes difficult in practice.[24] As a result, some pilot participants randomized the assignment of base and advanced eClosing in different ways.

For many analyses, we were required to combine the base eClosing and advanced eClosing segments to ensure a sufficient sample size; comparisons of paper closings relative to combined eClosing segments formed the foundation for our analysis. In these cases, we refer to this segment as "eClosing borrowers." For any segments in this report with a sample size of fewer than 50 borrowers, the exact sample size is listed in a footnote. For other analyses, we consider the segments separately to isolate a more accurate comparison of eClosing versus paper closings (e.g. borrower experience). We separated the pilot groups into purchase and refinance segments (e.g., paper refinance vs. base eClosing refinance) or lender-specific segments (e.g., paper refinance at Lender A vs. base eClosing refinance at Lender A) when the differences between eClosing and paper varied noticeably across these segments. The specific segments that we compared for each piece of analysis are clearly articulated with the results in the Key Findings chapter of this report (Chapter 4).

3.3.2 Early document review and educational materials

Though our analysis focused on the core comparison of eClosing relative to paper, we also analyzed other scenarios to understand nuances in the data. For example, we created two comparison groups that isolated each of the additional components of the advanced eClosing: early document review and educational materials.

To analyze early document review in isolation, we divided borrowers into two categories without reference to whether they closed their loans electronically: "early review" and "no early review." Borrowers in the "no early review" segment included anyone who answered "no" to the survey question asking if they received the closing documents prior to the closing meeting. Even if the

[24] Randomization is the process of randomly assigning individuals to either the treatment group, which receives the intervention being tested, or the control condition, which does not. In this case, randomization would have been achieved if individuals (or broader entities, like settlement agents or bank branches) were randomly assigned to receive a paper closing, a base eClosing or an advanced eClosing.

lender indicated that the borrower received the documents in advance, we excluded them from this group because not remembering receipt strongly implies that they did not review them. Note, however, that by design, all borrowers in the advanced eClosing group should have received all of their documents at least three days before the closing meeting. Borrowers in the "early review" segment met two separate criteria. First, they answered "yes" to the two survey questions asking if they received the closing documents and reviewed them before they arrived at the closing meeting. We required a positive response to both questions because we wanted to isolate the borrowers that actually read the documents before the closing meeting.[25] Second, the lender-provided system data for the borrowers stated that they received the HUD-1 at least one calendar day before their closing.[26] Lenders provided data only on the HUD-1 delivery date, so borrowers may not have received other closing documents on that date. The exception is the group of advanced eClosing borrowers, who – by pilot definition – were required to receive the full closing package three days in advance. If survey and/or HUD-1 receipt data were not available for a particular borrower, he or she was excluded from both segments (n=228).

Unlike early review of documents, which lenders technically could have afforded to borrowers in any of the three pilot groups (paper, base eClosing, and advanced eClosing), the use of educational materials was available only to borrowers in the advanced eClosing group. Access to the materials was directly available via link in the closing platform for advanced eClosing borrowers.[27] The pilot offered three types of educational materials to these borrowers: (1) a closing checklist; (2) document summaries; and (3) AskCFPB questions. [28] The closing

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[25] Note: we focus on "early review" rather than "early delivery" because 93% of borrowers who said they received documents before the closing meeting also said that they reviewed the documents, and this statistic is consistent across pilot groups.

[26] Lenders were instructed to use the date that a document or link was emailed to the borrower. If the HUD-1 was mailed, they were instructed to provide the estimated date that the borrower received the document – not when it was mailed.

[27] It was also possible for base eClosing or paper borrowers to access the CFPB educational materials on their own since they are available on consumerfinance.gov, but we didn't ask them about whether they had done so?

[28] Borrowers at two lenders also had access to online chat, which provided a timely communication link to a lender representative. Because this chat feature was only available at two lenders, which resulted in a very small number of users, we excluded it from the analysis in this report.

checklist[29] provided borrowers with a bullet list of actions to complete before and during closing, including common errors to look out for and questions to ask. The document summaries provided a breakdown and concise explanation of six key mortgage documents (HUD-1, Promissory Note, Right to Cancel, TIL Disclosure, Initial Escrow Disclosure, and Security Instrument). The AskCFPB questions linked to the Bureau's database of frequently asked questions related to mortgage closings.[30] To analyze whether these educational materials influenced the consumer experience during the pilot, we compared two segments: borrowers who used any of the three types of CFPB materials, and borrowers who had access, but used none. This approach ensured that the sample size was large enough for analysis. Because the list of borrowers who used each individual tool largely overlapped with each other, we do not believe the results are less reliable than individual analyses of each type of educational material.

3.3.3 Borrower demographics

The final set of segments in the pilot analysis consists of demographic segments based on specific characteristics of the borrower. We analyzed three types of demographic groups: borrower experience, income, and education level. Pilot participants provided some of these data points (the rest were provided by borrowers on the survey). For borrower experience, we compared three segments: first-time homebuyers, experienced homebuyers, and refinancers. The transaction type (purchase vs. refinance) was reported by the financial institution, but the borrower reported whether he or she had completed a previous purchase transaction. For income, we collected the dollar amount from the financial institution that it used in the underwriting process. We then segmented the borrowers into four groups – low, moderate, middle, upper – based on the Census definitions of income classes, which compare the

[29] CFPB materials (checklist and document summaries) available at http://www.consumerfinance.gov/owning-a-home/

[30] CFPB questions available at http://www.consumerfinance.gov/askcfpb/search/?selected_facets=category_exact:mortgages&selected_facets=tag_exact:mortgage%20closing

individual's income to the median income in his or her county of residence.[31] For the data analysis, we combined low and moderate income borrowers to ensure a sufficient sample size for evaluation. For education, the borrower self-reported his or her highest level of education as one of five segments: graduate degree, four-year college degree, some college / other college degree, high school diploma, those with less than high school diploma. Similarly, we combined those borrowers with a high school diploma and less than a high school diploma to ensure a sufficient sample size for evaluation.

3.4 Outcomes

In this analysis of the closing process, we compared the relevant segments on three categories of measurement: empowerment, understanding, and efficiency. We chose these outcomes as markers of a successful closing process because they align with our mission to create an **empowered, knowledgeable borrower experiencing a more efficient, consumer-friendly process.**

We measured these outcomes based on a mix of the participant-provided data and borrower-reported survey data. From the survey data, we frequently utilized a set of statements with five-point response scales on which borrowers rated aspects of their closing experience from "strongly agree" to "strongly disagree." We presented data from these questions as a "net positive score", which was calculated as the difference between the percentage of those who responded positively and the percentage of those who responded negatively to a statement. Note that depending on the wording of the question, a "positive" response to some questions would be to agree (e.g., "I had a clear understanding of my rights as a homeowner"), while for other questions a "positive" response would be to disagree (e.g., "The closing process was confusing to me"). Regardless, a higher net positive score always corresponds with a more desirable borrower outcome. We also utilized **"composite scores"** in our analysis, which were averages of the net positive scores for four-six survey statements relating to the same outcome metric

[31] Low income = less than 50% of county median; moderate income = 50-80% of county median; middle income = 80-120% of county median; upper income = greater than 120% of county median. County median income was based on 2013 Census data. The benchmark income per county was for a family of four.

specific to this closing pilot –empowerment, understanding, or efficiency.[32] As an average of several net positive scores, these composite scores were also represented as net positive scores. The specific participant-provided and borrower-reported data points that we used for each outcome are outlined below.

3.4.1 Perception versus actual experience

For each of the three outcomes identified above, we collected data points that measured borrower perceptions and actual experiences. For example, we asked borrowers if they perceived unnecessary delays in the closing process and we collected data on how many days occurred between the original and actual closing dates. Given the difficulty of collecting some of the direct system data points, some analyses in this final report rely solely on borrower perceptions. Therefore, it is important to discuss the implications of judging outputs based on perceptions.

We recognized two concerns with relying on perceptions as outcome measures. First, perceptions naturally vary by individual; each borrower may have a different frame of reference for what is "efficient" or a "clear understanding." Second, it is possible that perceptions can influence the outcomes themselves. For example, if a borrower believes that she understands everything about her mortgage when she actually does not, she could be more likely to skim over details that a less-confident borrower would be more likely to read thoroughly, or she may be less likely to ask questions. This behavior could lead to less favorable outcomes in terms of the actual mortgage she signs.

For efficiency, a positive perception that is not based on actual efficiency improvements could still reduce stress and anxiety for the borrower, but it may not translate into actual time savings for the borrower or industry stakeholders. A consumer who feels empowered may be more likely be play a more active in their closings such as read documents before signing and ask more questions. These outcomes are estimates given that this study did not provide the CFPB with sufficient data to fully compare perception and reality. Our findings on consumer perceptions, however, have provided us with valuable insights into the consumer experiences under these various scenarios. In Chapter 6, we explored how these findings impact implications and next

[32] A complete list of the questions used for each composite score can be found in the Appendix.

steps for both the CFPB and stakeholders, in addition to highlighting how future research efforts can improve on this gap. In the rest of this section, we will outline the definition of each outcome and the perceived or actual data points utilized to evaluate them.

3.4.2 Empowerment

For this pilot, we examined empowerment through the borrower's ability and willingness to play an active role in the closing process. An empowered borrower should feel a level of control over the process and understand both his or her role, and the role of others involved in the process. We view this as a crucial outcome because an empowered consumer may be more likely to flag concerns or errors. In our analysis, we used a composite score for empowerment specific to this pilot based on statements from the borrower survey regarding feelings of control over the closing process, ability to play an active role, confidence in understanding documents, and comfort asking questions. We also relied on data for two specific actions that may signify an empowered, active borrower: asking questions and identifying errors, both before and during the closing meeting.[33]

3.4.3 Understanding

For the purposes of this pilot, the CFPB defined understanding as the borrower's level of comprehension about both mortgages in general and the details of his or her specific mortgage. This understanding includes four key topics: terms of the loan, HUD-1 costs, homeowner rights, and consequences of not fulfilling homeowner responsibilities. The CFPB believes that understanding is a key outcome because a more knowledgeable borrower is in a better position to make more informed financial decisions. In our analysis, we used composite scores for both perceived understanding and actual knowledge. We used the synonyms “understanding” and “knowledge” for these two scores to help the reader distinguish between them, but they both capture aspects of the same outcome. The perceived knowledge composite score was based on six statements from the borrower survey. One statement asked whether the closing process was

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[33] As noted and explained *supra* note 8, the definition of empowerment in closing used in this report refers to a set of measures defined solely for the purposes of the CFPB eClosing pilot and is not to be confused with the term “Financial Empowerment” or with the CFPB’s work through its Office of Financial Empowerment.

confusing, and the others asked whether the customer had a clear understanding of five specific topics (e.g., homeowner rights). The actual knowledge composite score was based on an eight-question quiz administered as part of the borrower survey. Three questions on this quiz asked about the borrower's specific mortgage; the remaining five questions were general facts about mortgages. Unlike the other composite scores, the actual knowledge score is presented in this report as a percentage out of 100 – not a net positive score. Because of this distinction, we did not directly compare the perceived understanding and actual knowledge scores to each other, either in absolute change or percentage change. We looked only at whether they moved in the same direction to evaluate if perceived understanding and actual knowledge were aligned.

3.4.4 Efficiency

The CFPB believes that efficiency is an important aspect of a successful mortgage closing for both the borrower and for industry. For the borrower, a mortgage closing can be a time-consuming and painful process. For various industry stakeholders, inefficiencies, such as delays and errors, can directly increase labor hours and, therefore, costs, which can be passed on to consumers. But it is important to note that "faster" does not always mean "better" in a closing process. We relied on participant-reported data for five aspects of actual efficiency: closing meeting delays, errors, document redraws, closing meeting length, and time when loan is cleared for closing (CTC), to actual closing. Due to time constraints and participant operational challenges, the CFPB was unable to collect consistent data on labor hours or cost savings from the participants. Therefore, we are unable to estimate the influence of eClosing on costs. With the significant overhead costs for any process change like eClosing implementation, it is difficult to accurately capture cost or labor information without a true longitudinal study. However, we were able to learn insights about perceived efficiency from the borrowers' perspective. We measured this perceived efficiency with a composite score that we created based on an average of four survey questions. We also asked borrowers a series of questions about feeling rushed in order to examine whether that could be a potential byproduct of increased efficiency on the industry side.

3.5 Key caveats

Several factors in our methodology and pilot design limit our ability to state causal relationships in our conclusions outlined in this report.

First, the timing of the pilot overlapped with a market refinance boom that limited the number of purchase transactions in the sample. Second, because we worked with real consumers closing real loans, and there are many players involved in a mortgage transaction, there were constraints in our ability to create a truly randomized controlled trial (as noted earlier). Third, a disproportionate share of pilot data came from a small number of lenders, with some unique characteristics that do not represent the broader population of borrowers in the U.S.[34] Accordingly; the key findings outlined below represent the population from this pilot and may not be statistically significant or generalizable to the broader population. We discuss these challenges in more detail below.

Given the requirements of the ESIGN Act[35], borrowers must agree (or opt-in) to an electronic process; therefore we could not randomly assign consumers into either an eClosing or paper closing. Some participants used what is called an "encouragement design," in which borrowers were randomly suggested to participate in a paper or electronic closing, but borrowers were always able to decide whether they actually wanted to choose the eClosing format. Furthermore, randomizing borrowers into base or advance eClosings even after they had opted-in to eClosings broadly was also challenging. For example, some participants did not have the functionality to operate base and advanced eClosing platforms simultaneously. These participant teams divided the pilot months to offer base eClosings for half of the pilot duration and advanced for the second half; this design was not randomized either, given potential different market trends in different months. The final related methodological impediment was that borrowers had different eClosing experiences at different lenders. Though there were only three distinct closing platforms, each pilot team utilized different supplemental technologies, user interfaces, support mechanisms, and processes to complete eClosings. Without sufficient sample sizes to allow us to account for variations between lenders providing different experiences, we are unable to determine the source of differences between base and advanced eClosing across lenders.

Second, the borrowers in the pilot sample were not representative of the national population completing mortgage closings. The majority – 70% – of loans in our pilot --was issued by two participants, and advanced eClosings are even more concentrated among those two participants.

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[35] 15 U.S.C. §§ 7001-7031.

At the beginning of the eClosing pilot, we conducted extensive demographic analysis to ensure the expected pilot population would mirror the broader mortgage market population in terms of loan type, race, ethnicity, gender, income, and geography. Due to the relative volume of mortgages being completed by participant lenders during the pilot period, some of these demographic indicators are slightly skewed compared to the overall mortgage market. The concentration among two participants most notably contributes to less racial/ethnic and geographic diversity among our borrower sample.

