



# Who Participates in Homebuyer Education and Counseling Services and Why?

Insights from HUD's First-Time Homebuyer Education and Counseling Demonstration



# **Who Participates in Homebuyer Education and Counseling Services and Why?**

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## Disclaimer

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## Abstract

Homebuyer education and counseling services are designed to help homebuyers think about the benefits and risks of homeownership, understand how to choose a home and appropriate mortgage, and build the financial knowledge and behaviors needed for sustainable homeownership and financial health. Using data on enrollees in HUD's First-Time Homebuyer Education and Counseling Demonstration, this report investigates the personal characteristics that associate with program participation in—both initiation and completion of—in-person and remote homebuyer education and counseling services.

Women and homebuyers with greater education were more likely to participate in homebuyer education and counseling services in general. Those at an early stage of the homebuying process, those who reported being “pretty good at math,” or those who planned to purchase a home without a co-borrower were more likely to participate in *in-person* services. Those who planned to spend more years living in their purchased home, who scored better on a baseline mortgage literacy quiz, or who had a higher credit score were more likely to participate in *remote* services. Agencies providing homebuyer education and counseling may find these results informative to their messaging, outreach, and approach to providing services.

## Introduction and Background

For generations, homeownership has been a gateway to the middle class and a cornerstone of the American Dream. Homeownership helps households build wealth in a variety of ways. First, homeowners are forced to save, through regularly scheduled mortgage payments, a portion of each payment, reducing the principal owed. Second, homeownership is a leveraged investment, typically allowing homebuyers to commit only a small fraction of the home's value as a downpayment but realize returns on the entire value of the property if it appreciates. Finally, for many homeowners, homeownership has tax advantages.

Homeownership also has risks. Unaffordable mortgage payments, the opportunity costs of not investing in better-performing assets, home maintenance responsibilities, and the higher transaction costs of moving can make homeownership more a burden than a benefit for some. Homebuyer education and counseling programs are designed to help homebuyers think about the benefits and risks of homeownership, understand how to choose a home and mortgage, and build the financial knowledge and behaviors needed for sustainable homeownership and financial health.

The U.S. Department of Housing and Urban Development's (HUD's) First-Time Homebuyer Education and Counseling Demonstration evaluates

the effectiveness of homebuyer education and counseling services for low-, moderate-, and middle-income prospective first-time homebuyers. The study began enrollment in September 2013 and thereafter (through February 2016) randomized more than 5,800 first-time prospective homebuyers from 28 large metropolitan areas into control and treatment groups to assess the extent to which homebuyer education and counseling improves their outcomes. The short-term followup, which considers outcomes 12 to 18 months after study enrollment, is now complete, and a short-term impact report is in progress. The study will examine study participants' outcomes 3 to 5 years after study enrollment to determine the longer-term impacts of homebuyer education and counseling on homeownership preparedness and search; financial literacy, capability, and management; and homeownership sustainability.

The treatment groups were offered access to in-person services only (in-person group education workshops and one-on-one counseling), remote services only (online, internet-based education, and telephone-based counseling), or their choice of remote or in-person services. These services were offered to treatment group members for free. The control group was not offered any services. The study's treatment group members had up to 12 months to complete homebuyer education and counseling services, during which the study team conducted outreach to encourage service completion

and tracked participation in homebuyer education and counseling services, which were provided via HUD-approved agencies. Prior reports document the study's implementation (DeMarco et al., 2017) and early findings about the impact of homebuyer education and counseling on selected outcomes (DeMarco et al., 2016). Within the next year, the demonstration will report fully on the short-term impacts of offering homebuyer education and counseling services, including whether the impact of offering in-person services differs from the impact of offering remote services.

As documented by DeMarco et al. (2017), not all study participants who were offered the free homebuyer education and counseling services participated. Slightly more than one-half of treatment group members initiated any service (either the education curriculum or one-on-one counseling), and about one-fourth of them completed all services (both the education curriculum and one-on-one counseling). Additional details related to service initiation and completion rates are presented in this report's findings section. This report investigates which characteristics of study participants predict participation in—both initiation and completion of—in-person and remote services. Additionally, we discuss the possible reasons why study participants chose to participate or not participate in the offered services. Finally, we consider the implications of our findings for the marketing and delivery of homebuyer education and counseling services.

## **What Is Homebuyer Education and Counseling?**

HUD-approved agencies delivered the homebuyer education and counseling services offered to study participants through this demonstration. The agencies' services were in line with both HUD-established standards and National Industry Standards, which promote consistent and high-quality provision of such homebuyer education and counseling services across the country. Although the National Industry Standards do not dictate a specific curriculum, they provide core topic areas to be covered. The education curriculum topics include assessing readiness to buy a home, budgeting and credit, financing a home, shopping for a home, and maintaining a home and finances. The standards specify a minimum of 4 hours and suggest 8 hours of education to cover this content. The standards

additionally suggest 30 to 60 minutes of individualized counseling across a set of specific activities, which include reviewing an individual's income, expenses, debt, credit report, budget, and savings; conducting a housing affordability analysis; creating an action plan; providing information on delinquency prevention counseling; and making referrals and scheduling followup, as needed.

## **In-Person Services**

For the provision of in-person services, the study team partnered with 63 local HUD-approved housing counseling agencies across the study's 28 metropolitan areas. The in-person education curriculum averaged about 8 hours, either as a single full-day workshop or split during 2 half days. Most agencies provided workshops at least once per month. Homebuyer education workshops were interactive, using a variety of tools, with guest speakers on specific topics such as the role and services of lenders, real estate agents, insurance agents, home inspectors, and closing attorneys (DeMarco et al., 2017).

The one-on-one counseling sessions about homeownership provided study participants with individualized, objective information and advice. Although staff at most agencies met with study participants after the participants had attended an in-person homebuyer education workshop, some staff met with participants before the workshop. Counseling sessions typically occurred in 1- to 2-hour time blocks, with the counselor reviewing the participants' information in advance in order to address the person's particular situation.

## **Remote Services**

Remote services in the study included an online, internet-based homebuyer education curriculum and one-on-one telephone-based counseling. The study team partnered with two national agencies to provide remote services to the study's treatment group members. It partnered with eHome America, a program run by the Community Ventures Corporation, for the online education curriculum and with ClearPoint Credit Counseling Solutions for one-on-one telephone counseling.

The online education platform that study participants experienced was interactive. In addition to providing informational text, the online course featured videos, worksheets, and quizzes to engage participants in learning. The curriculum had six modules, each of which included quizzes and a final test on the material covered. To proceed to the next module, participants had to complete quizzes with a grade of 80 percent or higher. (The in-person education workshops rarely used quizzes.) Study participants who initiated the online education curriculum were allowed to save their progress and complete the online course at their convenience.

For the one-on-one telephone counseling component, ClearPoint counselors provided individualized discussions about finances, budgeting, and the mortgage process. Following the session, each client received a counseling summary package by mail. The package contained a complete budget that incorporated the information collected and analyzed during the session, along with the housing counselor's recommendations. A typical one-on-one counseling session lasted about 1 hour.

## Study Sample

The study team recruited participants via three major national lenders. Those lenders made referrals to the study based on whether the inquiring client reported being a low-, moderate-, middle-income first-time homebuyer, lived in 1 of the study's 28 sites, and agreed that the lender could provide his or her contact information to the study team. The evaluation imposed additional eligibility criteria as study enrollment took place, including clients' internet access to permit participation in remote services should they be assigned to that group, clients' access to transportation should they be assigned to the in-person services group, and clients' willingness to participate in services should they be assigned to a treatment group. The evaluation also screened out clients who previously had participated in homebuyer education and counseling or were part of a downpayment assistance program that required participation. As such, the individuals who are part of this study sample are distinctive.

- Their first point of contact on the way to receiving homebuyer education and counseling was a

lender participating in the study, not a housing counseling agency.

- They were not participating in downpayment assistance programs that required them to participate in homebuyer education and counseling.<sup>1</sup>
- They were willing to be part of a study of the effects of homebuyer education and counseling.
- They lived in 1 of 28 metropolitan areas (decided on because of the three lenders' volume).
- They were prospective first-time homebuyers whose incomes were below 120 percent of their local area's median income.<sup>2</sup>

These eligibility criteria resulted in a diverse study sample that represents prospective homebuyers with a wide variety of traits. As detailed in the study's baseline report (DeMarco et al., 2017), the study sample is racially and ethnically diverse, with 12.1 percent self-identifying as Asian, 20.4 percent as African-American, 25.0 percent as Hispanic, and 38.5 percent as non-Hispanic White. Approximately three-fifths (60.2 percent) of study participants are men and two-fifths (39.8 percent) are women. The study participants reflect a wide range of educational attainment, with a slight majority of participants (53.5 percent) holding bachelor's degrees. Most participants (89.9 percent) were working full time (that is, at least 30 hours per week) as of the study's baseline survey. The median income for study participants and their co-borrowers was \$54,000 in the 12 months prior to enrollment, with 10 percent making more than \$100,000 and 10 percent making less than \$26,000 (DeMarco et al., 2017).