Third, the overall sample size of the study was too small for us to be able to detect statistical significance between groups for nearly all variables included in the pilot. As explained above, the pilot had ~3,300 loans and ~1,250 surveys. Since most of our outcomes were measured based on survey data, the latter number more accurately represents the sample size for most analysis. At the aggregate level of eClosings versus paper closings, this sample size was sufficient to show valuable comparisons. But the sample size per group in many cases was too small when we segmented the data by transaction type, lender, or demographic group. Additionally, we acknowledge the timing of the pilot was not ideal for obtaining a sample that would be required for us to detect statistically significant differences between groups. Though we knew market dynamics could impact our pilot, we did not anticipate the refinance boom at the onset of our pilot, which combined with increased resistance from settlement agents in purchase transactions and the seasonally low levels of purchase transactions in January and February, contributed to a smaller set of purchase data than expected.[36] Furthermore, some of the lenders included only refinance transactions for eClosings in the pilot. We avoided using any segment with fewer than 30 transactions in this report, and clearly labeled any segment containing fewer than 50 transactions with a footnote. Given these considerations and others, the analyses in this report communicate the results of this specific pilot, and we caution readers to utilize this report accordingly. In Chapter 6, we outline implications and next steps given these constraints, including specific recommendations for how future studies can supplement this pilot.

[36] Mortgage markets experienced a surge of refinance transactions starting in January 2015. According to Mortgage Bankers Association data, refinance applications increased 84% in the final three weeks of January from their 2014 average due to lower mortgage rates. This "refinance boom" contributed to additional transaction volume at all of the lenders in our pilot.

4. Key findings

This chapter will focus on the analysis of the pilot data, including loan data gathered from participating banks and technology vendors and data collected through surveys of borrowers and settlement agents. This chapter will present facts from the data analysis, but will avoid drawing conclusions about impact or implications. Potential implications of these observations for next steps by the CFPB and stakeholders will be further explored in the subsequent two chapters.

This chapter is organized into five sections: Section 4.1 summarizes the high-level findings for key comparisons between eClosings and paper closings. In this section, we focus on three main measures for consumers outlined in the Methodology chapter: empowerment, understanding, and efficiency during the closing process. Section 4.2 evaluates how two specific components of eClosing, early document review and the use of educational materials, may influence these outcomes. In this section, we isolate these two components to determine whether they relate to differences in our pilot measures of empowerment, understanding, and efficiency. Section 4.3 provides a deeper analysis into how the differences between eClosing and paper vary across transaction types and lenders within our pilot. Section 4.4 provides a similar analysis of how these differences vary across different demographic segments of borrowers. Finally, Section 4.5 flags potential risks to eClosing that surfaced during the data analysis; these risks will be important for stakeholders to consider as the use of electronic solutions expands. While we have summarized what we believe to be the key findings of these data, it is important to note the caveats behind the data. We present directional differences between pilot groups and demographic segments, but we are unable to comment on the relative size of the differences between scores and percentages because we did not conduct statistical significance testing. This study captured a number of data points across many borrower segments, so there is considerable detail that should be evaluated carefully before drawing any conclusions or next steps.[37]

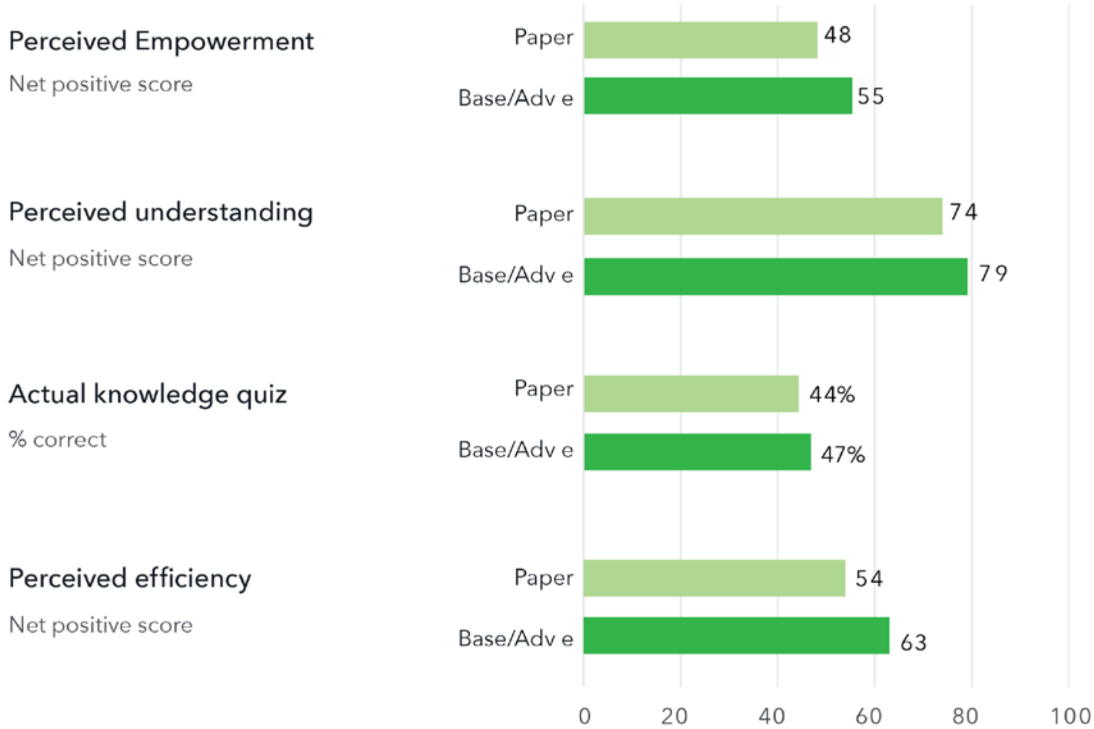
4.1 Summary analysis of eClosing versus paper closing

On average, eClosing borrowers in the pilot had higher scores than paper borrowers on the key outcomes that we measured, with the largest differences seen in our measures of empowerment and efficiency at closing.

At the highest level of analysis, we compared outcome data for all pilot participants that completed a paper closing against those who completed an eClosing (base or advanced). As Figure 1 shows below, the data indicated higher scores on our measures of empowerment, efficiency, understanding, and actual knowledge for the eClosing borrowers.

[37] Of the transactions included in our pilot, we have a robust body of data for refinance transactions and paper transactions, though the data for purchase transactions and purchase eClosings in particular is less robust.

FIGURE 1: ECLOSING VS. PAPER SUMMARY ANALYSIS[38,39]



For empowerment in the closing process, eClosing borrowers had an average net positive score of 55 versus 48 for paper borrowers, a 15% difference. Two key survey questions provided for most of the variation in pilot composite scores: "I felt that I had control over the process" and "I felt empowered to play an active role in my closing process." On average,

> "I'm submerged by paper. It's a great benefit to have the possibility to have electronic documents. It's less paper to deal with and to store."

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[38] As described in Methodology Section 3.4, "net positive" score is calculated by subtracting the percentage of respondents in the top "positive" boxes with the percentage of respondents in the "negative" two boxes. In some cases, "strongly agree" was the most positive response, but in others, "strongly disagree" was positive, depending on how the statement was worded. A higher net positive score always indicates a more positive borrower perception.

[39] Composite scores are also represented as net positive scores. We created these composites by averaging the net positive scores of 4-6 survey statements that related to the same outcome. See Methodology Section 3.4.

eClosing borrowers scored 11 points higher on both questions versus paper borrowers – a 35% and 21% difference, respectively. For efficiency, eClosing borrowers received an average composite score of 63 versus 54 for paper borrowers (17% change), with the question “There were delays in the closing process that could have been avoided” showing the largest difference, with a 52% higher net positive score for eClosing borrowers (42 vs. 28). For perceived understanding, the comparison between eClosing and paper was directionally similar, but not as pronounced. eClosing borrowers had an average composite score of 79 versus 74 for paper, which accounted for a 7% change. A larger difference existed on the specific question regarding level of confusion, which showed a 10-point higher average score for eClosing versus paper (a 19% difference). Finally, actual knowledge – showed the smallest, yet positive, difference between eClosing and paper. On the eight question quiz, eClosing borrowers averaged 47% correct versus 44% correct for paper borrowers.

During the interviews, different borrowers expressed support for both paper closings and eClosings, showing that personal preference was an important factor. For example, one eClosing borrower expressed her enthusiasm by saying, “I love electronic documents. I'm submerged by paper. It's a great benefit to have the possibility to have electronic documents. It's less paper to deal with and to store.” In contrast, a paper borrower was clear that he, “preferred to get them by mail, I'm old fashioned.”

4.2 Components of eClosing

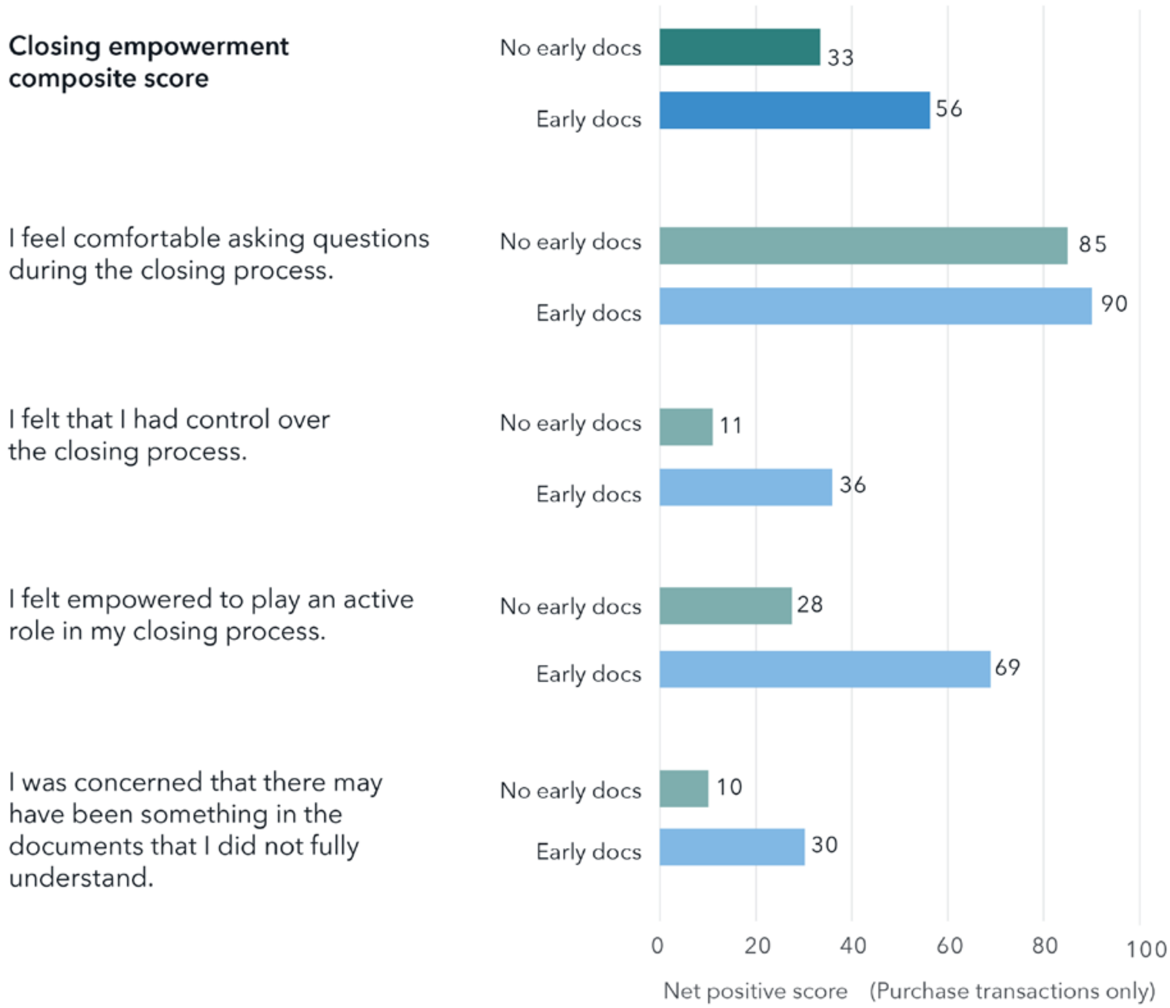
4.2.1 Early document review

Consumers who received and reviewed documents before the closing meeting reported feeling more empowered in the closing process, with higher levels of perceived understanding and efficiency, and had higher scores on the actual knowledge quiz relative to those who did not review documents before the meeting. In the pilot, early document review was more prevalent in eClosings relative to paper closings, perhaps due to documents being delivered early more consistently in eClosings than in paper closings.

As explained in the Methodology chapter (Chapter 3), we created two sub-segments within the pilot population to evaluate this topic: “early review” and “no early review.” Borrowers who reviewed closing documents early had higher scores on the pilot’s measure of empowerment for both purchase and refinance transactions as compared to those who did not review their documents early; this difference was more pronounced for purchases than for refinance transactions. In this pilot, refinance borrowers who reviewed their documents early had an average eClosing pilot empowerment composite score of 60 versus 49 for those with no early review (a 21% change). For purchases, the early review group scored 69% higher than the no early review group (33 vs. 56), bringing the average score for purchase transactions close to the average score for refinances. As shown in Figure 2 below, the differences on specific questions that measured the borrowers’ feelings of being empowered between early review and no early review borrowers were some of the largest of any segments that we analyzed in the pilot data, with some differences as great as 100% or 200%. One early review borrower noted during the interview that, “In previous times, I didn't have time to read everything, and I felt rushed. This time I could look at everything ahead of time.”

“In previous times, I didn't have time to read everything, and I felt rushed. This time I could look at everything ahead of time.”

FIGURE 2: EARLY DOCUMENT REVIEW AND BORROWER EMPOWERMENT: PURCHASES.[40]



The data on actual knowledge and perceived understanding were consistent with the eClosing pilot empowerment composite score. On the actual knowledge questions, early review borrowers scored higher on average than those in the no early review segment. The difference was largest for purchases, in which the score for early review was 48% versus 41% for no early review, compared to 47% versus 44% for refinances. There were multiple questions that contributed to

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[40] See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

this variation, but the largest difference in the percentage of correct answers was on "What is the document that you sign during the closing process that gives the bank the right to take away your house if you do not meet your responsibilities as a mortgage-holder and homeowner?" For purchases, the percentage of correct answers was 57% for early review borrowers and 40% for no early review. Similarly, early review borrowers who completed refinances got the question correct 55% of the time, compared to 41% for no early review refinancers. These absolute differences (17 points and 14 points, respectively), were larger than the results from any other segments we analyzed. In addition to actual knowledge, the trend for perceived understanding was also positive for early review, with larger differences observed in purchase transactions. On the central question about whether the closing process was confusing, early review purchasers reported an average net positive score of 58 versus 32 for no early review, an 82% difference. For refinances, the early review segment had an average score of 72 versus 61 for no early review borrowers (18% higher). The rest of the perceived understanding questions, which ask whether the borrower had a clear understanding of five specific topics,[41] all showed higher net positive scores on average for early review versus no early review in purchases and refinances. One early review borrower explained, "English is not my husband's first language ...he got his copy [of the closing documents], and there were technical terms he didn't understand. So it was great to have that time to go through them with him online and help him understand. This way he and I could basically go over it twice. That was a big help."

In addition to our measures of understanding and empowerment during the closing process, transactions with early document review showed higher indicators of efficiency. The data indicated differences in two core metrics of efficiency. First, the closing meeting was on average shorter for the early review borrowers. The percentage of refinance meetings that took less than 30 minutes was 56% for early review and 31% for no early review. Similarly, the percentage of purchase closing meetings that took less than 30 minutes was 36% for early review and 11% for no early review. Second, errors were more likely to be identified before the closing versus during the closing for loans where the borrowers received and reviewed the documents early.[42] For

[41]Those were: The terms of my loan and how my payments are determined; my rights as a homeowner; what the consequences were if I failed to fulfill the responsibilities of my mortgage; the final closing costs on my HUD-1 Settlement Statement; and why the costs outlined in my initial GFE were different than my final closing costs.

[42] Note that this data point relies on errors reported by the borrowers.

early review loans in which the borrower indicated that an error was identified, 79% of the borrowers reported identifying errors before closing and 49% reported identifying errors during closing.[43] In contrast, of the borrowers who identified errors and did not review documents early, only 58% identified an error before closing, but 66% identified during closing. These measures of actual efficiency largely aligned with borrower perceptions of efficiency, which were also higher for eClosing borrowers than paper borrowers in the pilot. In the purchase transactions we analyzed, the segments had a 54% difference in perceived efficiency composite score (57 vs. 37), compared to a 16% difference for refinances (65 vs. 57). It is important to note that despite this decrease in average time, early review borrowers were less likely to say that they felt rushed in both purchases and refinances.

Since these borrowers had the documents early, the "closing" effectively started days before the "closing meeting." Furthermore, by receiving and reviewing documents early, borrowers have more of an opportunity to identify errors before the closing meeting, which could reduce delays in the transaction. As one borrower noted, "I can't think of any better way [to prepare for closing] than giving people a chance to read through [closing documents] before …so there are no surprises."

> "I can't think of any better way [to prepare for closing] than giving people a chance to read through [closing documents] before …so there are no surprises."

After identifying the potential benefits of early document review, we assessed the likelihood of early review in eClosings versus paper closings. We found that in the pilot, early document review was more prevalent in eClosings than in paper closings, due to the fact that documents were delivered early more consistently in eClosings than in paper closings.[44] Specifically, we compared the incidence of early document review in both the base eClosing and paper closing groups.[45] For base eClosings, the pilot set no requirement for early document delivery, but 81%

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[43] Percentages add up to more than 100% because some loans had errors identified before and during closing.

[44] Note that the Know Before You Owe mortgage disclosure rule effective October 3, 2015 mandates that the Closing Disclosure be delivered three days in advanced, not the complete set of closing documents.

[45] Only 85% of the advanced eClosing group was actually in the early review segment, indicating that the remaining 15% of the borrowers did not recall receiving the documents and/or did not review them. The analysis in this

of those borrowers were still in the early review segment. In comparison, only 24% of paper borrowers were in the early review segment.[46]

4.2.2 Use of educational materials

Most pilot borrowers with access to educational materials reported that they used these materials and reported higher feelings of empowerment and perceived understanding and lower actual knowledge scores. Borrowers who used educational materials also had fewer years of formal of education.

As outlined in the Methodology chapter (Chapter 3), advanced eClosing borrowers in the pilot had access to three sets of CFPB educational materials. Many borrowers self-reported using one or more of these materials during the pilot survey. Among all borrowers who had access to the educational materials, the closing checklist had the highest use rate, with 71% of borrowers who had access to it reporting that they used it; borrowers who had access to document summaries and AskCFPB questions reported using them at rates of 69% and 47%, respectively. We also asked borrowers to rate the usefulness of each piece of educational material on a scale from 1 (not useful at all) to 5 (extremely useful). The document summaries received the highest percentage of 4s and 5s at 74%, followed by 69% for the closing checklist and 53% for AskCFPB questions. One advance eClosing borrower who used the summary said that “it was very clear and broken down and well explained. It was very helpful.”

To analyze whether these education materials in the pilot influenced borrowers’ experiences, we compared two segments: borrowers who used any of the three materials and borrowers who had access, but used none. When we compared these two segments on the pilot measures of empowerment, the data indicated that borrowers who used the materials scored higher, with an average composite score of 55 compared to 45 for borrowers who did not use materials. It appeared that the statement most relevant to borrowers’ perceptions of empowerment was “I felt empowered to play an active role in my closing process,” which had a 48% higher net

paragraph excludes the 280 loans in which the borrowers stated that they did receive and review documents, but the HUD-1 data was available.

[46] The comparison with the advanced eClosing group is not included because the pilot guidelines required that lenders provide the full closing package to advanced eClosing borrowers at least three days in advance.

positive score for borrowers who used materials than for those who didn’t. The data indicated similar trends for perceived understanding. The average composite score for the pilot group that used the educational materials was 80, versus 67 for those who chose not to use the materials. The specific statement that showed the largest difference between the groups was “I had a clear understanding of why the costs outlined in my initial GFE were different than my final closing costs.” For that statement, the borrowers who used the materials had a 50% higher net positive score than those who did not use the materials.

Unlike empowerment and perceived understanding, scores on the quiz assessing actual knowledge were lower on average for borrowers who chose to use the materials. Those borrowers averaged a 46% on the actual knowledge quiz versus a 50% for the borrowers who did not use the materials. The data showed that borrowers with lower education levels (some college or less versus four-year degree or graduate degree) were also the borrowers who were more likely to use each of the educational materials. This further underscores the importance of the Bureau's commitment to providing educational materials that are more accessible and understandable for a greater percentage of the population.

4.3 Detailed analysis of eClosing versus paper

4.3.1 Empowerment, understanding & actual knowledge during the closing process

In pilot purchase transactions, eClosing borrowers scored higher on the pilot measures of empowerment, perceived understanding, and actual knowledge than paper borrowers in our pilot, but results in refinance transactions differed across lenders.

Purchase transactions

As explained in the Section 4.1 summary analysis, eClosing borrowers scored higher on average on a number of our measures of empowerment, understanding, and efficiency at closing. But it is important to note the nuances within the data. The first distinction we evaluated was how the outcomes varied across the two transaction types, purchases and refinances.

To analyze purchase transactions, we combined base and advanced eClosings because the sample size for each individual group was too small for us to analyze meaningfully.[47] On perceptions of empowerment, the pilot eClosing borrowers had a higher average composite score than the paper borrowers by 40% (58 vs. 42). This difference was largely driven by the fact that pilot eClosing borrowers reported feeling more control over the process and playing a more active role. Regarding feelings of control over the process, the net positive score for eClosing borrowers was more than 150% larger than the score for paper borrowers (51 vs. 19). On borrowers' ability to play an active role, eClosing borrowers had a net positive score of 79, versus 41 for paper borrowers, a difference of more than 90%.

On average, eClosing borrowers scored similarly to paper borrowers on both actual knowledge (46% eClosing vs. 44% paper) and perceived understanding (74% eClosing vs. 71% paper). Looking more closely at specific questions, eClosing borrowers were more likely than paper borrowers to state that they had a clear understanding of specific topics. But on the question asking whether the closing process was confusing, eClosing borrowers thought the process was more confusing, with a net positive score of 36, compared with 45 for paper borrowers. This pattern of results for borrowers with purchase transactions should be further investigated to understand potential sources of increased perceived confusion for eClosing borrowers.

Refinance transactions

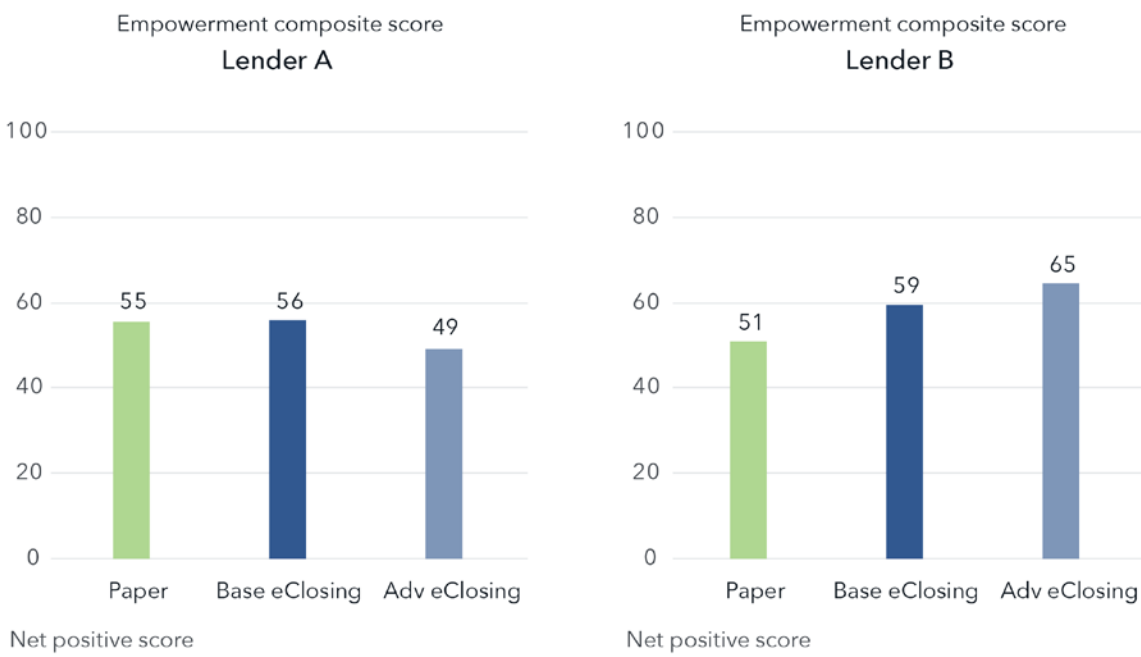
We were able to explore more detail in the data for refinance transactions than for purchase transactions for two reasons. First, the sample sizes for refinance transactions were sufficient to separate base eClosing and advanced eClosing, and in some cases, the two groups showed different trends.

Across lenders, base eClosing borrowers had slightly higher average pilot composite scores on empowerment than the paper borrowers (58 vs. 55), but the advanced eClosing borrowers scored lower (52) than borrowers in the paper closing group. While this variation is small; when we look more closely at the question of feeling control over the closing process, we see that base eClosing borrowers scored 7% higher than paper borrowers and advanced eClosing borrowers

[47] N=47 for base/advanced eClosing purchases; large majority of eClosing purchases come from one lender (Lender B) since Lender A only completed eClosings for refinance transactions

scored 16% lower than paper borrowers. When isolating the individual lenders, we identify the data that explains this variation. As shown in Figure 3 below, borrowers from Lender B had higher average scores on the empowerment composite for both base eClosing and advanced eClosing, while borrowers from Lender A had similar average scores for base eClosing as compared to paper, but advanced eClosing borrowers had lower average scores.

FIGURE 3: PAPER VS. ECLOSING FOR 2 LENDERS: BORROWER EMPOWERMENT.[48]



The disparate results between Lender A and Lender B on advanced eClosing also occurred on the perceived understanding metrics. The average composite score for base eClosing borrowers was the highest at 82, followed by a score of 77 for both the paper and advanced eClosing borrowers. This data point showed directionally different results across lenders. Borrowers from Lender A had the highest average composite score for base eClosing (82), followed by paper (77) and advanced eClosing (75). Borrowers from Lender B had the highest average composite score

[48] See Methodology Section 3.4 for “net positive score” and “composite score” calculation methodology.

for advanced eClosing (86), followed by base eClosing (79) and paper (75). We further explore the possible implications of this finding in Section 4.5.

Various factors may have influenced these results including differences between individual settlement agents, degree of lender experience with eClosing, how busy the office was at the time, the type of borrower that refinanced during that month, or potential variations in the borrower experience[49]. Advanced eClosings was also a new untested process these pilot teams were implementing, while they had been doing base eClosings for several years up to this point. Summary statistics did not identify links to explain these different results, due to data constraints in the pilot. Accordingly, we were unable to evaluate what factors may have driven borrowers in the advanced eClosing group to score lower on our measures of empowerment and understanding than those in the base eClosing group. Further research should be conducted to isolate and test these and similar factors.

4.3.2 Efficiency

eClosing transactions in the pilot exhibited shorter closing meetings and earlier document delivery, which matched higher consumer perceptions of efficiency.

The final outcome that we analyzed at a detailed level was process efficiency, looking at both process data (from both lender administrative data and settlement agent-reported surveys) and borrower perceptions.

We collected process data from lenders to evaluate five different aspects of efficiency: closing meeting delays, errors, document redraws, closing meeting length, and time from clear-to -close (CTC) to actual closing.[50] The first three data points – delays, errors, and redraws – did not yield notable variation between paper closings and eClosings, but the results showed interesting

[49] For example, at one lender, the borrower and settlement agent flipped through a paper copy of the documents while the borrower signed electronically. At other lenders, the borrowers viewed only electronic versions of the documents signed electronically.

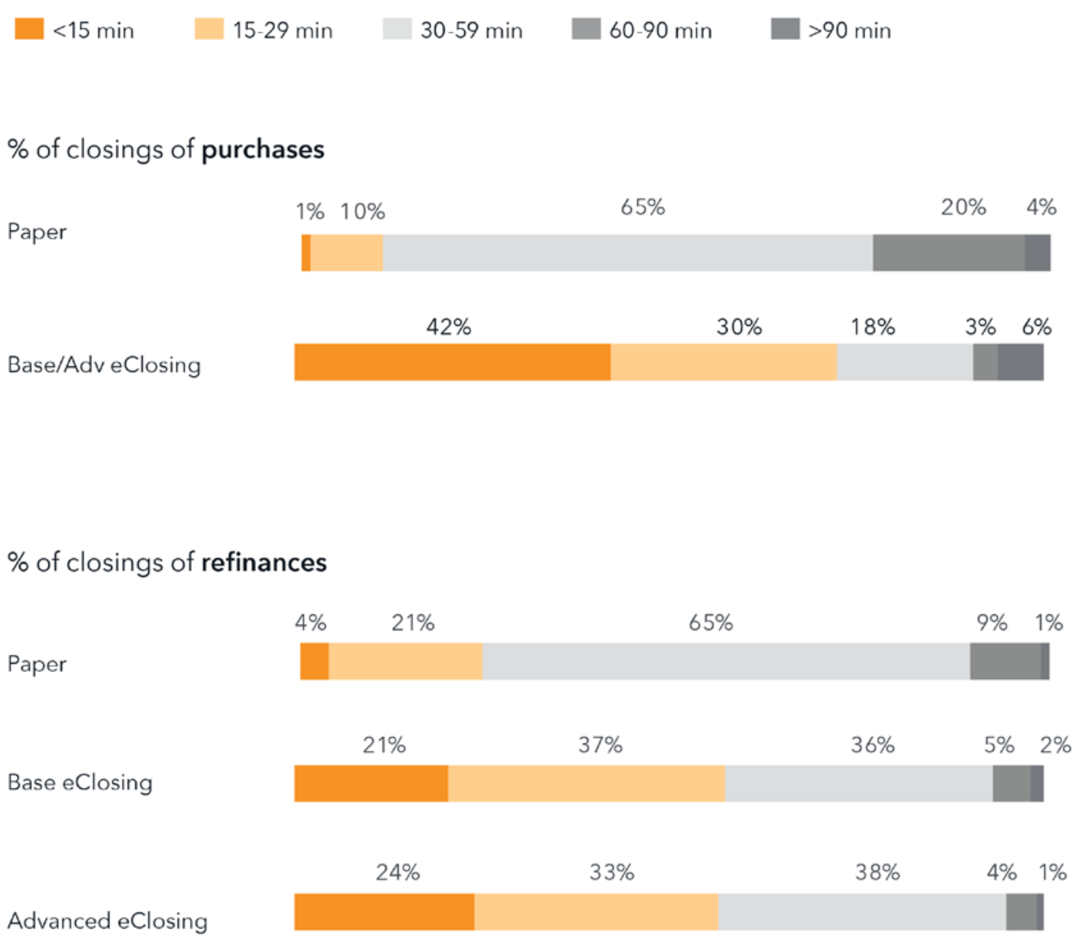
[50] Clear to close is the point at which the lender has approved necessary loan documentation for the borrower to schedule the closing.

findings for both closing meeting length and time from when documents were cleared to close to the actual closing.