## Prior Research on Participation and the Contribution of This Report

A large number of studies have sought to validate empirically the benefits of homebuyer education

<sup>1</sup> If enrolled in the study, such customers could have been randomly assigned to the control group, which was designed to contain only participants who received no homebuyer education and counseling services. The study therefore excluded such customers, because they were likely to complete activities associated with homebuyer education and counseling services on their own despite being in the control group (DeMarco et al., 2017).

<sup>2</sup> The study's baseline report (DeMarco et al., 2017) fully details the eligibility criteria and recruitment procedures.

and counseling services.<sup>3</sup> However, few evaluate the participation decision of whether or not individuals engage in homebuyer education and counseling services, the decision to complete services, or whether those decisions differ by service mode.<sup>4</sup>

Most prior studies use a sample of individuals who *received* homebuyer education and counseling, rather than a treatment group *offered the opportunity* to take up services. This difference makes comparisons between this and other research difficult. That said, the rates of service takeup for HUD's First-Time Homebuyer Education and Counseling study of 55 percent for the full treatment group are in line with the limited research available in the field. For example, Smith, Hochberg, and Greene (2014) reported that about one-half of study participants who were offered education and counseling through their study took up those services. Similarly, Theodos et al. (2015) conducted a recent randomized experiment on in-person financial coaching and had takeup rates ranging between 37 and 56 percent.

Recently, Fannie Mae (2017) conducted qualitative indepth interviews and mini-group discussions with lower income, first-time homebuyers and industry professionals to learn more about their preferences and thoughts on homebuyer education. They found motivational barriers to wider participation in homebuyer education, as participation involves time and inconvenience. Homebuyer education is viewed as “another hoop to jump through” during an already stressful time. Relatedly, consumers see the value in homebuyer education only after they participate and are generally not motivated to participate without incentives (Fannie Mae, 2017).

Homebuyer education and counseling services, once offered only in person, have expanded to online provision in hopes of being able to reach more

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<sup>3</sup> For a description of previous studies conducted on homebuyer education and counseling, refer to Appendix A of the study's Baseline Report (DeMarco et al., 2017) at [huduser.gov/portal//portal/sites/default/files/pdf/First-Time-Homebuyer-BaselineReport.pdf](http://huduser.gov/portal//portal/sites/default/files/pdf/First-Time-Homebuyer-BaselineReport.pdf).

<sup>4</sup> Although this study focused on takeup of homebuyer education and counseling services specifically, Currie (2004) offered a review of the literature regarding the takeup of a wide range of social programs in the United States and United Kingdom. Currie (2004) identified three factors that determine social program takeup— stigma, transaction costs of participation, and knowledge (or lack thereof).

geographically dispersed populations and make participation easier and knowledge more accessible. As described by DeMarco et al. (2017), the takeup rates in this study varied according to the mode of intervention. Each mode of homebuyer education and counseling takes its own form and, as such, likely appeals to different kinds of people.<sup>5</sup> Related, Fannie Mae (2017) found that most participants preferred services to be conducted in person, because they were able to ask questions of the instructor, learn from others' questions, and have the instructor explain terminology and the homebuyer process. However, some participants expressed a preference for online homebuyer education because of its flexibility and convenience (Fannie Mae, 2017).

Prior research does not explicitly address differences in participation patterns between in-person and remote services, nor the traits associated with any potential differential either in preference or in practice. As a result, this report is poised to fill an important information gap; it aims to provide needed insights regarding how selection bias may affect the interpretation of the impact of homebuyer education and counseling from quasi-experimental studies. It can also provide descriptive information regarding who takes up services when offered. This research would hold value on its own and also may help in interpreting results from the demonstration's impact analysis, particularly those related to the “treatment on the treated” impact (that is, the impact on those who took up the offer of treatment).

In brief, this report explores the characteristics of those who chose to participate in services in this demonstration and their reasons for participating in services (or not). The report addresses the following main research questions: Why do individuals choose to participate in services? What are the characteristics of people who initiate or complete in-person and remote services? To what extent do the characteristics that predict participation differ across service modes?

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<sup>5</sup> More broadly, approaches to online versus in-person education and training are rapidly evolving. In the education sector, colleges and universities, for example, are testing varied online approaches to offering courses and degrees in order to be able to expand their reach and serve the needs of diverse student populations (Xu and Jagers, 2013).

The next section suggests a generalized theory for individuals' decisions about taking up and completing homebuyer education and counseling services. We discuss conceptually what factors might associate with participation and propose hypotheses where relevant. Thereafter, the methodology section details the design of the evaluation that provides data for this analysis, the sample, and the analytic approach. After discussing findings, we suggest implications for future research and practice. In brief, understanding who participates in in-person and remote homebuyer education and counseling services has implications for how lenders and service providers market and deliver services.

## A Theory and Hypotheses About the Participation Decision

This section suggests a theoretical framework for understanding the decision to participate in—either initiating or completing—homebuyer education and counseling services. We then discuss the variables related to that participation decision, along with hypotheses regarding the expected direction of the relationship.

In this report, we consider four measures of homebuyer education and counseling service participation: (1) whether the study participant initiated any homebuyer education and counseling services; (2) whether the study participant completed the education curriculum; (3) whether the study participant completed one-on-one counseling; and (4) whether the study participant completed all homebuyer education and counseling services. We use the term “participation” to refer to these four measures of homebuyer education and counseling initiation and completion collectively, although we analyze initiation and completion separately as well.

### A Theory of Service Participation

Building from Shroder's (2002) analysis of the housing lease-up decision, we propose that a rational person will participate in homebuyer education and counseling services if the probability of benefiting from the services ( $p$ ) times the size of the expected benefit from the

services ( $B$ ) is greater than the cost of participating in services ( $C$ ).<sup>6</sup>

$$p \cdot B > C \quad (1)$$

The probability of benefiting from service participation ( $p$ ) depends whether the information gained from those services will help the person make a later decision about an acceptable or desirable mortgage loan. For instance, those who have poor credit may think it is unlikely that they will end up purchasing a home, and so they may expect not to derive value from participating in homebuyer education and counseling services. Alternatively, those with good credit may be well positioned to secure a good mortgage product without participating in services. The probability of benefiting from service participation may also be related to one's perceived ability to comprehend and apply new material.

The size of the expected benefit from homebuyer education and counseling services ( $B$ ) depends on a number of factors. For example, the benefit of services may be lower for those who have already purchased a home, because some of the material may not apply to them. Conversely, those unsatisfied with their prepurchase housing arrangements may perceive homebuyer education and counseling services as having relatively larger benefits because of their greater motivation to purchase. The size of the benefit may also rise with the number of years one plans to live in the purchased home, because people may expect to benefit (or suffer) from their home purchase decisions for a greater length of time.

The benefit of participating in homebuyer education and counseling services may be lower for those who believe they already know the material that services would cover (and higher for those largely unfamiliar with the home-purchase process). Some of the benefits of services may alternatively be purely psychological. For instance, those who have a good credit score and high level of knowledge may derive utility from attending classes

<sup>6</sup> An alternate theoretical framework for social program participation comes from Heckman and Smith (2004) who considered decision points at each of multiple stages of the participation process. Their framework identifies the predictors of program eligibility, program awareness, application, acceptance into the program, and formal enrollment. They found that personal choices and characteristics substantially affect participation and that awareness of program eligibility is a major source of variation in participation. In contrast, we consider the cost-benefit ratio as the main determinant of participation.

or engaging with a counselor, because they may want to be commended for what they have accomplished (for example, a high credit score, low debt, and high income) or because it reinforces what they have already learned. Additionally, note that monetary incentives were offered—in this demonstration—for engaging in homebuyer education and counseling services. Participants received up to \$150 as compensation for the time required to participate, with payments for both initiating and completing services. As such, the demonstration introduced a factor that may not influence the participation decision outside of the research setting.

Finally, the cost of service participation (C) depends on the time and effort required, including direct, out-of-pocket costs that permit participation. Both in-person and remote services require time to complete the education curriculum (about 8 hours) and schedule and complete the one-on-one counseling session. Those considering in-person services may face additional

time and monetary costs for travel, childcare, and so on.<sup>7</sup> Note too that the value of an hour depends on the characteristics of and opportunity costs faced by the potential participant— those who have better paying jobs, more children, or leisure activities that they may place a greater value on their time compared with those with more free time.

### Hypotheses About the Participation Decision

With this underlying theory in mind, this subsection considers what specific personal characteristics are hypothesized to predict service initiation or completion, both in general and, if appropriate, by service mode. Exhibit 1 summarizes these hypothesized relationships, and it is these variables that are subsequently included in our analysis of the correlates of participation.

<sup>7</sup> Consistent with the story of locational costs, Russell, Moulton, and Greenbaum (2014) showed that proximity to mortgage assistance application intake agencies is related to the odds of submitting a complete application.