> "I think having the documents ahead of time and being able to review them sped up the physical portion of the closing. People had said it takes 2 hours and I was literally in and out of there in 30 minutes."

The length of the closing meeting was shorter on average in eClosings than in paper closings, as noted in Figure 4 below. This can be attributed to consumers having more time to review documents ahead of time and ask questions. One eClosing borrower explained that, "I think having the documents ahead of time and being able to review them sped up the physical portion of the closing. People had said it takes 2 hours and I was literally in and out of there in 30 minutes." Shorter closing meetings can be beneficial to both consumers and industry, but they can also be detrimental if the practice leads to the consumer feeling rushed or if it causes the borrower to miss essential information. During the pilot, we also asked borrowers a survey question about whether they felt rushed during the closing process. Borrowers in the eClosing groups often indicated that they did not feel rushed in their closing meetings: eClosing borrowers had around the same average net positive score as those in the paper groups for both transaction types (66 for refinance, 57 for purchase). It appears that in many cases, pilot participants were able to create an eClosing process and customer experience that successfully decreased the average length of the meeting without having borrowers feel more rushed. One reason that borrowers may not have felt rushed was because they had a longer period of time to review their closing documents in eClosing transactions than with paper.

FIGURE 4: CLOSING MEETING DURATION FOR PAPER VS. ECLOSING.



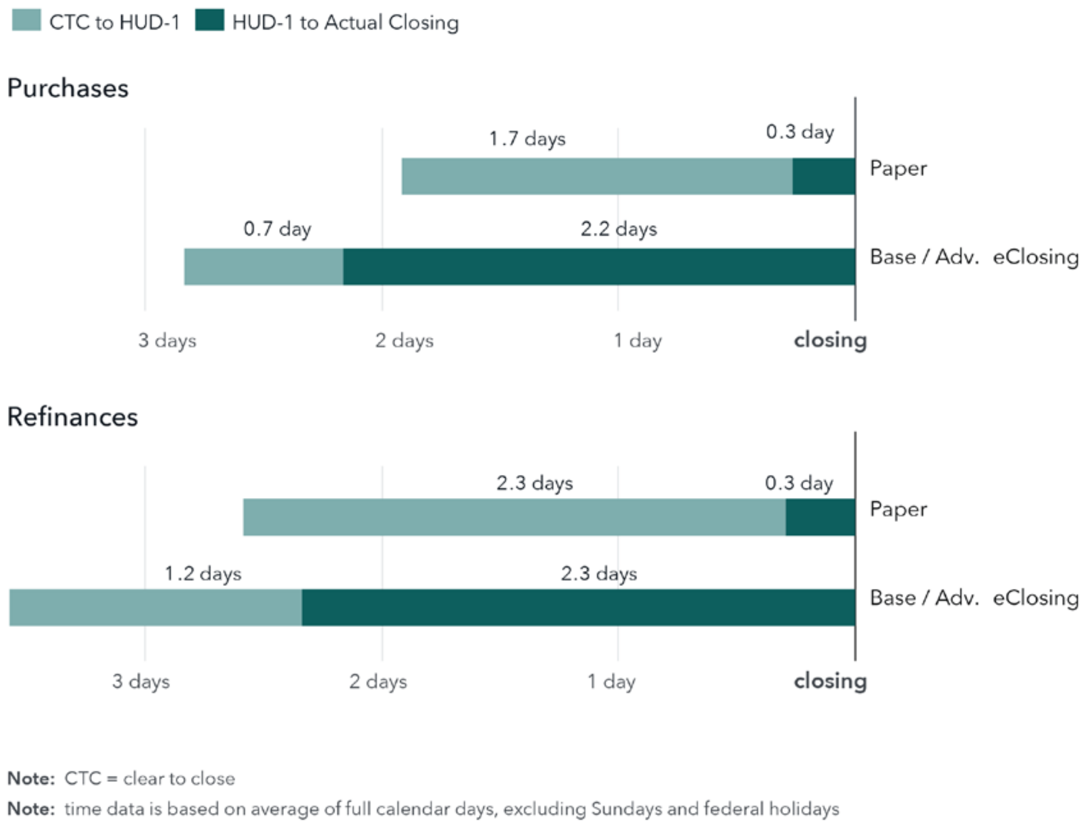
We analyzed how many days it took each loan in the pilot to go from cleared to close to the actual closing meeting. We divided this time into two periods – the cleared to close date to the HUD-1 delivery and the HUD-1 delivery date to actual closing.[51] We used HUD-1 delivery as a proxy for consumers receiving all of the closing documents, but in some cases they may have only received the HUD-1 on that date. The graph below (Figure 5) shows the average number of

[51] Note that the HUD-1 will be replaced by the Closing Disclosure as of October 3, 2015, in compliance with the Know Before You Owe mortgage disclosure rule.

business days for each period in paper closings and eClosings, broken out by purchase and refinance.[52] For both purchases and refinances, eClosings took about one less business day to get from cleared to close to document delivery. Additionally, borrowers had the documents about two business days longer on average for eClosing than paper transactions. Starting on the effective date for the Know Before You Owe mortgage disclosure rule, consumers will be given three business days to review the Closing Disclosure form for all transactions. During the pilot, only advanced eClosings were required to send the HUD-1 (and all other documents) three business days before closing. But as mentioned in the previous chapter, early delivery was still common in base eClosings during the pilot. In eClosings, borrowers had more time to review the documents at home if they chose to do so, and pilot lenders made up for about 50% of that time by moving from cleared to close to document delivery more quickly.

[52] Averages were calculated using full calendar days for each loan. Weekends and federal holidays were excluded.

FIGURE 5: TIMELINE FROM CLEAR-TO-CLOSE TO ACTUAL CLOSING.[53]



Consumers' views on perceived efficiency seemed to reinforce the positive indicators of process efficiency described above, particularly for purchase transactions. Purchase borrowers who completed a base or advanced eClosing had an average perceived efficiency composite score of 49, versus 45 for paper borrowers. On average, eClosing borrowers were more likely to agree that the process for signing the documents was convenient and the process did not take longer than expected. One eClosing borrower stated that the process seemed "more efficient [and] less time consuming, mostly because of electronic documents…I felt like it went a lot smoother." But

[53] Time data is based on an average (mean) of full calendar days, excluding Sundays and federal holidays.

eClosing borrowers were more likely than paper borrowers to state that there were delays in the process that could have been avoided, such as document errors.

4.4 Demographic analysis

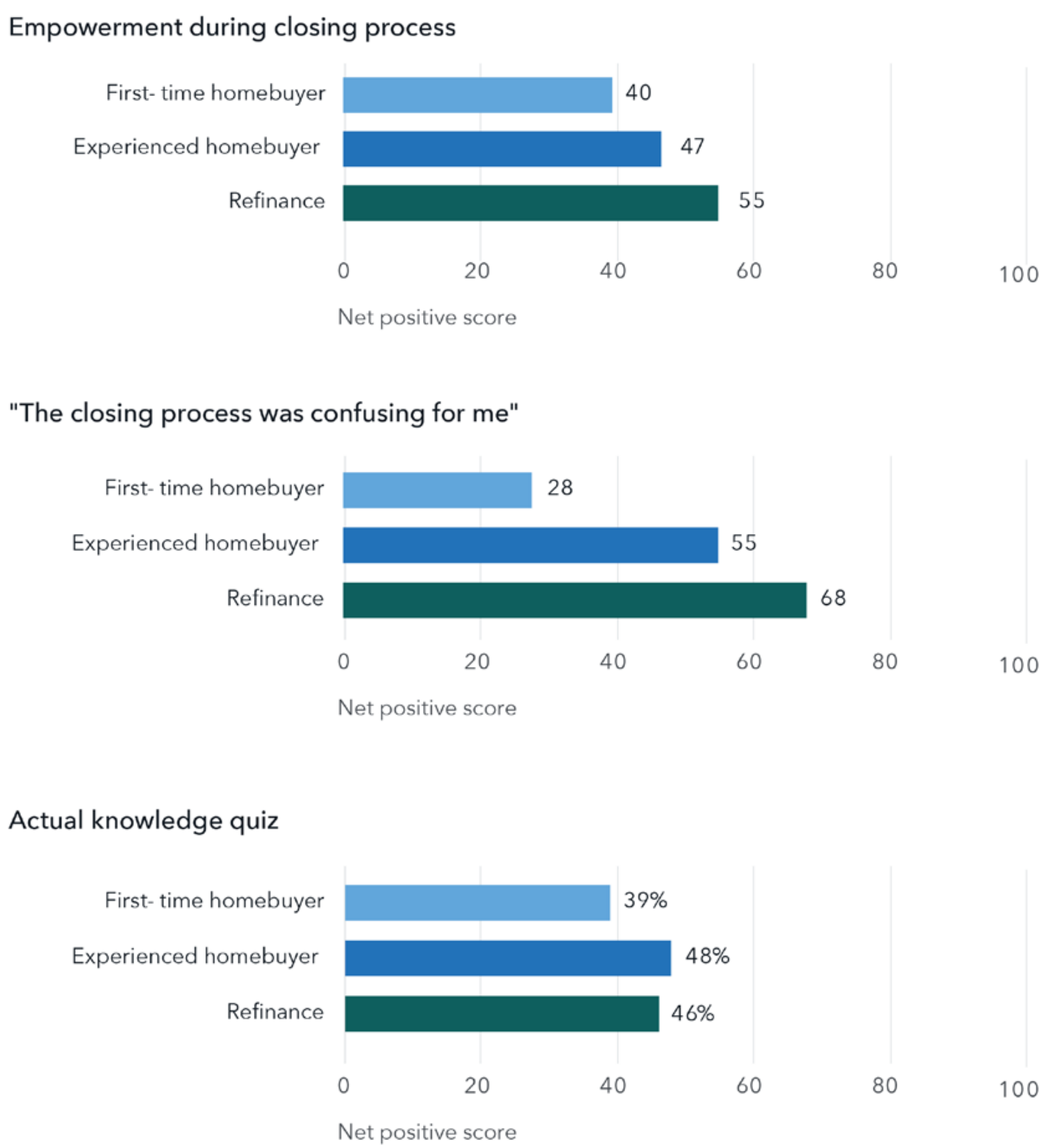
First-time homebuyers, low/moderate income borrowers and borrowers with the most years of formal education all had the largest positive gains between paper and eClosing, yet all scored relatively low on our measures of understanding and perceived empowerment.

In addition to evaluating the differences between eClosing and paper closing for the full pilot population, we also assessed the variation across different demographic groups. In the aforementioned Methodology chapter, we outlined the three groups that yielded notable results: borrower experience, income, and education.

4.4.1 First-time homebuyers

The first segment we looked at was first-time homebuyers: borrowers who completed their first purchase transaction during the pilot. As expected, this population skewed younger (67% under 35 vs. 16% for experienced homebuyers) and had lower average incomes than experienced homebuyers (29% were in the upper income vs. 61% for experienced homebuyers).

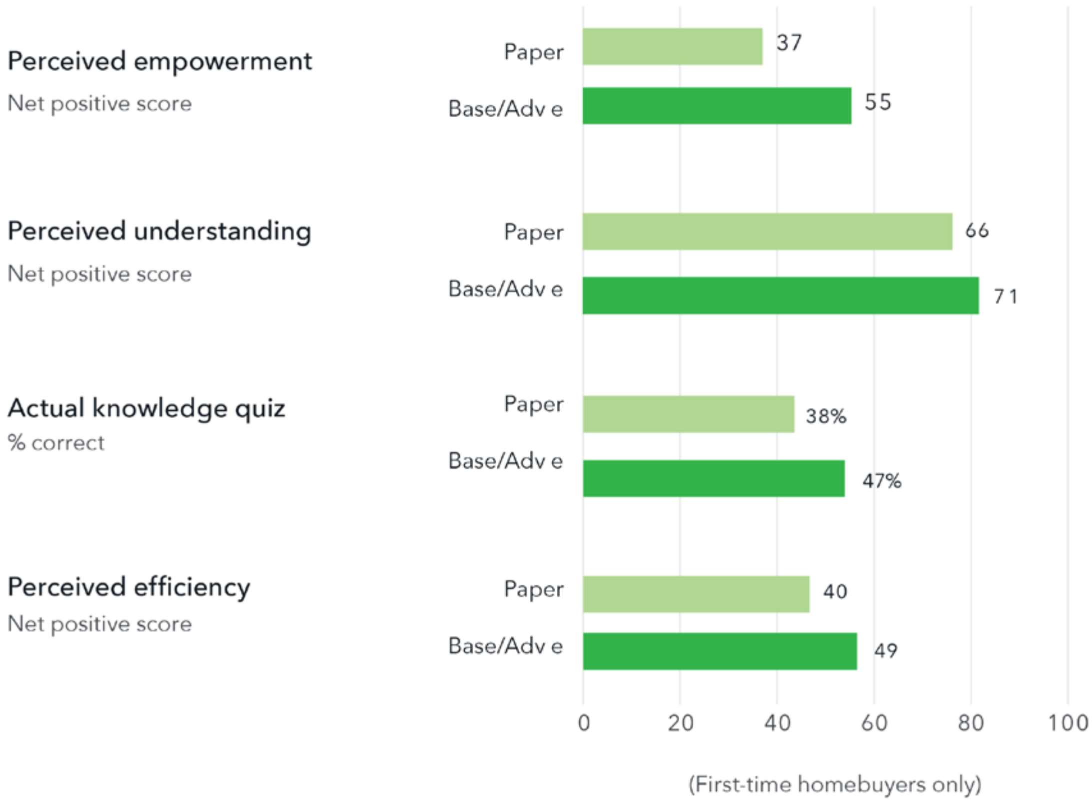
FIGURE 6: KEY OUTCOMES BY BORROWER EXPERIENCE.[54]



[54] See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

On average, first-time homebuyers scored lower than experienced homebuyers on our measures of perceived empowerment and understanding, and actual knowledge (as shown above in Figure 6). In some cases, such as with actual knowledge scores, there was a larger difference between first-time homebuyers and both groups with home buying experience, indicating that it was the experience that may have been the important factor. In other cases, such as with our measure of empowerment in the closing process, there were similar differences between all three segments, indicating that experience and transaction type were both factors that influenced the above outcome measures. After examining the pilot empowerment score, we saw that experience and transaction type may have influenced question responses in different ways. For example, it appears that experience was more of a factor in borrowers' level of concern with regard to not understanding the documents (eight for first-time homebuyers, 27 for experienced homebuyers, 30 for refinancers). On the other hand, the type of transaction – purchase or refinance – may have been more important with regard to borrower's perceptions of empowerment to play an active role in the closing (42 for first-time homebuyers, 48 for experienced homebuyers, 62 for refinancers).