**Exhibit 1: Summary of Hypotheses About the Participation Decision**

Domain Variable	Hypotheses About Participation		
	Initiation	Completion	Service Mode
<b>Demographic measures</b>			
Race or ethnicity	<ul style="list-style-type: none"> <li>For fear of encountering discriminatory practices in lending or other aspects of the homebuying process, non-Whites might be more inclined to participate.</li> <li>On the other hand, a legacy of discrimination (and associated distrust of financial institutions and other actors in the housing industry) could lead non-Whites disproportionately to rely on informal networks for advice on the homebuying process, therefore making them less inclined to participate.</li> </ul>		No hypothesis
Gender	<ul style="list-style-type: none"> <li>If women are concerned about discrimination (as is the case in auto lending; Hernandez, 2004), then they might be more inclined than men to participate.</li> <li>If women have lower levels of confidence than men (for example, Evans, 2014), then they might more likely than men to participate.</li> </ul>		No hypothesis
Age	No hypothesis	No hypothesis	Millennials might be more inclined toward participation in remote services, given their life's experience with technology.

**Exhibit 1: Summary of Hypotheses About the Participation Decision**

Domain Variable	Hypotheses About Participation		
	Initiation	Completion	Service Mode
<b>Demographic measures</b>			
Children in home	Parents may find it more difficult logistically to participate.		If remote services offer fewer logistical barriers, then parents may prefer remote to in-person services.
Education	<ul style="list-style-type: none"> <li>• More highly educated people may perceive the services as less necessary and therefore participate at lower rates.</li> <li>• Those with less education may be insecure (or intimidated by the complicated process), perceive a need for services, and therefore participate at higher rates.</li> <li>• Alternatively, those with higher levels of education may be “education-seekers,” increasing their likelihood of participation; whereas, those with lower levels of education may be “education-avoiders,” which would decrease their likelihood of participation.</li> </ul>		Those with more formal education may be more comfortable in classroom (in-person) settings.
<b>Selected attitudes and beliefs (respondent strongly agreed with the statement)</b>			
I usually spend a lot of time planning for large purchases.	Planners are more likely both to initiate and to complete.		No hypothesis
It is easy for me to stick to and accomplish my goals.	No hypothesis	Determination may associate with greater completion.	No hypothesis
I am pretty good at math.	Confidence may associate with lower participation or with higher participation (as with “education seekers”).	Math ability might associate with greater completion.	No hypothesis
<b>Housing arrangements</b>			
Satisfied with pre-purchase housing arrangements	Those less satisfied in their current arrangement may be more likely (because of motivation to change their situation) to participate.		No hypothesis
Stage of homebuyer process	<ul style="list-style-type: none"> <li>• Those earlier in the process may be more likely to participate because of the perceived greater value of the services.</li> <li>• Those later in the process will be less likely to participate if they deem it too late to benefit.</li> </ul>		No hypothesis
Years planned to live in purchased home	Those who plan to live longer in their home may be more likely to participate.		No hypothesis
<b>Selected measures of financial capability and knowledge</b>			
Uses a written budget	<ul style="list-style-type: none"> <li>• Being financially deliberate may associate with greater participation.</li> <li>• If using a written budget is a proxy for being more financially capable, then that type of person may be less likely to participate if such people deem themselves less in need of services.</li> </ul>		No hypothesis

## Exhibit 1: Summary of Hypotheses About the Participation Decision

Domain Variable	Hypotheses About Participation		
	Initiation	Completion	Service Mode
<b>Selected measures of financial capability and knowledge</b>			
Correct answers (out of four) to mortgage literacy quiz	If this measure is a proxy for being financially capable, then it could associate with lower participation if such people deem themselves less in need of services.		No hypothesis
<b>Selected measures of creditworthiness</b>			
Plans to purchase the home with a co-borrower	Having a co-borrower may reduce participation (if having a partner in the process is a proxy for having additional knowledge or support).		Having a co-borrower may make it easier or harder to participate in person.
Credit score	<ul style="list-style-type: none"> <li>Those with better credit may be more likely to participate (out of concern about maintaining good credit).</li> <li>Those with worse credit may be more likely to participate (out of recognition that they need help buying a home).</li> </ul>		No hypothesis
Had mortgage loan application denied	Those with a past mortgage application denial may be more likely to participate (out of recognition that they need help buying a home).		No hypothesis
<b>Given choice of in-person or remote services?</b>			
Choice treatment group indicator	Those offered their choice of mode should be more likely to initiate and complete services that are in line with their preferences for how to receive services.		NA

NA = not applicable.

## Methodology

This section describes the experimental evaluation design of the First-Time Homebuyer Education and Counseling Demonstration, which provides the data for this analysis of service participation. It then describes the sample used for this analysis, data and measures, and the analytic approach used to understand which baseline characteristics of study participants predict participation in homebuyer education and counseling services.

## Evaluation Design

The First-Time Homebuyer Education and Counseling Demonstration used a randomized experimental design, in which eligible prospective first-time homebuyers were randomly assigned to a treatment group that was offered free homebuyer education and counseling services or to a control group that was not offered services. Initially, the study design randomly assigned eligible first-time prospective homebuyers into one of three groups.

- *Control group*—Not referred to homebuyer education or counseling services through the study.

- *Remote treatment group*—Offered free online homebuyer education and telephone counseling.
- *In-person treatment group*—Offered free in-person homebuyer education and counseling.

As detailed by DeMarco et al. (2017), through the first 6 months of study enrollment, the takeup rate—that is, the percentage of participants who had initiated services—for participants offered in-person services was about 26 percent, much lower than the study’s target rate of at least 50 percent. Consequently, HUD and the study team decided to modify the study design such that the in-person treatment group was replaced with a choice treatment group. During the study’s eligibility assessment, the choice treatment group was asked whether they preferred to complete homebuyer education and counseling services in person at a local housing counseling agency or remotely over the internet and by telephone. This baseline preference determined which mode of services choice treatment group members were offered. Study participants who enrolled in the

study on or after September 16, 2014 were randomly assigned to one of these three groups.

- *Control group*—Not referred to homebuyer education or counseling services through the study.
- *Remote treatment group*—Offered free online homebuyer education and telephone counseling.
- *Choice treatment group*—Offered their choice of free remote or in-person homebuyer education and counseling services.

Across the entire study enrollment period, the random assignment ratio was 42 percent control group, 29 percent remote treatment group, and 29 percent in-person or choice treatment group.

The study team used two approaches to encourage study participants assigned to a treatment group to initiate and complete services—outreach and incentive payments. The study team contacted treatment group members during the study’s enrollment period to provide them with information and encourage them to initiate and complete services. Following random assignment, participants who were assigned to a treatment group received up to \$150 to compensate them for the time required to participate in homebuyer education and counseling services. These payments were meant to encourage initiation and completion of the intervention’s offered services.<sup>8</sup>

## Analytic Sample

This analysis uses the individuals who were randomized to one of the study’s treatment groups, and it excludes the control group. We predict service participation separately for treatment group members who were referred to in-person services and treatment group members who were referred to remote services. The sample referred to in-person services includes both treatment group members assigned to the in-person treatment group (prior to the study redesign) and those study participants assigned to the choice group who stated a baseline preference for in-person services. Likewise, the sample referred to remote services

<sup>8</sup> The payment was made in two parts. First, participants received \$50 when they initiated services with their assigned housing counseling agency. Second, they received \$100 when they completed all homebuyer education and counseling services.

includes treatment group members assigned to the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Combining the sample in this manner ensures maximum sample size for each mode of service delivery.<sup>9</sup> Appendix Exhibit A.1 reports the baseline characteristics of those offered in-person and remote services, and further information on the characteristics of the sample is available in the study’s baseline report (DeMarco et al., 2017).

## Data and Measures

The data sources used for this analysis and the measures constructed from them are summarized as follows.

- A baseline survey of study participants and data provided by a credit bureau capture the characteristics of study participants prior to random assignment. These baseline characteristics include measures of study participants’ demographics, attitudes and beliefs, housing arrangements, financial capability and knowledge, and creditworthiness.
- eHome America, ClearPoint, and local housing counseling agencies provided data on the services received by treatment group members.
- A short-term followup survey, administered approximately 12 to 18 months after study participants enrolled in the study, captures reasons why some treatment group members did not complete homebuyer education and counseling services. Overall, 76 percent of treatment group members completed the short-term followup survey.
- A series of focus groups with a small number of treatment group members explored their experiences with homebuyer education and counseling services, including expressed reasons for taking up services or not.