FIGURE 7: PAPER VS. ECLOSING FOR FIRST-TIME HOMEBUYERS.[55]



Note: Within first-time buyers, n=23 for base/advanced eClosing

When we analyzed the difference between eClosing and paper borrowers for each of the three borrower experience segments, first-time homebuyers showed the largest differences across our key measures (see Figure 7).[56] For first-time homebuyers, there was a nine-point difference in average actual knowledge scores between those experiencing paper closings and eClosings, while the average actual knowledge scores for experienced homebuyers and refinancers only differed by three and two point differences, respectively. Average empowerment scores also differed

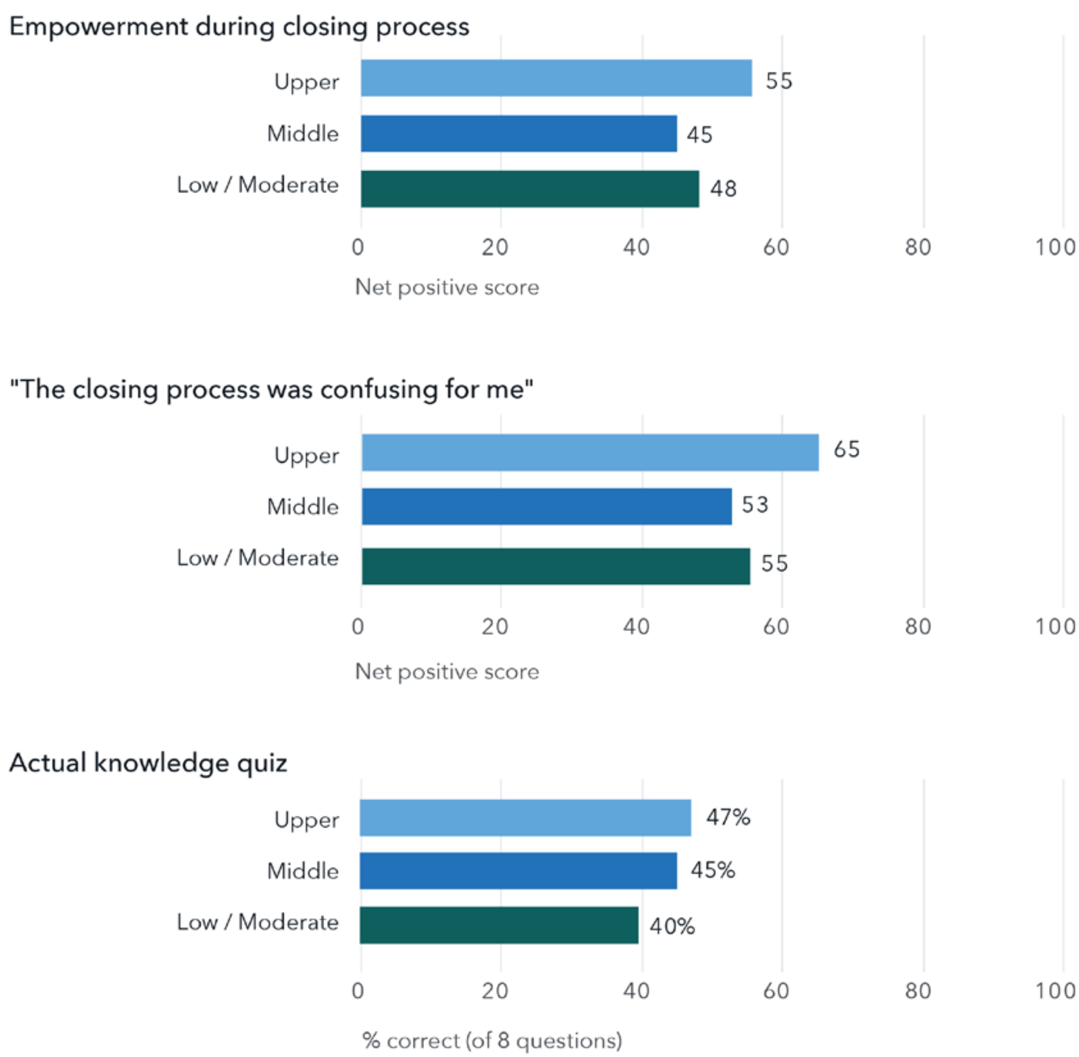
[55] See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

[56] For first-time homebuyers, eClosing n = 23; for experienced homebuyers, eClosing n = 24

between paper closings and eClosings for both first-time homebuyers (49%) and experienced homebuyers (36%), while refinancers' scores were similar for both types of closings.

4.4.2 Low/moderate income borrowers

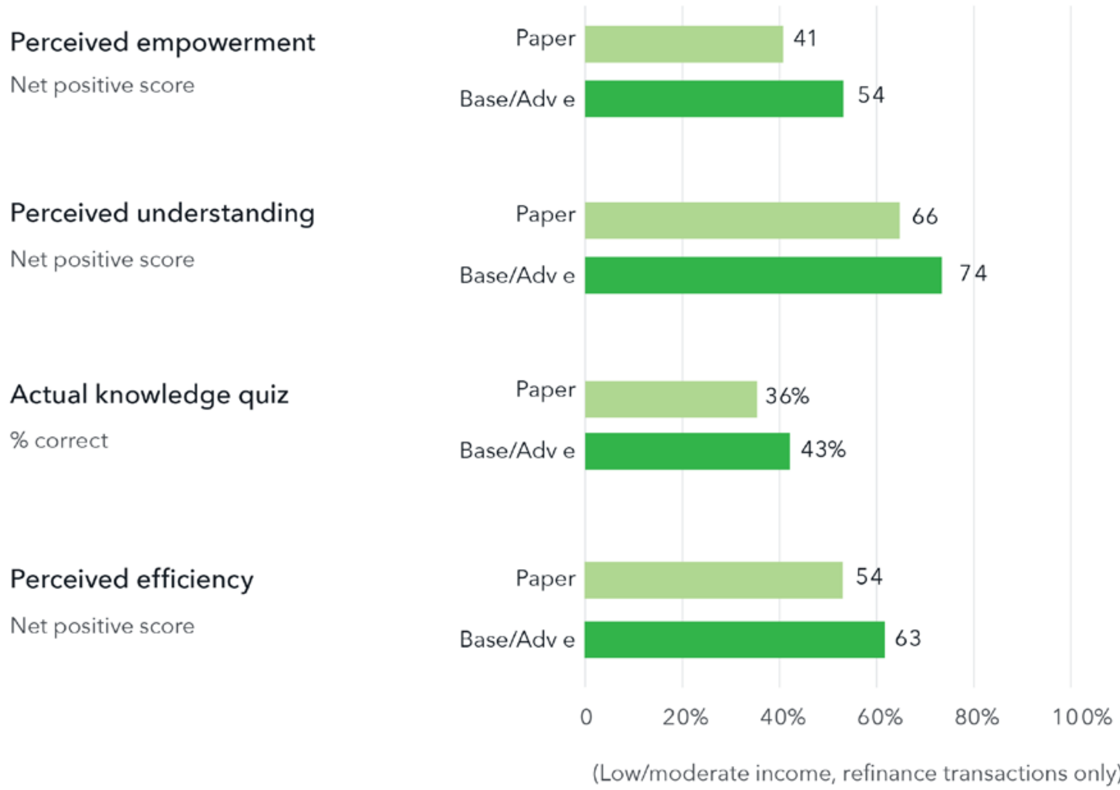
FIGURE 8: KEY OUTCOMES BY BORROWER INCOME.[57]



[57] See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

The second demographic segment we examined was low/moderate income borrowers. On average, these borrowers scored the lowest of the income groups on the quiz assessing actual knowledge compared to middle-income and upper-income borrowers, as shown in Figure 8 above. The largest average differences were on questions specifically related to costs, such as “Which of the following best describes a pre-payment penalty?” (30% correct for low/moderate income vs. 42% for middle-income and 47% for upper-income) and “Which of the following best describes a fixed-rate mortgage…?” (50% correct for low/moderate income vs. 63% for middle-income and 64% for upper-income). On average, low/moderate income borrowers also reported higher levels of confusion than upper-income borrowers (55 vs. 65) in response to the statement “The closing process was confusing for me,” but slightly lower levels of confusion than middle-income borrowers (55 vs. 53). We also saw differences between income groups on questions dealing with their perceived understanding of costs, such as the statement “I had a clear understanding of why the costs outlined in my initial GFE were different than my closing costs.” (58 for low/moderate income, 66 for middle-income, and 72 for high-income).

FIGURE 9: PAPER VS. ECLOSING FOR LOW/MODERATE INCOME BORROWERS.[58,59]



Within refinance transactions, we also observed differences between low/moderate income borrowers experiencing a paper closing versus an eClosing that were not as pronounced for other income groups. (See Figure 9). For example, low/moderate income borrowers who completed an eClosing scored seven points higher than paper closing borrowers on the actual knowledge quiz. Middle- and upper-income borrowers showed little or no variation on the same data point and upper income borrowers showed a smaller difference. With low/moderate income borrowers, the pilot data showed a 12% increase in perceived understanding with those

[58] To address sample size limitations and differences between transaction types, these statistics consider only refinance transactions.

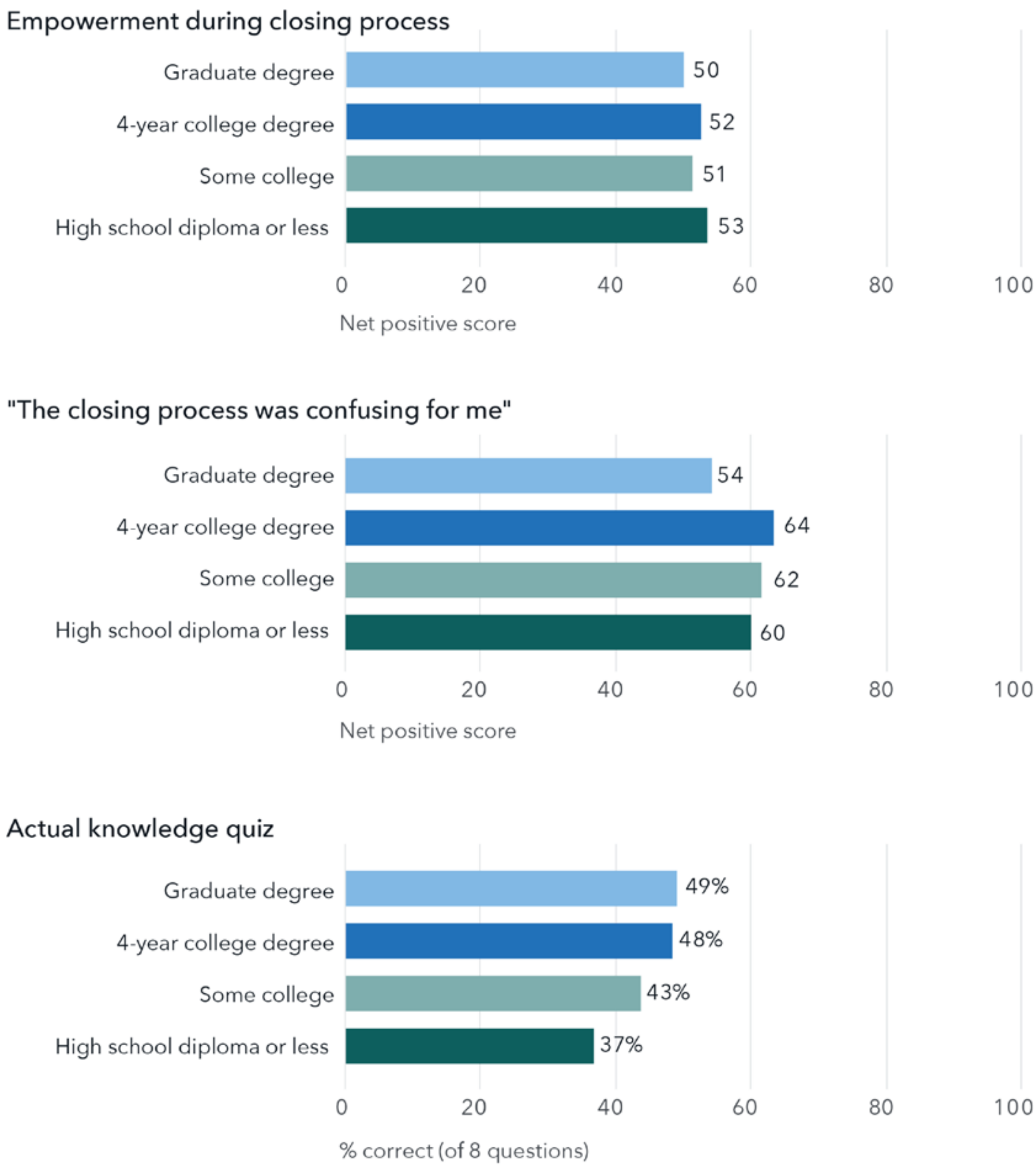
[59] See Methodology Section 3.4 for “net positive score” and “composite score” calculation methodology.

doing an eClosing going from a composite score of 66 to 74. One low income borrower noted that she “probably [would have read paper documents] a little less because I don’t like reading but if it’s on the electronic side it's more fun, more accessible....” Similarly, low/moderate income borrowers experiencing eClosing refinances on average scored 31% higher on our measure of empowerment than their counterparts experiencing paper closings; there was no difference on the same measure for middle or upper income borrowers.

4.4.3 Borrowers with graduate degrees

Borrowers with the highest level of education – a graduate degree – scored the highest on the actual understanding quiz with an average score of 49%, as shown in Figure 10 below. Despite scoring higher on actual knowledge, borrowers with a graduate degree did not score the highest on our measures of perceived understanding or empowerment. In fact, these borrowers had the lowest net positive score on the statements “The closing process was confusing for me” and “I felt like I had control over the process.” Similarly, on average, these borrowers were most likely to be worried about errors in the closing documents that no one notices and least likely to feel empowered to play an active role in the process.