## Analytic Approach

The analysis models the relationship between service participation—including both initiation and completion—and the baseline characteristics of study

<sup>9</sup> This sample combination strategy is in line with the HUD-approved plans for the study’s impact analysis.

participants using ordinary least squares regression. We consider four measures of participation in homebuyer education and counseling services: (1) whether the study participant initiated any services; (2) whether the study participant completed the education curriculum; (3) whether the study participant completed one-on-one counseling; and (4) whether the study participant completed all homebuyer education and counseling services. The model is specified as—

$$P_{is} = \alpha + \beta X_{is} + \delta Choice_{is} + \mu_s + e_{is}, \quad (2)$$

where

- $P_{is}$  is a measure of participation in homebuyer education and counseling services (coded 1 for participants and 0 for nonparticipants) for participant  $i$  in site  $s$ .
- $X_{is}$  is a vector of individual background characteristics for participant  $i$  in site  $s$ .
- $Choice_{is}$  is an indicator for whether participant  $i$  in site  $s$  was given the choice of being referred to in-person or remote services.
- $\mu_s$  is a set of site fixed effects.
- $e_{is}$  is a random error term.<sup>10, 11, 12</sup>

Using ordinary least squares regression, we estimated this model separately for treatment group members who were referred to in-person services and treatment

group members who were referred to remote services.<sup>13</sup> We were primarily interested in the coefficients  $\beta$ , and  $\delta$ :  $\beta$  provides estimates of the relationship between the study participants' baseline characteristics and service participation;  $\delta$  provides an estimate of the relationship between being given the choice of service modes (relative to being offered a mode of services without a choice) on service participation. The baseline characteristics include a wide range of measures capturing study participants' demographics, attitudes and beliefs, housing arrangements, financial capability and knowledge, and creditworthiness, which were hypothesized to predict participation in homebuyer education and counseling services.<sup>14, 15</sup> We selected measures that are either relevant to policy or practice or explicitly hypothesized to have a relationship with service participation. Although the model includes a large and diverse set of these characteristics, we recognize that certain confounding (and otherwise unmeasured) variables may be omitted from the model. Such potential omissions mean that reported estimates should be interpreted as associations between the baseline characteristics and service participation and may not isolate causal relationships.

<sup>13</sup> Findings were generally similar when using logistic regression.

<sup>14</sup> The full set of baseline characteristics included in the model is reported in Exhibits A.2 and A.3.

<sup>15</sup> To avoid analytic problems associated with multicollinearity, Tabachnick, Fidell, and Osterlind (2001) recommended that intercorrelations among covariates should generally be below 0.70. We estimated a correlation matrix of all baseline characteristics included in the prediction model. Among the 53 covariates' 1,378 pairwise comparisons, the vast majority (1,338) showed no correlation (the correlation coefficient was less than 0.30). Among the pairwise comparisons with correlation coefficients greater than or equal to 0.30, 33 showed a low correlation (correlation coefficient of 0.30-0.49), 5 showed a moderate correlation (correlation coefficient of 0.50-0.69), and only 2 showed a high correlation (correlation coefficient of 0.70 or higher). In general, the only covariates that have pairwise correlations greater than 0.50 are those that are part of the same categorical family (for example, married; divorced, widowed, or separated; single and never married). The one exception is the correlation between household size and presence of children—two closely related variables—that have a correlation coefficient of 0.53. Our conclusion is that these correlations should not raise concerns over multicollinearity within the data.

<sup>10</sup> Here, "site" refers to the 28 metropolitan areas where study participants enrolled.

<sup>11</sup> Standard errors are clustered at the site level.

<sup>12</sup> Although all study participants completed the baseline survey, some question-specific nonresponse occurred. Additionally, the baseline credit bureau data matched to about nine-tenths of study participants. To prevent dropping observations with missing data when predicting participation, we followed standard practice (for example, Shroder, 2002); missing values for baseline characteristic data were coded as the reference category for binary or categorical measures and were coded as the sample mean for continuous measures. For example, 1.2 percent of treatment group members had missing race-ethnicity data and were therefore coded as non-Hispanic White (the reference category).

## Findings

Overall, 55 percent of those offered homebuyer education and counseling services initiated any services—that is, they started either the education curriculum or one-on-one counseling (see Exhibit 2). About one-third completed the education curriculum,

about one-third completed one-on-one counseling, and one-fourth completed all services.<sup>16</sup>

<sup>16</sup> We do not examine having completed only the education curriculum or only the one-on-one counseling.

**Exhibit 2: Service Initiation and Completion Rates, by Mode of Services Offered**

	Initiated Any Services (%)	Completed Education Curriculum (%)	Completed One-on-One Counseling (%)	Completed All Services (%)	Sample Size
Choice treatment group (in-person preference) <sup>a</sup>	32.0	25.8	17.9	15.5	291
In-person treatment group	26.0	23.6	16.1	14.1	516
Difference 6.0	2.1	1.8	1.3	—	
Choice treatment group (remote preference) <sup>b</sup>	64.3	34.9	43.8	31.0	856
Remote treatment group	63.3	31.3	43.2	27.1	1,670
Difference	1.0	3.6	0.6	3.8*	—
Full treatment group sample	55.0	30.6	37.0	25.1	3,333

\* Difference is statistically significant (two-sided t-test) at the  $p < 0.05$  level.

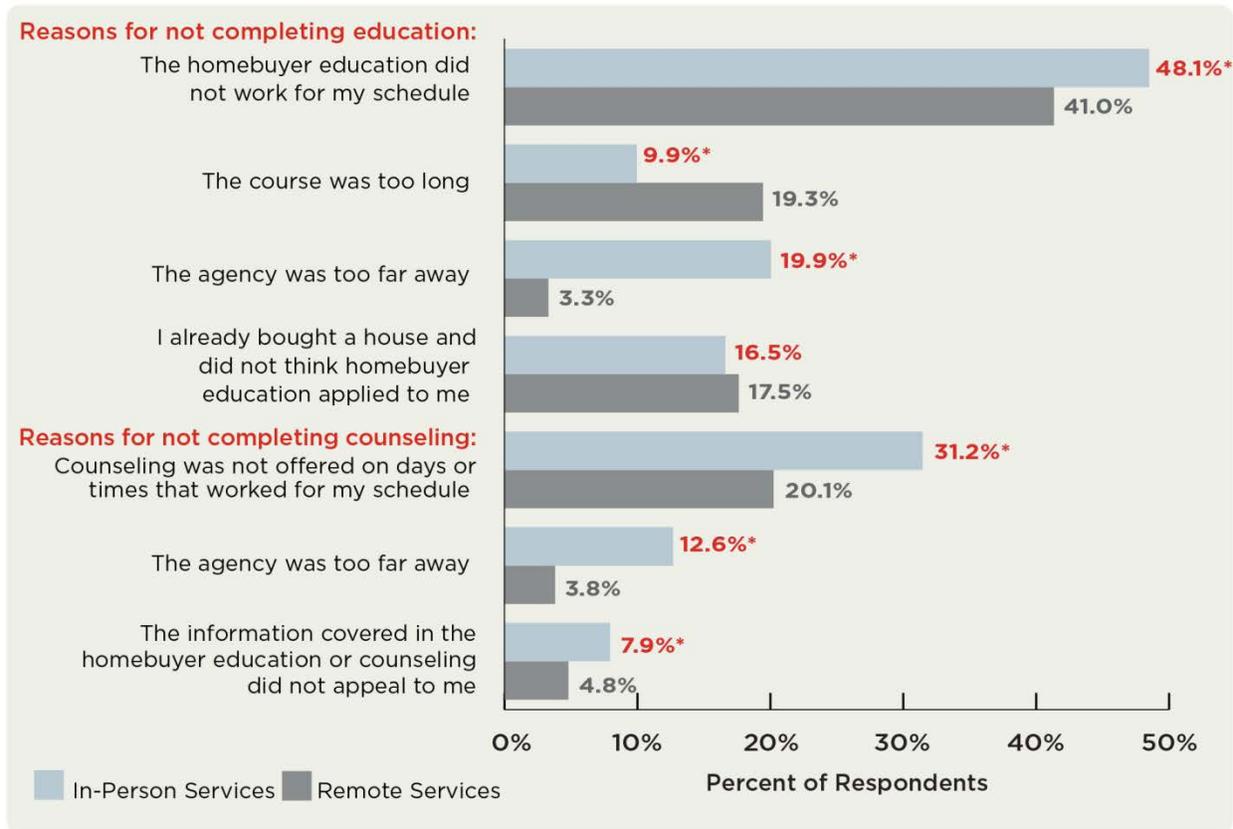
<sup>a</sup> Includes choice treatment group members who stated a baseline preference for in-person services. Choice treatment group members were permitted to change their preference after random assignment. In total, 39 choice group members changed preference from in-person to remote after random assignment. Of the 39 choice group members who changed preference from in-person to remote after random assignment, 26 initiated remote services, and 10 completed all remote services.

<sup>b</sup> Includes choice treatment group members who stated a baseline preference for remote services. Choice treatment group members were permitted to change their preference after random assignment. In total, one choice group member changed preference from remote to in-person after random assignment. The choice group member who changed preference from remote to in-person after random assignment initiated in-person services but did not complete all in-person services.

Note: Study participants who withdrew from the study are excluded.

Sources: Takeup data from eHome America, ClearPoint, and local housing counseling agencies

### Exhibit 3: Survey Respondents' Reasons for Not Completing Services



\* Difference between the in-person and remote group is statistically significant ( $p < 0.05$ ).

Notes: For the “Reasons for not completing education” panel, the in-person services sample includes 443 treatment group members who did not complete the offered in-person education curriculum and answered the followup survey, and the remote services sample includes 1,136 treatment group members who did not complete the offered remote education curriculum and answered the followup survey. For the “Reasons for not completing counseling” panel, the in-person services sample includes 493 treatment group members who did not complete the offered in-person one-on-one counseling and answered the followup survey, and the remote services sample includes 896 treatment group members who did not complete the offered remote one-on-one counseling and answered the followup survey.