FIGURE 10: KEY OUTCOMES BY BORROWER EDUCATIONAL BACKGROUND.[60]

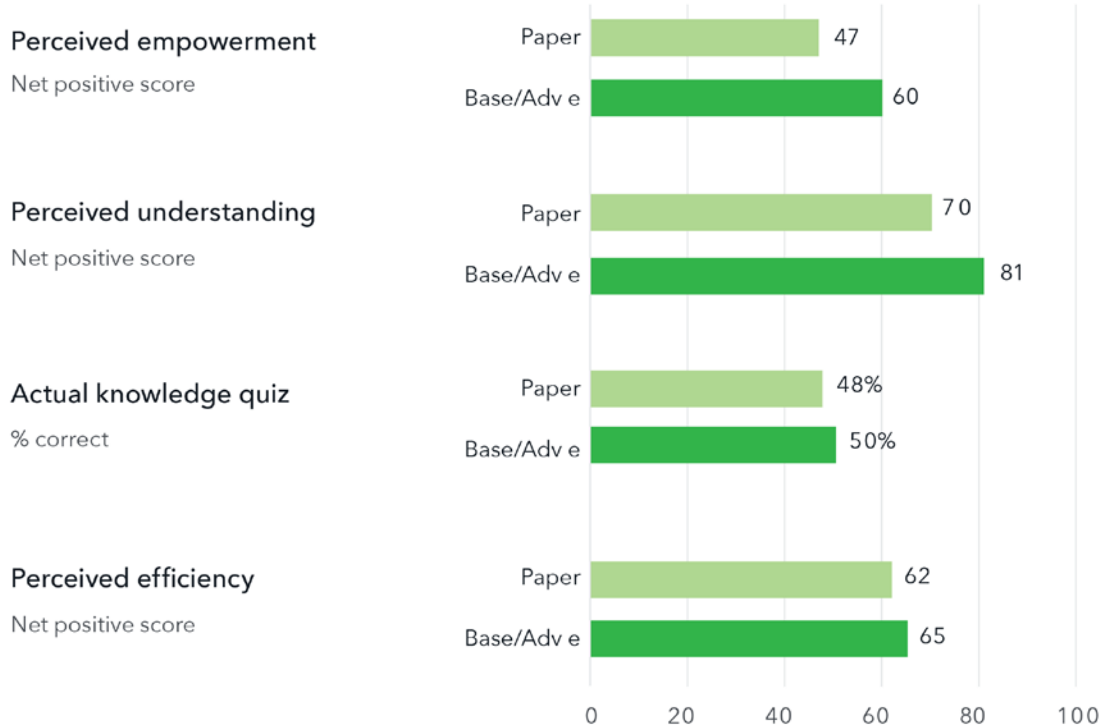


[60] See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

The data told a different story for these borrowers when we compared those in this group who experienced eClosings and versus paper closings (see Figure 11 below).[61] On average, eClosing borrowers in this group had the highest absolute empowerment and perceived understanding composite scores compared to other education groups. Additionally, the average difference between the eClosing and paper scores for both of these outcomes, and actual knowledge, was positive. These eClosing borrowers with graduate degrees had a pilot empowerment composite score of 60 and perceived understanding score of 81 (increases of 27% and 15%, respectively, over paper borrowers). One borrower with a graduate degree noted how he appreciated having the flexibility to access documents in his spare time: "I liked [the documents] electronically. It makes it easier to keep all in one place. I can file it and access it later... I could even look at something on my phone." This sentiment may represent the general comfort that some borrowers in this group had with using technology for financial transactions; this group had the highest percentage of borrowers that were extremely comfortable using technology for financial transactions, at 62%, versus 37% for the lowest education group.

[61] For high school diploma or less borrowers, paper n = 36 and eClosing n = 44

FIGURE 11: PAPER VS. ECLOSING FOR BORROWERS WITH GRADUATE DEGREES.[62]



4.5 Important considerations for implementing eClosing

Though we see some results from the pilot that eClosing may help provide a positive experience for consumers, lenders should ensure they implement this technology in a consumer-friendly way. In particular, lenders should be wary of the potential risks created by (a) perceptions of actual knowledge, (b) variability in borrower comfort with technology, and (c) variability in the customer experience.

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62 See Methodology Section 3.4 for "net positive score" and "composite score" calculation methodology.

There are many examples from the findings of the pilot that suggest eClosings may contribute to a positive experience for borrowers, but we identified specific data points that highlight four important considerations to ensure that is the case. All stakeholders should take these considerations into account when assessing how to implement any eClosing solutions in the future.

First, we asked borrowers to rate how strongly they agreed with the statement that "The process for signing the documents felt secure." On this data point, pilot borrowers in the paper closing group had an average net positive score of 86, but eClosing borrowers had a slightly lower average net score of 80. The CFPB ensured that the pilot participants used technology platforms that met industry standards for privacy and cybersecurity, but borrower perceptions are still an important factor. One potential cause of security concerns in an eClosing is technology glitches, which may reduce consumer confidence. For example, one borrower noted during the interview that, "There was a problem with signing the documents…We had to re-start the process three times." Additionally, another borrower noted that "There is all this PII (personal identifiable information) in there, it would have been nice to get some sort of double verification or assurance that this was encrypted and not an iPad from a hacker." Future eClosing providers across the industry should ensure that platform security is easy to understand and clearly explained to borrowers to reduce concern.

Second, it is important to distinguish between an increase in actual knowledge and an increase in the perception of knowledge. Throughout this section, we have presented data on both actual knowledge scores – based on an eight-question quiz – and perceived understanding based on borrower opinions of the process. A successful solution in the market should increase both actual and perceived knowledge for consumers. The former could lead to better outcomes for borrowers and the latter could lead to a better customer experience. But there is a potential risk if a solution leads to high perceived knowledge without high actual knowledge. Borrowers who are overconfident may be less likely to ask questions, look for errors, or push back on other stakeholders at the table. At the same time, borrowers should be rightfully cautious about financial transactions of this magnitude, and an adequate amount of caution and attention could also contribute to better outcomes. In this pilot, eClosings consistently had higher scores for both actual and perceived knowledge, but we are unable to compare the two measurements to each other. Further research on this subject should continue to distinguish between these outcomes, and industry participants should seek solutions that improve not only customer satisfaction but also actual borrower understanding and empowerment and process efficiency.

Third, some types of borrowers may be more likely to take advantage of the benefits of eClosing. For example, we did not see evidence that borrowers with low levels of formal education experienced differences between paper and eClosings, while some of our data suggested that borrowers with higher levels of education did. Stakeholders that are currently completing eClosing solutions or considering adding an eClosing option should ensure that technology platforms and resources are user friendly and provide benefits for all consumers. The next chapter will discuss this finding and others in greater detail as part of a larger discussion on "lessons learned" from the pilot.

5. Additional lessons learned

In addition to the data analysis on key outcomes, the pilot produced important learnings about the success factors and challenges for implementing eClosing systems in the marketplace. In addition to our conversations with participants during the pilot, we captured these insights through formal exit interviews at the conclusion of the pilot with each lender and technology vendor. Overall, participants relayed positive feedback from consumers and other stakeholders who completed the eClosing process, and they maintain a positive outlook about the future of eClosing in the mortgage market.

We would like to emphasize that adoption of eClosing remains quite low across the mortgage market due to the barriers we describe in our *Mortgage Closings Today* report.[63] In that report, we found that many barriers to implementation are associated with a few documents that needed to be recorded or notarized (e.g. eNote), so a hybrid process where some documents are signed electronically and some are signed with ink, could eliminate some of the key barriers to implementing an eClosing solution. In this pilot, we learned that the coordination and process change efforts, in particular, were much steeper than anticipated even in hybrid eClosings. While some participants have spent years refining their eClosing processes, other pilot participants were relatively inexperienced with eClosing. Those with more experience closing mortgages through an eClosing platform – not just implementing a single aspect of eClosing like eSignatures of loan documents – had a much easier time conducting the pilot due to their established workflows and procedures and experience that enabled them to more easily adapt to implementation challenges that arose. This experience factor was most evident when all relevant stakeholders in the pilot team (e.g. lenders, vendors, document providers, and settlement agents) had previously all conducted eClosings.

[63] This includes low adoption of hybrid eClosings as well.

5.1 Key success factors

While eClosing implementation presented obstacles that we describe later in this chapter, all participants were still able to successfully implement or expand their eClosing solutions during the pilot. These participants, who included both experienced eClosing providers and more recent entrants, noted key steps that they took to facilitate successful implementation and a positive consumer experience.

Success factor 1: Clear expectations and consistent communication between all players involved were necessary for a successful pilot team.

The relationship between the lender and technology provider(s) was consistently discussed as one of the largest determinants of success. When an effective collaboration existed, it was a major success factor; but when it faltered, the relationship was a major roadblock. Participants mentioned that aligning on clear roles and maintaining open, timely communication were crucial for successful implementation. One lender stressed, *"It was so important to have clearly established roles and responsibilities between [us] and technology providers."* These expectations applied to not only the eClosing providers, but also the document providers, who played an important role in creating the eClosing infrastructure and the settlement agents who conducted the closings. Beyond forming the initial partnership structure, some participants highlighted the value of regular check-ins between the lender and the vendor. Strong participant collaboration included weekly planning meetings prior to the pilot and weekly status updates throughout the pilot to track progress from start to finish.

> "It was so important to have clearly established roles and responsibilities between [us] and technology providers."

Success factor 2: Commitment from company leadership and ensuring buy-in across the organization are key in order to drive those involved in implementing eClosing.

When implementing a large platform transformation such as implementing eClosing, our participants described the importance of executive support. Given the extent of the process changes to lender and other stakeholder activities, in addition to the coordination required between stakeholders, some of these organizations required an internal "push" from their leadership teams. Due to the unique nature of this eClosing pilot, most of the participant lenders and vendors maintained strong internal support from their respective executive leadership. In a time of significant competing pressures, including the refinance boom and the Know Before You Owe mortgage disclosure rule implementation, this commitment from the top levels of the organizations was vital to the success of the pilot. Participants with greater levels of leadership support were able to exert more influence both within their organizations and within the market in which they operate in order to keep their eClosing implementation on track.

Success factor 3: Allowing sufficient time for preparation and/or rollout, including robust user testing, minimized technology issues that consumers and settlement agents faced during the closing process.

Most participants recognized the benefits of sufficient time and resources for implementing a technical eClosing solution. Unfortunately, as described above, this pilot occurred during a resource-intensive time period for industry, given the combination of the refinance boom and implementation of the Know Before You Owe mortgage disclosure rule. Several diagnosed the cause of their eventual challenges during the pilot as insufficient time to work through the details of their eClosing platform prior to launch. By contrast, those lenders and technology vendors that experienced fewer roadblocks during the pilot reported that a fully-deployed team and robust user testing were vital steps prior to the start of the pilot. User testing was particularly important to identify not only technology issues, but also consumer usability issues, such as unclear directions, confusing language, or distorted formatting on computer screens. They noted that this type of extended pilot ramp up period allowed them to handle unexpected technology issues that arose during the pilot and verify the data collection procedures. In the words of one participant, "[We] would have done much more software testing prior to [the] rollout [to make things easier next time]" for the consumers and other stakeholders at the closing table.

> "[We] would have done much more software testing prior to [the] rollout [to make things easier next time]"

Success factor 4: Early and continuous training of all stakeholders facilitated smoother eClosing implementation.

Participants pointed out that lender staff and other stakeholders must be educated about the intentions of eClosing and trained to utilize the new closing platforms. According to participants, the number of parties involved in the process requires a large investment in education to adopt process changes and achieve consistency across actors. In addition, a change like the adoption of eClosing requires a large-scale cultural and process change within lenders and with their external partners to adapt to the new way of doing business. One commented that they "would have done a lot more training" and education, including with closing attorneys, if they were to repeat the pilot. Another said, "[We did not expect] the level of education and training it takes to educate all participants to change their current way of doing business." For the participants that did conduct extensive training, they found that the receptiveness of the stakeholders varied. Some reported that settlement agents were unwilling to attend the planned trainings or invest time to learn the new processes due to competing business priorities, such as additional work from the refinance boom. But another lender was able to select and train all of its settlement agents before the beginning of the pilot in order to ensure a successful roll-out. We recognize that similar wholesale training would be less feasible for larger financial institutions that do business with a greater number of stakeholders.

5.2 eClosing implementation challenges

5.2.1 Operational challenges

Challenge 1: In some cases, pilot participants papered out more documents for ink signatures than expected for a number of reasons, including limitations of technology platforms, a perception of risk, and delays in pursuing implementation of eNotarization.

During our follow-up interviews, several lenders described the factors that led them to paper out more documents than anticipated in their closing packages. First, some technology platforms were not able to adequately handle variation in documents when placing the corresponding signature fields in the electronic documents. We discuss this factor more extensively in Challenge 7 below. Second, some lenders reported that their internal legal and compliance operations posed challenges to implementing full eClosing platforms. Though the Electronic Signatures in Global and National Commerce Act (ESIGN) and the Uniform Electronic Transaction Act (UETA) establish clear legal authority and procedures for electronic signatures, many players in the mortgage industry were still concerned about a lack of legal clarity and the perceived associated risk potential, particularly with respect to eSignature.[64] One participant highlighted the large amount of time required for the lender's compliance operation to approve the final document packages when these packages were assembled with custom documents. Third, one participant described the challenge in implementing an eNotarization platform due to not beginning the process of eNotary registration early enough. As a result of these concerns, lenders that intended to have fully electronic processes (or nearly so) still required ink signatures on a range of documents during the pilot. For reasons explained below in Challenge 3, almost all participants required borrowers to sign the promissory note with paper and ink. At one lender, three documents were signed with paper and ink: the Appraisal Report Disclosure, an automatic payment agreement, and a Notice of Right to Cancel. Across pilot participants, the number of documents signed with paper and ink during the pilot ranged from two to more than a dozen.

Challenge 2: Some lenders pursuing eClosing believed that they faced additional obstacles to gain approval to sell loans to secondary investors.

Like many mortgage lenders, most of the lenders in our pilot sell some, if not most, of their mortgages to secondary market investors. Several lenders reported confusion surrounding the approval process of Fannie Mae and Freddie Mac (the government sponsored enterprises or "GSEs") and other investors for hybrid eClosings that used both paper and ink as well as electronic signatures. Even though the GSEs have both been publicly supportive of hybrid eClosing, some pilot lenders reported extensive approval processes with them and some other secondary investors that took up to several months to complete. Lenders typically have to go through an approval process with the GSEs for electronically signed Promissory Notes. However, there was confusion with lenders regarding potential approval processes for other closing documents signed electronically. For example, multiple participants described a series of meetings with investors to explain the composition of the hybrid closing packages and to reach an agreement on an acceptable closing package. One lender explained, "[The investor] had obviously heard of [eClosing] and gone through it, but it was not commonplace enough to be

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[64] UETA was issued in 1999 by the Uniform Law Commission (ULC) and was adopted in some form by 47 states. ESIGN is a federal law enacted in 2000 and codified at 15 U.S.C. §§ 7001-7031. Both UETA and ESIGN provide for creating an electronic record with the equivalent enforceability of a mortgage note.

handled right away…They wanted to know what we were doing and how exactly the provider platform was going to work. Once they understood it, everything fell into place." Some participants reiterated that additional guidance from investors on how to address hybrid solutions would be particularly helpful as hybrid eClosings grow in number.

Challenge 3: Large-scale workflow and process changes were often required to implement eClosing solutions, particularly early document delivery for advanced eClosing.

All pilot participants agreed that eClosing adoption required large-scale process or workflow changes in the early stages of implementation. Lenders with multiple years of eClosing experience had fewer large-scale changes to implement specifically for the pilot. However, for many others, the implementation operational challenges were significant. It is also important to note that the two lenders with the largest number of eClosings in the pilot were mid-sized lenders with several years of eClosing experience. These institutions could take a more nimble, adaptive, and hands-on approach to eClosing, which might be difficult in the same time frame for larger financial institutions or for those who are new to the process.