Source: Short-term followup survey of study participants

The rates at which study participants initiated or completed services differ meaningfully between the in-person and remote service modes, with both initiation and completion rates much lower for those offered in-person services than for those offered remote services. Nearly two-thirds of those offered remote services (63 percent) initiated either online education or telephone counseling. In contrast, slightly more than one-fourth (26 percent) of those offered in-person services initiated either an in-person education workshop or counseling. About 27 percent of those offered remote services completed all homebuyer education and counseling services, and about 14 percent of those offered in-person services completed all services.

As noted previously, the low takeup and completion rates for in-person services as of September 2014 led the study team to redesign the original in-person treatment group as a choice treatment group, in which study participants assigned to this group could choose in-person or remote services. Exhibit 2 presents service initiation and completion rates for the choice treatment group—separately for those who expressed a preference at baseline for receiving in-person services and for those who expressed a preference at baseline for receiving remote services.

Some patterns are apparent from examining the choice treatment group by the expressed preference for mode of service. First, study participants clearly preferred remote services—a full three-fourths of the

sample stated a preference for receiving remote services at study enrollment, as shown by the sample sizes (856 versus 291) for choice treatment group members with remote and in-person preferences. This finding is consistent with prior research, which has found that people prefer online education and telephone counseling to in-person services (Baron and Staten, 2012). Furthermore, choice treatment group members who expressed a preference for in-person services had a service initiation rate of 32 percent, notably lower than the 64 percent initiation rate for those who expressed a preference for remote services, despite the service mode offer being in line with their stated preference.

The vast majority (three-fourths) of the choice group selected remote services, and those who selected remote services experienced relatively high participation rates. This finding shows that the study redesign (replacing the in-person treatment group with a choice treatment group) successfully increased participation rates for the full treatment group sample. That said, we do not generally find evidence that those in the choice group had higher participation rates than those in the in-person or remote treatment groups who were offered the same service, once controlling for other factors. For example, although 63 percent of the remote treatment group initiated any homebuyer education and counseling services, 64 percent of choice treatment group members who selected remote services initiated any services. This 1-percentage point difference in initiation rates is not statistically significant, indicating that those given the choice of services who select remote are no more or less likely to initiate services as those offered remote services without a choice. The one exception to this general pattern is that choice treatment group members who expressed a preference for remote services were more likely to complete all homebuyer education and counseling services (by nearly 4 percentage points) relative to those offered remote services without a choice.

### **Reasons for Participating or Not Participating in Services**

This section begins by reporting followup survey respondents' reasons for not completing services. It then reports reasons reported by focus groups for participating in services (or not).

### **Survey Respondents' Reasons for Not Completing Services**

According to responses to the short-term followup survey, the primary reason for not completing services was inconvenience (see Exhibit 3). When asked why they did not complete the education curriculum, 48 percent of those offered the in-person education curriculum and 41 percent of those offered the remote education curriculum reported that "homebuyer education did not work for my schedule." Similarly, those who did not complete one-on-one counseling indicated that inconvenient scheduling was a barrier, with 31 percent of those offered in-person counseling and 20 percent of those offered remote counseling reporting that "counseling was not offered on days or times that worked for my schedule." Those who did not complete in-person services were generally more likely to cite scheduling concerns relative to those who did not complete remote services.

Of those offered in-person services, 20 percent reported "the agency was too far away" as an obstacle to their participation in the education curriculum, and 13 percent reported "the agency was too far away" as an obstacle to their participation in one-on-one counseling. A few study participants who were offered access to remote services also gave reasons related to location, which may reflect a misunderstanding (or faulty memory) of the services they had been offered (DeMarco et al., 2016).

Interestingly, those offered the remote education curriculum were twice as likely to report that the length of "the course was too long" compared with those offered the in-person education curriculum, 19 versus 10 percent. This finding indicates that a day-long, in-person education workshop was generally perceived as acceptable by those offered in-person services, but those offered remote services were reluctant to spend the same amount of time in front of a computer.

Fewer than 10 percent of those who did not complete one-on-one counseling services—regardless of the service mode offered to them—reported that unappealing content was the reason. A somewhat larger percentage (about 17 percent) said that they thought the education curriculum did not apply

to them, because they had already bought a house (DeMarco et al., 2016).<sup>17, 18</sup>

Additional insights on reasons for engaging and not engaging in the services offered come from the study's focus groups. Focus group participants who were offered remote and in-person services said that the primary reason they took up homebuyer education and counseling services was because they believed the information would be valuable. However, the reasons given for not taking up services tended to differ based on whether people had been offered in-person services or remote services. Consistent with the survey results, those offered in-person services reported more logistical barriers in completing services than those offered remote services.

### Focus Group Participants' Reasons for Not Participating in Services

Focus group participants were recruited for their ability to discuss reasons why they did or did not participate in the study's services. Many focus group participants said that, prior to hearing about the study, they were not aware of homebuyer education and counseling services. Reasons nonparticipants gave for their nonparticipation in services included busy schedules, childcare needs, and the education curriculum being too long. The reasons tended to vary by service delivery mode. Those who had been referred to in-person services spoke about scheduling difficulties, the length of the course, and the agency's location. Those who had been offered remote services also cited their schedules and the length of the course as reasons for not participating in services. They also said that they already spend too much time on a computer throughout the day and did not want to spend another 6 to 8 hours on a computer completing the education curriculum. Some participants said they "just haven't gotten around to it yet." Some focus group participants who had not engaged in the

<sup>17</sup> The study team conducted outreach to all treatment group study participants to encourage take up and completion of homebuyer education and counseling services through the study. Through these outreach efforts, the study team assessed participants' stage in the homebuying process (that is, not yet started home search, visited homes, made an offer, already purchased, and so on) and emphasized how certain topics covered would be relevant to their situation. Regardless of the stage in the homebuying process, the study team encouraged participants to engage in services.

<sup>18</sup> Of those treatment group members who had already purchased a home as of study enrollment, 26 percent completed education.

services explained that they relied on other sources of information about the homebuying process, including friends, family, or their realtor (DeMarco et al., 2017).

### Focus Group Participants' Reasons for Participating in Services

Among those focus group participants who did take up the offer of services, many said that they did so because they expected the homebuying process would be complicated and stressful, and they thought the information provided through education and counseling would help them through the process. A few participants noted that their past attempts to buy a home had been unsuccessful, and they thought completing education and counseling might help them succeed. Interestingly, findings from this participation analysis (reported in Exhibit 5) indicate that those who had had a mortgage loan application denied by another lender are actually less likely to take up remote services.

Focus group participants expressed the view that the decision to buy a home was important and would have a big impact on their future. Some focus group participants also noted that access to free services and the study's incentive payment for completing education and counseling encouraged them to take up services (DeMarco et al., 2017).

### Predictors of Participation in In-Person Services

For this analysis, we explored whether a wide range of measures related to study participants' demographics, attitudes and beliefs, housing arrangements, financial capability and knowledge, and creditworthiness predicts participation. This first section considers how these measures predict participation specifically in in-person services. Appendix Exhibit A.2 reports the full results. Here, we distill the information—both excluding results that are not statistically significant and excluding discussion of the coefficients' magnitude—for focus on more general patterns. Exhibit 4 reports these abbreviated findings, indicating a "+" symbol where the baseline characteristic has a statistically significant *positive* effect on service participation (at the  $p < 0.05$  significance level). Correspondingly, the "-" symbol indicates that the baseline characteristic has a statistically significant *negative* effect on service participation (again, at the  $p < 0.05$  significance level).

#### Exhibit 4: Predictors of Participation in In-Person Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic measures</b>				
Race or ethnicity (reference: non-Hispanic White)				
Hispanic				
Black/African American		+		
Other race				
Male (reference: female)	-	-	-	-
Age (reference: under 30)				
30 to 45				
46 or older				
Plans to have children in purchased home		-		
Education (reference: bachelor's degree or higher)				
Associate's degree				
Some college, but no degree	-	-	-	-
High school diploma or less				
<b>Selected attitudes and beliefs (respondent strongly agreed with the statement)</b>				
I usually spend a lot of time planning for large purchases				
It is easy for me to stick to and accomplish my goals				
I am pretty good at math	+	+		
<b>Housing arrangements</b>				
Satisfied with prepurchase housing arrangements				
Made an offer, signed a purchase agreement, or purchased a home (reference: early stage)	-	-	-	-
Years planned to live in purchased home (reference: less than 6 years)				
6 to 10 years				
11 years or more				
<b>Selected measures of financial capability and knowledge</b>				
Uses a written budget				
Number of correct answers (out of 4) to mortgage literacy quiz				

Notes: The sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures. Exhibit A.2 shows the coefficients for all the variables considered as predictors of participation in in-person services. This exhibit provides an abbreviated presentation of these findings, where the “+” symbol indicates that the baseline characteristic has a statistically significant positive effect on service participation at the  $p < 0.05$  significance level. Corresponding, the “-” symbol indicates that the baseline characteristic has a statistically significant negative effect on service participation at the  $p < 0.05$  significance level.