Pilot participants detailed procedural changes that eClosings required, with additional coordination challenges involved with advanced eClosing's three-day early delivery component. Any single process change could touch multiple parties within the lender, including compliance, mortgage production, retail operations, IT, etc., in addition to other stakeholders outside the lender. With so many parties actively involved in every implementation task, pilot lenders reported difficulty in adjusting workflows to a new way of doing business. For example, in order to deliver documents to borrowers early, participants described managing the closing timeline more closely to create space to send the documents before the closing meeting. Some lenders described the extra work required to manage the pipeline of loans. One participant explained, "The key…is agreeing to a closing date early in the origination cycle, then managing processes to ensure it takes place when originally scheduled." Lenders' pilot experiences shed light on the actions they took to comply with three-day early document delivery in the period prior to the effective date of implementation. Executing eClosings – both base and advanced – at other lenders was similarly difficult in part due to the extensive

> "The key…is agreeing to a closing date early in the origination cycle, then managing processes to ensure it takes place when originally scheduled."

coordination, education, and iteration required across internal parties to change workflows. These challenges were augmented for lenders who were simultaneously in the process of switching platforms or document solution vendors at the beginning of the pilot.

Some participants also described the challenges of data collection in their back-end processes. Much of the data collected for the pilot, particularly for advanced eClosing, was either newly collected by the participants or had never previously been utilized. As discussed in the methodology chapter, this led to specific challenges in collecting cost and time data for some lenders.

Challenge 4: Lenders taking incremental steps toward hybrid solutions faced less implementation complexity than those that were hoping to fully adopt an electronic mortgage process that included an electronic Promissory Note.

Through much of the pilot, several lenders placed a strong emphasis on creating a fully electronic closing package or utilizing electronic notes (eNotes) as part of their eClosing solutions. Mortgage origination using an eNote is generally the primary criterion for an “eMortgage,” which in and of itself may create efficiencies and potential cost savings on the lender side when completing the mortgage transaction and reselling the mortgage in secondary markets. For two reasons, some participants stressed the implications of implementing incremental eClosing solutions (i.e., hybrid eClosing solutions), particularly without eNotes functionality. First, according to multiple participants, the use of eNotes can drive a more complex approval process with secondary market investors. Second, implementation of eNotes within an eClosing solution requires further coordination with internal and external stakeholders. Based on these challenges, one technology vendor suggested that lenders view eNotes as the final step in an eClosing solution rather than the first.[65]

[65] As of 2014, there were over 330,000 eNotes in the MERS eRegistry, compared to tens of millions of mortgages sold on the secondary market during the same time period. MERS is a public company that operates a national electronic registry system that tracks the changes in servicing rights and beneficial ownership interests in mortgage loans that are registered on the registry. Additionally, it operates a national database that provides free public access to servicer information for registered home mortgages.

5.2.2 Coordination challenges

Challenge 5: Given their lack of immediate incentives and the challenges (including investment of time and resources) associated with implementing a new system or process, many other external stakeholders (e.g. settlement agents, real estate agents, closing attorneys) found it difficult to implement the process changes required to implement the changes effectively.

A mortgage closing involves a complex "ecosystem" of stakeholders who must work together to allow a consumer to successfully close a mortgage, including settlement agents and title companies, closing attorneys, and real estate agents. From the beginning of the pilot, participants recognized the need to achieve buy-in from these other stakeholders in the closing process. Given the numerous actors involved in the closing process, concerns from parties other than the lenders also hindered participants' ability to carry out eClosings. The participants noted several concerns; one participant discussed the apprehensions of closing attorneys regarding electronic delivery of documents. Closing attorneys were not comfortable since the attorney would not be present to acknowledge receipt and walk-through the documents with the borrowers.

Some stakeholders in the closing process faced different incentives and implementation challenges than lenders; these incentives led to varying degrees of willingness to comply with the eClosing process changes. In some cases, the seller is the customer of the closing attorney and real estate agent; thus, their business interests may not directly align with those of lenders. Where lenders had less market share, participants similarly reported that some settlement agents and title companies had little incentive to adapt to a new closing format and way of doing business. This was reported to be especially true in purchase transactions, where the realtor drives much of the closing process rather than the borrower or the lender. By contrast, other lenders with more market share were able to exert more influence over their respective "ecosystems."

Pilot participants often found other closing parties to be hesitant or stretched too thin to make the changes necessary to implement eClosing. According to several participants, this challenge was greater than expected in part due to the refinance boom; the considerably higher volume of refinance transactions caused a strain on settlement agents, title companies, and lender resources. Some stakeholders were described as too busy to focus on new processes that could detract their attention from closing additional transactions. One participant partly attributed the success of its pilot experience to an early decision to establish a trusted network of settlement agents and title companies before the start of the pilot. The lender created a list of preferred settlement agents who agreed to the eClosing process and received relevant training. By limiting the number of stakeholders in the eClosing pilot to a select group, the lender avoided having to convince and teach each settlement agent and title company along the way.

Challenge 6: The low number of eNotarization capabilities remains a sizable challenge. Several pilot participants faced obstacles in obtaining an eNotary for the purposes of the pilot.

As participants navigated the legal framework to sign documents electronically, several noted electronic notarization for a more paperless process as one of the largest barriers. We found that the adoption of eNotarization capabilities was still relatively low in our pilot. In particular, some notaries refused to participate in an eClosing because of a perception that the electronic notarization process would not be legally permissible. According to one lender, its eNotary platform sought and received formal authorization for an eNotary platform by the Secretary of State's office. The notaries in question were instructed by the Secretary of State's office that the eNotary platform had been authorized, but the notaries were still concerned about the state's notary governance rules. The lender told us, "While eNotary is allowed, they had the perception that their livelihood was jeopardized…We were running against this with every single notary we were using, so we made the decision to add anything to be notarized into the wet sign stack." To bypass similar concerns, several lenders took similar action to use paper versions of all forms requiring notarization, growing the package of wet sign documents.

Challenge 7: In some instances, technology vendors were unable to adapt to lender expectations and requirements specific to implementing eClosing.

In addition to the extensive process changes mentioned above, several lenders also required significant IT changes to vendor platforms to implement their eClosing solutions. However, given the short time period to implement the pilot, some of the technology platforms had restricted capacity to adapt to unexpected needs and nuances required of eClosing transactions. Lenders and borrowers both reported technical issues with their eClosing experiences during the pilot. At the outset of the pilot, we described the desired eClosing functionality for pilot participants' eClosing platforms; some participants faced large obstacles in implementing these functionalities, while others faced challenges primarily with more advanced eClosing features.

The most common challenge repeated by multiple lenders was the ability of the eClosing solution to handle all potential variations of closing document packages.[66] Because the packages vary in content and length, document providers needed to map the potential documents in the package to specific characteristics of the loan to ensure all required documents are included in each package. According to some participants, external document management platforms were unable to complete the mapping of closing document packages on an adequate timeline. As a result, one lender took over the process and completed it internally and manually. Companies also needed to match each document with relevant eSignature functionalities to place an eSignature field on the corresponding pages. Some participants reported that the eClosing solutions were not able to adapt to the different documents for this purpose.

Participants and borrowers also noted three other challenges with the eClosing solutions that underscore the need for agile and adaptive technology. First, some platforms had difficulty addressing multiple borrower loans or non-borrowing spouses. In one platform, each borrower was required to create a separate account during the closing process, and the closing process was effectively carried out once for each borrower on the loan. Second, another participant experienced challenges with Wi-Fi connectivity on its eClosing platform. Third, in consumer interviews, some borrowers reported problems with electronically signing the documents. Though the technologies are present in the marketplace, effective implementation of eClosing features often requires a degree of customization that was more difficult for some participants.

Challenge 8: There's a learning curve for settlement agents and other players executing Closing transactions to understand how to manage the new process.

As discussed in the previous chapters, there was variability in the types of eClosings provided by participants during this pilot. Some of that variability is attributable to eClosing experience on the part of the lender and other closing participants, particularly title companies and settlement agents. There is a learning curve for settlement agents and other players executing eClosing transactions to understand how to manage the new processes, which for some participants were essentially rolled out in "beta" form. Several borrowers described their frustrations with closing meetings in which the closing agents had not yet adjusted to the new system. In the words of one

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[66] For some lenders, this process was handled by a document provider.

consumer, “[the settlement agent] had nothing prepared, nothing ready…She had to call some folks to learn how to do it. I had to sit there while she went through a course, and she said that she had never done this before.” Comments from pilot participants indicate that user feedback is critical to internal learning and the development of a more refined process. During this learning process in the early stages of eClosing rollout, there is a risk that some eClosing consumers could actually have a worse experience. Closing meetings could take more time, there may be operational issues with document delivery and review, or electronic signatures may not be accurately recorded, among other potential issues. Feedback from participants indicated that borrower feedback, user testing, and training are critical to mitigating this risk, which is discussed further in the next chapter.

As stated previously, while many challenges remain with eClosing implementation, all participants were still able to successfully implement or expand their eClosing solutions during the pilot. The challenges were to be expected. It was valuable to capture their lessons learned, both positive and negative, that provide insights to others considering implementation of eClosing solutions in order to plan accordingly.

6. Potential implications

This pilot substantially advances available research on eClosing solutions. To our knowledge, this pilot is the first broad public study on eClosing solutions that relies on consumer data. Public data to this point have focused more on implementation guidelines or industry perspectives. Direct data from borrowers has been anecdotal or from small studies of less than 100 borrowers.[67] Despite its data limitations,[68] this pilot provides a broader view of how eClosing may affect borrower perceptions and outcomes. The pilot yielded both a better understanding of eClosing and a strong platform for further research and discussion.

In this chapter, we will discuss implications of the key findings and lessons learned from this pilot. First, we will outline how this study has provided a basis for industry to continue exploring eClosing as a promising option for consumers. Second, we will discuss how further research can supplement this study by addressing experimental gaps. Third, we will highlight how the lessons learned through this pilot can help industry successfully implement consumer-friendly eClosing by addressing barriers ahead of time. Fourth, we will look internally at what the CFPB learned from this pilot and how we can use those learnings to better serve consumers and work with others to join us in those efforts.

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[67] For example, Xerox Mortgage Services publishes an annual study on paperless mortgages in a series called "The Path to Paperless," available for purchase at http://www.xerox-xms.com/resource-library/.

[68] See explanation of data limitations in Methodology, Chapter 3.

6.1 Industry should continue to explore eClosing as a viable option for consumers

With positive results for all of our key outcomes, we continue to believe in the potential that eClosings have to benefit consumers. The findings of this pilot provide some evidence that borrowers may be receptive to eClosing solutions and could benefit from having the option to choose between eClosing and paper closing. As noted in our summary findings, eClosing borrowers had higher scores than paper borrowers on what we measured for this pilot, including perceived empowerment, perceived understanding, and efficiency, as well as actual knowledge. We found it particularly compelling that the largest positive differences between eClosing and paper closing borrowers in our pilot were seen on consumer perceptions of empowerment; particularly because pilot data reinforced that empowerment remains overall low in the mortgage closing experience for borrowers.[69] Furthermore, over 90% of borrowers indicated that they were comfortable using technology for financial transactions, and consumer satisfaction with the closing process was slightly higher for eClosings than paper closings. In follow-up interviews, most borrowers who had completed an eClosing said that they appreciated the electronic features, particularly electronic document delivery. The findings from our pilot reinforced our hypothesis that eClosings have the potential not only to benefit consumers, but also represent a good business opportunity for industry, a true win-win for all involved.

Based on this pilot's findings, the CFPB believes that industry should continue to explore implementation of consumer-friendly eClosing solutions as an option for consumers. Because of the many players involved in the closing transaction, a lender interested in implementing eClosing solutions needs to coordinate effectively with many other participants in the process, including technology vendors, settlement agents, and closing attorneys, among others. Additionally, lenders may need to gain buy-in from internal groups, such as legal or compliance departments, which may have concerns about perceived risks of eClosing. We hope that this

[69] When comparing the absolute net positive scores of borrowers on empowerment, perceived understanding, and efficiency, empowerment consistently had the lowest scores of the three across the same borrower segments.

report, combined with the CFPB's support, will be a resource to help convince hesitant stakeholders to further explore eClosing options.

The findings from this pilot are also consistent with our research that informed the Know Before You Owe mortgage disclosure rule regarding giving consumers more time with the Closing Disclosure. As outlined in the Key Findings chapter, the strongest correlation with high outcomes in this pilot was where borrowers received and reviewed documents prior to arriving at the closing table. This finding supports the Bureau's policy objectives related to the timing component of the Know Before You Owe mortgage disclosure rule issued in November 2013 and effective October 3, 2015. Under this rule, borrowers must receive the new Closing Disclosure at least three business days prior to closing. The CFPB firmly believes that this time period, in addition to the easy-to-read content of the Closing Disclosure form, will help borrowers engage with the most important financial information early in the process and walk into the closing more empowered and knowledgeable. We therefore encourage lenders to deliver all of the closing documents ahead of time whenever possible, as was required for advanced eClosing participants in the pilot, in addition to delivering the Closing Disclosure, as the Know Before You Owe mortgage disclosure rule requires. As one lender described to us, the closing meeting largely becomes a formality because the borrower has been engaging with the lender and the closing documents for several days before the meeting – effectively extending the closing period to begin several days leading up to the closing meeting.

Additionally, pilot data indicates that there are certain groups of consumers who can potentially benefit more from eClosing than others (e.g. first-time borrowers and low-income borrowers.) As described in our key findings, we conducted demographic analysis to examine how various types of consumers react to eClosing differently. According to this analysis, the borrower segments that scored relatively low on key outcomes were the same with the largest positive differences between eClosing and paper – including first-time homebuyers, low-income homebuyers. We know the closing process can be particularly daunting for first-time homebuyers, and we have continued to look for ways to aid low-income borrowers through the process.

The consumer experience is important when implementing eClosing solutions and process needs to be well tested to ensure that consumers feel empowered with tools to simplify the complex mortgage transaction. Each participant in the pilot offered a different eClosing experience to its borrowers during the pilot. As discussed above, the eClosing technology solution, training of involved closing stakeholders (e.g. settlement agents), and individual interactions with the lender and partnering organizations each play a role in creating a positive (or negative) closing experience. Consumer interviews indicate explicitly that non-process aspects of the eClosing experience (i.e. responsiveness, communication, personal connection with the settlement agent) can have an impact on consumer satisfaction with the process and on our three key metrics – empowerment, understanding, and efficiency at closing.

With this pilot experience, lenders had the opportunity to debug their technology platform, seek user feedback from borrowers, train other involved closing stakeholders, and resolve communication and other operational gaps, albeit in a very compressed timeframe.

Without adequate testing, training, and communication, there is a potential risk that consumers face a less satisfying closing experience – more confusing, more stressful, or less efficient. This further reflects the need to getting the process right before introducing to consumers or managing consumer expectations during the transitional phase.