Sources: Participation data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data.

#### Exhibit 4: Predictors of Participation in In-Person Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Selected measures of creditworthiness</b>				
Plans to purchase the home with a co-borrower	–	–		
Credit score (reference: 740 or more)				
Less than 620				
620 to 679				
680 to 739				
Had mortgage loan application denied by another lender				
<b>Given choice of in-person or remote services?</b>				
Choice treatment group indicator				
<b>Summary information</b>				
Mean of participation indicator	28.1%	24.4%	16.7%	14.6%
Sample size	807	807	807	807
R-squared	0.166	0.187	0.144	0.155

Notes: The sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures. Exhibit A.2 shows the coefficients for all the variables considered as predictors of participation in in-person services. This exhibit provides an abbreviated presentation of these findings, where the “+” symbol indicates that the baseline characteristic has a statistically significant positive effect on service participation at the  $p < 0.05$  significance level. Correspondingly, the “–” symbol indicates that the baseline characteristic has a statistically significant negative effect on service participation at the  $p < 0.05$  significance level.

Sources: Participation data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data.

Across all four measures of in-person service participation (initiated any services, completed education curriculum, completed one-on-one counseling, and completed all services), men were less likely than women to participate in in-person services.<sup>19</sup>

Next, education is also associated with participation. Those with some college but no degree were less likely to participate in services relative to those with a bachelor’s degree or higher.<sup>20</sup> Those with a bachelor’s degree or higher may generally be more motivated to

participate in services or more comfortable with the idea, or their greater experience with formal education may make them amenable to engaging in services such as those offered in this demonstration.

Race or ethnicity, age, marital status, and household size were generally not statistically significant predictors of participation in in-person services.

Treatment group members who indicated that they were “pretty good at math” were more likely to initiate in-person services and to complete the in-person education curriculum, as hypothesized. One possible explanation for this finding is that those who were less confident in their quantitative skills might be apprehensive about attending an in-person education workshop in which they might have to reveal their vulnerabilities by, for example, being called on to answer a quantitative question in a group setting.

<sup>19</sup> Using data from the short-term followup survey, we tested whether men and women gave different reasons for not completing services (see Exhibit 3 for common survey responses). For example, we tested whether men were more likely than women to say “homebuyer education did not work for my schedule.” We did not find any evidence that men and women gave different reasons for not completing services.

<sup>20</sup> Those with a high school diploma or less are also generally less likely to participate in services relative to those with a bachelor’s degree or higher, but service participation is not statistically different across these two groups.

Treatment group members at a later stage of the home purchase process at the time of study enrollment (that is, those who had already made an offer, signed a purchase agreement, or purchased a home) were generally less likely to participate in in-person services relative to those at an earlier stage in the process, as hypothesized. Those who were further along in the home purchase process may believe they have less to gain from the education curriculum, because they may have already made decisions or completed the necessary steps on the path toward homeownership. Responses to the short-term followup survey affirm that those further along in the home purchase process were more likely than those at earlier stages to indicate that they did not think the education curriculum applied to them. As an alternative explanation, those who had already purchased a home might not want to learn that any of their past decisions were misguided.

Those who planned to purchase a home with a co-borrower were less likely than those who planned to purchase a home solo to initiate any in-person services or complete the in-person education curriculum. A possible explanation is that those who planned to purchase with a co-borrower may feel that the education curriculum has less value, because they have added help navigating the home purchase process. Further, as hypothesized, the presence of a co-borrower may increase the challenge of scheduling a time for in-person services if both individuals would want to attend.<sup>21</sup>

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<sup>21</sup> Co-borrowers were permitted to accompany the study participant to in-person services.

Interesting to note is that measures of financial capability and knowledge were not meaningful predictors of participation in in-person services. Likewise, no evidence showed that those given the choice of in-person or remote services were more likely to participate in in-person services relative to those who were referred to in-person services without a choice.<sup>22</sup>

### **Predictors of Participation in Remote Services**

The same wide range of measures related to study participants' demographics, attitudes and beliefs, housing arrangements, financial capability and knowledge, and creditworthiness were examined with respect to participation in remote services. (See Appendix Exhibit A.3 for full results.) As with the in-person services participation analysis, Exhibit 5 provides an abbreviated presentation of these findings, where the "+" symbol indicates that the baseline characteristic has a statistically significant positive effect on service participation, and the "-" symbol indicates that the baseline characteristic has a statistically significant negative effect on service participation (at the  $p < 0.05$  significance level).

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<sup>22</sup> These findings align with those presented in Exhibit 2, in which, using a simple t-test, we found no evidence that participation rates for choice treatment group members who selected in-person services were different from participation rates for the in-person group.

**Exhibit 5: Predictors of Participation in Remote Services**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic measures</b>				
Race or ethnicity (reference: non-Hispanic White)				
Hispanic			-	
Black/African American				
Other race			-	
Male (reference: female)	-	-	-	-
Age (reference: under 30)				
30 to 45			+	
46 or older				
Plans to have children in purchased home				
Education (reference: bachelor's degree or higher)				
Associate's degree				
Some college, but no degree		-		-
High school diploma or less	-	-	-	-
<b>Selected attitudes and beliefs (respondent strongly agreed with the statement)</b>				
I usually spend a lot of time planning for large purchases			+	
It is easy for me to stick to and accomplish my goals				
I am pretty good at math				
<b>Housing arrangements</b>				
Satisfied with prepurchase housing arrangements	-			
Made an offer, signed a purchase agreement, or purchased a home (reference: early stage)				
Years planned to live in purchased home (reference: less than 6 years)				
6 to 10 years	+	+	+	+
11 years or more		+	+	+
<b>Selected measures of financial capability and knowledge</b>				
Uses a written budget		+		
Number of correct answers (out of 4) to mortgage literacy quiz		+	+	+

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures. Exhibit A.3 reports the coefficients for all the variables considered as predictors of participation in remote services. This exhibit provides an abbreviated presentation of these findings, in which the “+” symbol indicates that the baseline characteristic has a statistically significant positive effect on service participation at the p<0.05 significance level. Correspondingly, the “-” symbol indicates that the baseline characteristic has a statistically significant negative effect on service participation at the p<0.05 significance level.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data

## Exhibit 5: Predictors of Participation in Remote Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Selected measures of creditworthiness</b>				
Plans to purchase the home with a co-borrower				
Credit score (reference: 740 or more)				
Less than 620				
620 to 679	–		–	
680 to 739	–	–	–	–
Had mortgage loan application denied by another lender				
	–			
<b>Given choice of in-person or remote services?</b>				
Choice treatment group indicator				+
<b>Summary information</b>				
Mean of participation indicator	63.6%	32.5%	43.4%	28.4%
Sample size	2,526	2,526	2,526	2,526
R-squared	0.068	0.063	0.060	0.063

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures. Exhibit A.3 reports the coefficients for all the variables considered as predictors of participation in remote services. This exhibit provides an abbreviated presentation of these findings, in which the “+” symbol indicates that the baseline characteristic has a statistically significant positive effect on service participation at the  $p < 0.05$  significance level. Correspondingly, the “–” symbol indicates that the baseline characteristic has a statistically significant negative effect on service participation at the  $p < 0.05$  significance level.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data

Across all four measures of remote service participation, men were less likely than women to participate in remote services. In addition, treatment group members with lower levels of educational attainment at baseline were less likely to participate in remote services relative to those with a bachelor’s degree or higher.

Across both the in-person and remote service modes, study participants were generally more likely to participate in homebuyer education and counseling services if they were female or had a college degree, indicating that these traits were important predictors of service participation regardless of service mode.

Those who planned to live in their purchased home for 6 or more years were generally more likely to participate in remote services than those who planned to live in their home for less time. One possible explanation is that those who planned to live in their purchased home long term may be more motivated to seek education

and counseling to ensure that they are making the best possible decision for their future, as hypothesized.

Those with higher scores on a four-question baseline measure of baseline mortgage knowledge were more likely to participate in remote services than those with lower scores. Those with more baseline knowledge about the home purchase process may be more interested in or comfortable with engaging in homebuyer education and counseling services. In contrast, this finding implies that those who have less mortgage knowledge are less likely to engage in services, although they may benefit most from these services.

Related to measures of creditworthiness, those with a baseline credit score of 740 and higher were more likely to participate than those with scores between 620 and 739. A possible reason for this observation is that those with higher baseline credit scores may be more incentivized to participate in services to maintain their

good credit. In comparison, they may derive utility from attending classes that reinforce what they have already learned or engaging with a counselor that commends them for their good credit.

Finally, those given the choice of in-person or remote services who chose the remote service mode were more likely to complete all homebuyer education and counseling services relative to those who were referred to remote services without a choice. However, we find that study participants who chose remote services were not statistically significantly more or less likely to initiate any services compared with those offered remote services.

## Discussion and Conclusion

This report examines a large array of traits and identifies some patterns related to service participation. Across both in-person and remote service modes, we find the following.

- **Women were more likely to participate in homebuyer education and counseling services.** This finding is in line with our prior hypothesis that women might be more likely to participate (due to perceived or actual discrimination in financial markets or due to gender differences in confidence).
- **Those with relatively greater education were more likely to participate** in homebuyer education and counseling services. Our prior hypotheses posited explanations for either direction of effect; and the results of this analysis provide support for the hypothesis that those with greater education (perhaps, because of their being “education seekers”) are those who are more likely to participate.
- **Race or ethnicity, age, marital status, and household size were not statistically significant predictors of participation** in homebuyer education and counseling services.

Considering in-person services specifically, we find that—

- Those referred to in-person services were **more likely to participate** in homebuyer education and counseling services if they were at an **early stage of the homebuying process** at the time of study

enrollment. They also were more likely to complete the education curriculum if they reported **being “pretty good at math”** or if they **planned to purchase a home without a co-borrower**. We do not find that these same traits were associated with participation in remote services.

Considering remote services specifically, we find that—

- Those referred to remote services were more **likely to participate** in services if they planned to **spend more years living in their purchased home, scored better on a baseline mortgage literacy quiz, or had a baseline credit score of 740 or higher**. We do not find evidence that these same traits were associated with participation in in-person services.

Considering offering treatment group members their choice of participating in in-person services or in remote services, we find that—

- Those given a choice of service mode were equally as likely to participate in services as those offered services without a choice. This indicates that **providing clients with the choice of in-person or remote service modes does not generally lead to greater (or lesser) participation**, once controlling for other factors.

Findings from focus groups and followup survey responses provide insight into treatment group members’ reasons for engaging in services, with some apparent differences between those offered in-person and remote services. Treatment group members participating in focus groups reported that they took up services, because they knew the homebuying process would be complicated, and they believed the information provided through homebuyer education and counseling services would help them through the process. Reasons for not taking up services or not completing services tended to vary by service delivery mode. Those who had been referred to in-person services spoke about scheduling difficulties, the length of the course, and the agency’s location. Those who had been offered remote services cited competing priorities on their schedules and the length of the course (DeMarco et al., 2017).

Agencies providing homebuyer education and counseling services may find these findings informative

to their messaging, outreach, and approach to providing services. For example, the fact that certain traits are associated with participation in services may inform the way agencies decide to market and provide their services to meet potential clients' interests, preferences, and needs. For example, messages that connect to the findings reported here include the following.<sup>23</sup>

- **“I’m good at math**, but I’m not going to commit to a \$300,000 mortgage without some preparation.”
- **“I went to school for 4 years to get the right job**, I can go to school for 8 hours to get the right house.”
- **“I have good credit**, and I want it to stay that way after I buy a house.”
- **“I’m single**, but I’m tired of renting.”
- **“I am a woman**, and I want a house of my own.”

The analysis of factors associated with participation considers a wide variety of traits that exist in populations outside of this study sample, including those of clients suited to homebuyer education and counseling services. That said, it is important to recall that this research sample comes by way of lender referrals and differs somewhat from the standard clientele that agencies target and serve.<sup>24</sup> The referral process excluded people who had a participation requirement associated with a downpayment assistance program, and the referral process also largely included people who were not familiar with homebuyer education services. This report’s findings, therefore, are most relevant to populations that are similar to this study sample at baseline: low-, moderate-, and middle-income households that have contacted a mortgage lender about acquiring a mortgage for a first-time home purchase. Differences in the demographic makeup of the study sample and other groups—such as all renters, all first-time homeowners, and other prepurchase

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<sup>23</sup> We are grateful to Mark Shroder for making these specific suggestions.

<sup>24</sup> For instance, the study sample contains a comparatively large share of men relative to the population of prepurchase homebuyer education and counseling clients. The study sample is also more highly educated and has higher average income than the population of prepurchase homebuyer education and counseling clients (DeMarco et al., 2017).

homeownership education and counseling clients—indicate the potential that this report’s findings may not fully carry over to the other groups. Still, the study sample includes a large number of participants who vary in their sociodemographic composition across 28 large metropolitan areas and have characteristics that reflect a sizable share of the population of low-, moderate-, and middle-income prospective first-time homebuyers. In sum, the report findings offer evidence on which characteristics predict service participation and experiences with services for a robust sample of low-, moderate-, and middle-income prospective first-time homebuyers (DeMarco et al., 2017).

The analysis of factors associated with participation considers a wide variety of traits that exist in populations outside of this study sample, including those of clients suited to homebuyer education and counseling services. That said, it is important to recall that this research sample comes by way of lender referrals and differs somewhat from the standard clientele that agencies target and serve.<sup>25</sup>

It is also important to note that this analysis does not reveal whether homebuyer education and counseling services are effective, or whether one mode of service provision is more effective than the other. Instead, the analysis provides an assessment of which individual traits associate with service participation. Interested readers should refer to the study’s Early Insights Report (DeMarco et al., 2016) for initial estimates of the impact of offering homebuyer education and counseling services on selected outcomes and to the study’s forthcoming Short-Term Impact Report for analysis of impacts on a more complete set of outcomes, both overall and by service mode. Until then, the research presented here highlights the preferences and traits associated with service participation for the study sample of HUD’s First-Time Homebuyer Education and Counseling Demonstration.

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<sup>25</sup> For instance, the study sample contains a comparatively large share of men relative to the population of prepurchase homebuyer education and counseling clients. The study sample is also more highly educated and has higher average income than the population of prepurchase homebuyer education and counseling clients (DeMarco et al., 2017).

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## Appendix: Complete Results

This appendix presents the complete results for the analyses. To begin, Exhibit A.1 reports the baseline characteristics of the in-person and remote samples, Exhibit A.2 shows the coefficients for all the variables considered as predictors of participation in in-person services, and Exhibit A.3 reports the coefficients for all the variables considered as predictors of

participation in remote services. Thereafter, Exhibit A.4 shows which coefficients are statistically significantly different between the two modes of service. Relatively few factors differ between the two service modes, and because it is no more than one would expect by chance, we put relatively little weight into the specific differences.

**Exhibit A.1: Baseline Characteristics of In-Person and Remote Samples**

	Mean of Baseline Characteristic for In-Person Group	Mean of Baseline Characteristic for Remote Group
<b>Demographic measures</b>		
Race or ethnicity		
Hispanic	30.2	23.1*
Non-Hispanic White	33.3	39.9*
Black/African American	23.7	19.8*
Asian non-Hispanic	9.9	12.7*
Other race	2.9	4.5*
Male	57.6	60.2
Age		
Under 30	28.9	33.3*
30 to 45	43.9	44.7
46 or older	27.2	22.0*
Marital status		
Married	38.0	37.6
Divorced, widowed, or separated	16.3	14.6
Single and never married	45.7	47.7
Household size		
One	23.0	23.4
Two	31.4	31.5
Three	19.4	20.4
Four	16.7	14.0*
Five	6.9	6.6
Six or more	2.6	3.9*

\* Statistically significant at the  $p < 0.05$  level (t-test on the difference in means across the in-person group and remote group samples).

Notes: The in-person group sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. The remote group sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Given that the in-person group and remote groups each contain a selected sample of the choice group, we do not expect baseline characteristics to be balanced across these two samples. Study participants who withdrew from the study are excluded. Actual Ns for each study measure vary slightly from figures presented in the sample size row.

Sources: Data on baseline characteristics are from the baseline survey of study participants; credit bureau data

## Exhibit A.1: Baseline Characteristics of In-Person and Remote Samples

	Mean of Baseline Characteristic for In-Person Group	Mean of Baseline Characteristic for Remote Group
<b>Demographic measures</b>		
Plans to have children in purchased home	40.0	38.1
Education		
Bachelor's degree or higher	50.9	55.4*
Associate's degree	14.3	12.4
Some college, but no degree	18.4	15.8*
High school diploma or less	16.4	16.3
As a student, I enjoyed going to school	39.3	35.3*
I usually spend a lot of time planning for large purchases	42.7	45.3
It is easy for me to stick to and accomplish my goals	40.0	37.4
I am pretty good at math	37.8	38.5
<b>Housing arrangements</b>		
Satisfied with prepurchase housing arrangements	65.1	68.8*
Stage In the homebuying process		
Not yet started, started but no visits, or visited homes but did not make offers	53.6	46.5*
Made an offer, signed a purchase agreement, or purchased a home	46.4	53.5*
Years planned to live in purchased home		
Less than 6 years	16.8	19.4*
6 to 10 years	30.5	35.4*
11 years or more	52.7	45.2*
<b>Measures of financial capability and knowledge</b>		
Uses a written budget	73.0	74.3
Usually pays credit card balance in full to avoid interest charges	78.2	77.8
Over the past year, was short on money sometimes or often	17.5	15.1*
Sets aside extra money for retirement, education, or to build a financial cushion sometimes or often	91.7	91.8
Study participant searched for information about the mortgage loans available from multiple lenders	61.9	66.9*
Number of correct answers (out of 4) to mortgage literacy quiz	2.6	2.7*
Respondent would rather receive 40 dollars now than 50 dollars a month from now	18.4	17.3

\* Statistically significant at the  $p < 0.05$  level (t-test on the difference in means across the in-person group and remote group samples).