6.2 We encourage stakeholders to conduct further research

Despite its valuable findings, this pilot is just a start to studying and understanding the potential benefits of eClosing. Accordingly, we encourage further inquiry into how consumers can be better served during the mortgage process through the use of technology. As described in the Methodology chapter, we acknowledge that this pilot has important data limitations and caveats. Even though the results are positive, we believe further research on eClosing would be beneficial in order to best serve consumers. The CFPB believes that there is still a lot to learn about consumer interaction with eClosing. Last year, we spoke to multiple lenders who expressed interest in joining the pilot, but were unable to meet the implementation deadlines. They discussed the potential of running their own pilots. We encouraged that at the time and reiterate that position today. Additional research will help all stakeholders collect both quantitative and qualitative insights regarding the impact of eClosing and ways to address implementation barriers. We have included below some suggestions for topics and structure of future research. But we also encourage those running studies to reach out to the CFPB for questions and assistance; we could provide supportive consultation in such research going forward.

Stakeholders who consider conducting future research should look to address the specific gaps in our loan dataset. We identified three particular gaps in the information from this pilot that the CFPB would be interested in addressing in future research studies. First, future studies should test a broader set of geographies and institutions to better capture the diversity of mortgage transactions today. As noted earlier, this pilot was limited to seven lenders. The two lenders that provided the majority of the eClosings for our pilot were both lenders with strong footprints in the Western half of the United States. We would be interested to see whether, and how, results might vary when tested in different geographies. This may include variation with borrowers and loan packages. In addition, different institutions may have varying technology infrastructures, processes, and barriers to implementation.

Second, future studies should aim to capture a larger sample size of purchase eClosing transactions. When the pilot started, we knew that the purchase eClosing sample size would be low because eClosings are used less frequently for purchase transactions than for refinances. This is primarily because lenders have less control over purchase transactions and cannot require all stakeholders to use an electronic platform. But the purchase sample size was even lower than expected because there was an increase in refinance volume in early 2015. Since the data showed that the variation between eClosing and paper closing was larger for purchase transactions, the CFPB would be particularly interested in seeing more data for this type of transaction, particularly for first-time homebuyers experiencing an advanced eClosing.

Third, future studies should attempt to capture cost data to determine if eClosings reduce the burden on industry stakeholders. In *Mortgage Closings Today*, we noted as a hypothesis that eClosings could reduce lender costs by limiting delays, reducing errors/redraws, and lessening process time through automation. Unfortunately, we were not able to test that hypothesis in the pilot given the difficultly of collecting cost data, as outlined in the Methodology chapter above. We remain highly interested in further exploration of this topic and recommend further studies to determine the net financial impact of eClosing on lenders.

Additional future research studies should leverage and build on the CFPB's focus on key outcomes that we outlined in this report. In an ideal study, the CFPB would be interested in observing how eClosings impact the actual financial outcomes of mortgage borrowers (i.e., more borrowers making better mortgage decisions that lead to better financial outcomes over time) compared with paper closings. But given the constraints of conducting a longitudinal study, we have opted to focus instead on outcomes that are more easily measured in the short term. We therefore decided to focus on measures of perceived empowerment, understanding, and efficiency, which directly address the most common reported consumer pain points associated with the closing process: (1) not enough time to review documents, (2) overwhelming stack of paperwork, (3) documents too hard to understand, and (4) unexpected errors at closing. We suggest that stakeholders who plan to conduct future studies test similar outcomes. In particular, we would like to flag three considerations.

First, the CFPB encourages future researchers to avoid focusing solely on borrower “satisfaction,” which may not be aligned with good outcomes. We recommend avoiding reliance on measurements of “happiness” or “ease” in completing the mortgage process. As we've noted previously, in some instances, an easier transaction with higher consumer satisfaction could actually undermine consumer outcomes.[70]

Second, we tested actual knowledge of the borrower’s transaction based on an 8 question quiz. The CFPB would be interested to see how future studies can expand on the measurement of actual knowledge we used in our pilot. It would be interesting to see the results of a study that successfully tests both actual and perceived understanding in a comparable format. For example, the test could ask if borrowers believe they have a clear understanding of a topic, such as pre-payment penalties, and then also ask a content question on that same topic. Then, whether borrowers answered each question correctly could be compared across the question pair to identify any areas of false confidence. This type of study would require more questions pairs and a higher sample size than this pilot.

Third, we want to stress the importance of separating the analysis of purchase and refinance transactions. In this pilot, the data showed that the consumer outcomes at closing– empowerment, understanding, and efficiency – vary based on transaction type. Future studies should separate purchases and refinances when comparing any segments that have unequal weighting of each type. It is important to note that other factors may need to be controlled in the analysis, such as lender or borrower demographics, so researchers should check the data early for these concerns.

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[70] See explanation in Section 4.5.

Fourth, future studies should continue to investigate how specific consumer segments may react differently to eClosing. Further research should explore further how the impact of eClosing differs broadly across demographics, including but not limited to borrower experience, income, and education.

6.3 Those exploring implementation of eClosing should consider the lessons learned from this pilot to inform their implementation plans

We hope that the success factors identified by our participants will help future lenders and eClosing providers plan for the implementation process. The key challenges discussed in the previous chapter can also help interested industry participants anticipate barriers to implementation of eClosing and plan accordingly.

The success factors that we describe are not a comprehensive list of the conditions required for implementing eClosing solutions. We also acknowledge the implementation process will vary greatly according to lender characteristics. However, pilot participants highlighted these steps as key to their pilot experience, and we believe these success factors would be beneficial to all lenders considering eClosing as an option.

The CFPB's view of the barriers for lenders to adopt eClosings has evolved from the release of last year's report. Through this pilot, we learned that operational and coordination-related barriers were often larger than originally understood. Each mortgage closing involves many different parties, so it can be challenging for a lender to ensure that each party is willing *and* able to conduct an eClosing. This large-scale change requires persistence – or as one participating lender called it, *"both determination and heart."* To address this barrier, we specifically call on trade associations, advocacy organizations, and other stakeholders to work together to find ways to address barriers, dispel myths, and spur implementation. As lenders continue to pursue electronic closings, we also call on secondary investors, including the GSEs, to continue to provide additional guidance to lenders on how to address hybrid solutions. To resolve coordination barriers, industry participants, government entities, and other stakeholders will need to work together and think about how to implement change on a large scale, rather than one lender or one settlement agent at a time.

6.4 CFPB and others should leverage this pilot to help guide next steps

This pilot may help dispel common myths held by those hesitant to embrace technology-driven solutions. Though this report primarily concerns eClosing as a channel for improving the consumer experience, eClosing also plays an important role as a case study for implementing technology-driven solutions in the consumer financial marketplace. In *Mortgage Closings Today*, we discussed in depth the myths surrounding the legality and practicality of eClosing. We believe that this report can serve as further evidence to help dispel two prominent myths. First, we learned in interviews during our prior background research phase and during this pilot that some industry participants do not believe that the eClosing process is legal. Concerns generally relate to whether eSignatures and eNotarization create legally binding, authoritative copies of the mortgage contract and related documents. Despite the passage of ESIGN and UETA, the misunderstanding persists. We hope that this report, in addition to the CFPB's public support of eClosing as a potential option for consumers, will help dispel this myth. This confusion surrounding the legality of eClosing and what we mean by eClosing serves as just one example of the skepticism around technology-driven solutions for consumer financial products.

Second, some industry participants believe that eClosing requires a fully paperless process and, therefore, they must be “all in” to implement eClosing. As described earlier in this report, none of our pilot participants completed a 100% paperless closing; they all had borrowers wet sign at least one document for various reasons. This “hybrid” approach is significantly more common across industry than a fully electronic closing. In fact, the distinction between a “fully electronic” and “hybrid” process may be an irrelevant distinction. As these pilot data show, this approach is feasible. We encourage industry participants interested in technology-driven solutions, but wary of implementation barriers, to consider whether hybrid solutions might fit their business needs.

6.5 The CFPB remains interested in looking at further evaluations of eClosing together with an analysis of upcoming market changes.

The CFPB plans to combine learnings of this pilot with observations of market changes associated with the implementation of the mortgage disclosure rule to determine next steps. Based on the promising results of this pilot, the CFPB has a strong interest in staying engaged with stakeholders in the conversations about eClosing. We want to be a part of future research efforts and discussions to understand the potential of eClosing, address barriers to adoption, and expand implementation. We plan to wait to observe market changes associated with the Know Before You Owe mortgage disclosure rule and the role of eClosing in it. As this report outlined, a key advantage of eClosing is the ability to facilitate early document delivery, which is also the core of the Know Before You Owe initiative and the mortgage disclosure rule. Additionally, we know that some industry stakeholders are incorporating electronic signatures into their process to help comply with the Know Before You Owe guidelines, and we intend to observe how stakeholders react to these changes. We are convinced that eClosing can be a promising option for consumers, and we are committed to helping implement consumer-friendly solutions.

Moving forward, we see our role as a catalyst and facilitator of change, as a convener of cross-sector collaboration, and as an advocate for enhanced consumer outcomes during mortgage closings. We have invested in understanding the consumer experience during the home loan and closing process and will continue to place high importance on protecting consumers in mortgage markets. We will continue to be a participant in public dialogue surrounding eClosing and are committed to serving as a resource to others conducting internal pilots on this topic, and will help bring industry and government stakeholders together for further discussion on improving the consumer experience.

7. Conclusion

The CFPB finds the results of this study encouraging for industry participants that are currently completing eClosings, working toward eClosing implementation, or are still in early discussions on eClosing. Borrowers experiencing eClosing scored higher on average than those experiencing paper closings on many of our measures of perceptions of empowerment, understanding, and efficiency, which suggests that eClosing can be a valuable option for consumers. In particular, eClosing seem to serve as a vehicle to help facilitate two other drivers of empowerment, understanding, and efficiency at closing: early document review and easy integration of educational materials.

This pilot should not be treated as the final verdict on the potential of eClosing, for two reasons. First, this study had important data-related and methodological constraints that prevented us from executing a fully randomized study with a sample size sufficient enough to detect statistically significant differences between groups, and we were not able to achieve a sample that was representative of the full U.S. borrower population geographically or demographically. Second, the results from these data are still mixed or unclear in some areas. For example, the comparison between eClosings and paper closings on refinances told a mixed story across lenders, while our findings were promising and less nuanced with regard to eClosing in purchase transactions. Given these constraints and results, we instead view this study as confirmation of growing interest in eClosing as an option for consumers and as a platform to spur further research. We hope that stakeholders conduct future research on eClosing to increase understanding of their impact on consumers and on expanding industry adoption.

The CFPB plans to stay closely involved in the eClosing efforts going forward as a champion of consumer-friendly solutions. As we observe the impact of the Know Before You Owe mortgage disclosure rule implementation, we will assess specific next steps for the Bureau's research. The CFPB remains committed to fulfilling our vision for empowered, knowledgeable homebuyers experiencing a more efficient, consumer-friendly process.

APPENDIX A:

Loan data overview

TABLE 1: LOAN DATA FOR PURCHASE LOANS

Pilot group	n	% of homes
Paper	1156	89.3% of purchase
Base eClosing	79	6.1% of purchase
Advanced eClosing	59	4.6% of purchase
Total	1294	39.3% of total

TABLE 2: LOAN DATA FOR REFINANCE LOANS

Pilot group	n	% of homes
Paper	1013	50.7% of purchase
Base eClosing	512	25.6% of purchase
Advanced eClosing[71]	473	23.7% of purchase
Total	1998	60.7% of total

[71] See Methodology (in Chapter 3) for a more detailed description of our experimental design. The key difference between "base" eClosing and "advanced" eClosing was that with advanced eClosings, consumers received their closing documents three days prior to their closing meeting and had access to CFPB educational materials.

APPENDIX B:

Survey respondent overview

TABLE 3: SURVEY RESPONSES FOR PURCHASE LOANS

Pilot group	n	% of homes
Paper	357	88.4% of purchase
Base eClosing	25[72]	6.2% of purchase
Advanced eClosing	22[73]	5.4% of purchase
Total	404	32.2% of total

TABLE 4: SURVEY RESPONSES FOR REFINANCE LOANS

Pilot group	n	% of homes
Paper	355	41.8% of purchase
Base eClosing	263	30.9% of purchase
Advanced eClosing	232[74]	27.3% of purchase
Total	850	67.8% of total

[72] Lender 2 comprises 22 of 25 total base eClosing purchase respondents

[73] Lender 2 comprises 16 of 22 total advanced eClosing purchase respondents

[74] Lender 1 comprises 180 of 232 total advanced eClosing refinance respondents

APPENDIX C:

Contents of composite scores in survey data

Actual knowledge score (correct vs. incorrect)

- How did the total closing costs on your HUD-1 Settlement Statement compare to the costs in your original Good Faith Estimate (GFE)?
- Can your interest rate increase during the life of your loan?
- Can the total amount that you pay each month increase during the life of your loan?
- Which of the following best describes how the final costs on the HUD-1 Settlement Statement can change from the original estimates on the Good Faith Estimate (GFE)?
- Which of the following best describes your rights as a consumer to negotiate the costs on the HUD-1 at the closing meeting?
- Which of the following best describes a pre-payment penalty?
- Which of the following best describes a fixed-rate mortgage with monthly payments for principal, interest, taxes, and insurance?
- What is the document that you sign during the closing process that gives the bank the right to take away your house if you do not meet your responsibilities as a mortgage-holder and homeowner?

Understanding score (strong agree to strongly disagree)

- I had a clear understanding of the terms of my loan and how my payments are determined.
- I had a clear understanding of my rights as a homeowner.

- The closing process was confusing for me.
- I had a clear understanding of what the consequences were if I failed to fulfill the responsibilities of my mortgage.
- I had a clear understanding of the final closing costs on my HUD-1 Settlement Statement.
- I had a clear understanding of why the costs outlined in my initial Good Faith Estimate (GFE) were different than my final closing costs.

Efficiency score (strong agree to strongly disagree)

- The closing process took longer than I expected.
- The process for signing the documents was convenient.
- The closing process was efficient
- I felt comfortable asking questions during the closing process.

APPENDIX D:

“Net positive score” calculation methodology

All survey questions that ask for a 5-point answer (strongly agree to strongly disagree) are represented with a "net positive score."

TABLE 5: EXAMPLE DATA

Answer choice	% of respondents
Strongly agree	10%
Agree	5%
Neither agree nor disagree	10%
Disagree	25%
Strongly disagree	50%

TABLE 6: EXAMPLE CALCULATION

Step	Calculation
1. Identify which answer choices represent a “positive” consumer outcome[75]	"Disagree" represents a positive consumer outcome in this statement
2. Add strongly agree and agree responses ("negative" responses)	10% + 5% = 15%
3. Add strongly disagree and disagree responses ("positive" responses)	50% + 25% = 75%
4. Subtract "negative" responses from "positive" responses	75% - 15% = **60%**

A higher net positive score always corresponds with a more desirable borrower outcome.

[75] Note that depending on the wording of the question, a “positive” response to some questions would be to agree (e.g., “I had a clear understanding of my rights as a homeowner”), while for other questions a “positive” response would be to disagree (e.g., “The closing process was confusing to me”). Note: example does not use actual survey data