Notes: The in-person group sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. The remote group sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Given that the in-person group and remote groups each contain a selected sample of the choice group, we do not expect baseline characteristics to be balanced across these two samples. Study participants who withdrew from the study are excluded. Actual Ns for each study measure vary slightly from figures presented in the sample size row.

Sources: Data on baseline characteristics are from the baseline survey of study participants; credit bureau data

**Exhibit A.1: Baseline Characteristics of In-Person and Remote Samples**

	Mean of Baseline Characteristic for In-Person Group	Mean of Baseline Characteristic for Remote Group
<b>Measures of creditworthiness</b>		
Employment		
Full-time (30+ hours per week)	88.0	90.9*
Part-time (1–29 hours per week)	4.6	3.6
Not currently employed	7.4	5.5*
Plans to purchase the home with a co-borrower		
\$24,999 or less	9.3	7.9
\$25,000 to \$49,999	38.8	33.0*
\$50,000 to \$74,999	30.9	32.5
\$75,000 to \$99,000	12.8	15.8*
\$100,000 or more	8.4	10.8*
Credit score		
Less than 620	13.1	9.9*
620 to 659	15.3	14.6
660 to 739	36.0	37.9
740 or more	35.7	37.6
Had mortgage loan application denied by another lender	6.0	6.1
Previously lost a home or other property through foreclosure	4.7	3.9
Cash on hand for downpayment and closing costs (in thousands)	29,514	33,116
Monthly payment nonhousing debt (in hundreds)	332	356
<b>Given choice of in-person or remote services?</b>		
Choice treatment group indicator	36.1	33.9
<b>Summary information</b>		
Sample size	807	2,526

\* Statistically significant at the  $p < 0.05$  level (t-test on the difference in means across the in-person group and remote group samples).

Notes: The in-person group sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. The remote group sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Given that the in-person group and remote groups each contain a selected sample of the choice group, we do not expect baseline characteristics to be balanced across these two samples. Study participants who withdrew from the study are excluded. Actual Ns for each study measure vary slightly from figures presented in the sample size row.

Sources: Data on baseline characteristics are from the baseline survey of study participants; credit bureau data

## Exhibit A.2: Relationship Between Sample Traits and Participation in In-Person Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic measures</b>				
Race/ethnicity (reference: non-Hispanic White)				
Hispanic	- 8.2	- 5.5	- 2.6	- 1.6
Black/African American	6.6	11.0*	5.4	6.7
Other race	4.0	7.9	4.4	5.2
Male (reference: female)				
	- 12.0*	- 11.0*	- 10.8*	- 10.3*
Age (reference: under 30)				
30 to 45	- 4.3	- 4.7	- 4.8	- 3.3
46 or older	5.1	2.3	2.6	2.1
Marital status (reference: single and never married)				
Married	- 0.4	3.1	5.2	5.4
Divorced, widowed, or separated	- 4.3	- 4.2	2.0	- 0.2
Household size (reference: one)				
Two	- 1.2	- 2.2	- 6.6	- 5.9
Three or four	2.1	0.8	- 5.4	- 6.6
Five or more	- 0.2	- 3.4	- 10.4	- 10.7
Plans to have children in purchased home				
	- 2.7	- 7.0*	2.4	0.3
Education (reference: bachelor's degree or higher)				
Associate's degree	8.4	5.9	3.6	1.5
Some college, but no degree	- 8.9*	- 10.1*	- 11.7*	- 11.1*
High school diploma or less	- 6.2	- 5.1	- 4.2	- 4.3
<b>Attitudes and beliefs (respondent strongly agreed with the statement)</b>				
As a student, I enjoyed going to school	- 0.8	0.8	- 3.0	- 2.0
I usually spend a lot of time planning for large purchases	2.1	1.2	3.2	3.0
It is easy for me to stick to and accomplish my goals	- 2.0	- 0.7	0.2	1.3
I am pretty good at math	9.3*	7.9*	5.3	4.1

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data

## Exhibit A.2: Relationship Between Sample Traits and Participation in In-Person Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Housing arrangements</b>				
Satisfied with prepurchase housing arrangements	- 2.3	- 2.8	- 3.1	- 1.9
Made an offer, signed a purchase agreement, or purchased a home (reference: early stage)	- 9.9*	- 10.0*	- 6.6*	- 7.6*
Years planned to live in purchased home (reference: less than 6 years)				
6 to 10 years	1.6	1.1	1.5	1.7
11 years or more	1.8	0.2	0.9	0.4
<b>Measures of financial capability and knowledge</b>				
Uses a written budget	- 0.3	- 1.0	2.4	1.3
Usually pays credit card balance in full to avoid interest charges	- 0.3	- 1.6	1.9	0.4
Over the past year, was short on money sometimes or often	1.4	3.3	- 2.3	- 0.3
Sets aside extra money for retirement, education, or to build a financial cushion sometimes or often	- 5.8	- 3.7	- 1.4	- 0.8
Study participant searched for information about the mortgage loans available from multiple lenders	- 0.7	2.1	- 1.7	0.7
Number of correct answers (out of 4) to mortgage literacy quiz	- 0.4	- 0.6	- 0.9	- 0.8
Respondent would rather receive 40 dollars now than 50 dollars a month from now	- 5.1	- 2.5	- 5.2	- 3.7
<b>Measures of creditworthiness</b>				
Employment (reference: full-time employment [30+ hours per week])				
Part-time (1–29 hours per week)	- 4.5	0.6	5.0	7.5
Not currently employed	7.0	2.6	11.2	7.1
Plans to purchase the home with a co-borrower	- 7.8*	- 6.3*	- 5.4	- 4.3
Income received by participant and any co-borrowers in past 12 months (reference: \$75,000 or more)				
\$24,999 or less	1.5	- 0.2	2.2	0.7
\$25,000 to \$49,999	- 0.8	- 0.9	4.1	3.7
\$50,000 to \$74,999	6.0	6.1	1.3	2.8

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data

### Exhibit A.2: Relationship Between Sample Traits and Participation in In-Person Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Measures of creditworthiness</b>				
Credit score (reference category: 740 or more)				
Less than 620	0.0	- 2.3	- 3.3	- 3.7
620 to 679	3.6	7.0	- 1.1	- 1.0
680 to 739	- 3.1	- 1.9	- 3.8	- 4.0
Had mortgage loan application denied by another lender	1.1	- 2.1	2.9	1.8
Previously lost a home or other property through foreclosure	2.6	0.3	- 4.0	- 4.2
Cash on hand for downpayment and closing costs (in thousands)	0.0	0.0	0.0	0.0
Monthly payment nonhousing debt (in hundreds)	- 1.0*	- 1.3*	- 0.1	- 0.4
<b>Given choice of in-person or remote services?</b>				
Choice treatment group indicator	3.8	0.4	- 1.2	- 0.9
<b>Summary information</b>				
Mean of participation indicator	28.1%	24.4%	16.7%	14.6%
Sample size	807	807	807	807
R-squared	0.166	0.187	0.144	0.155

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to in-person services, including both members of the in-person treatment group and those members of the choice group who stated a baseline preference for in-person services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants and credit bureau data

### Exhibit A.3: Relationship Between Sample Traits and Participation in Remote Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic Measures</b>				
Race or ethnicity (reference: non-Hispanic White)				
Hispanic	- 2.6	- 5.0	- 8.2*	- 5.0
Black/African American	6.7	- 1.1	5.0	0.8
Other race	0.0	- 3.1	- 5.2*	- 3.6
Male (reference: female)	- 5.1*	- 6.6*	- 5.0*	- 6.0*

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

### Exhibit A.3: Relationship Between Sample Traits and Participation in Remote Services

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic Measures</b>				
Age (reference: under 30)				
30 to 45	0.9	- 0.3	4.8*	1.9
46 or older	1.6	1.4	0.7	0.9
Marital status (reference: single and never married)				
Married	- 3.7	0.2	0.4	1.2
Divorced, widowed, or separated	-0.8	2.0	3.9	2.1
Household size (reference: one)				
Two	2.9	2.4	0.1	2.8
Three or four	5.5	1.7	4.7	0.8
Five or more	- 5.1	- 3.7	- 4.0	- 4.7
Plans to have children in purchased home	- 3.1	- 0.5	- 4.9	- 0.1
Education (reference: bachelor's degree or higher)				
Associate's degree	- 6.3	- 3.5	- 3.0	- 3.5
Some college, but no degree	- 4.6	- 8.7*	- 4.1	- 7.3*
High school diploma or less	- 16.5*	- 15.0*	- 11.0*	- 14.1*
<b>Attitudes and Beliefs (respondent strongly agreed with the statement)</b>				
As a student, I enjoyed going to school	0.8	- 1.9	- 0.6	- 1.9
I usually spend a lot of time planning for large purchases	0.7	1.3	5.2*	2.6
It is easy for me to stick to and accomplish my goals	0.2	3.8	2.3	4.1
I am pretty good at math	2.8	1.8	2.9	2.4
<b>Housing Arrangements</b>				
Satisfied with prepurchase housing arrangements	- 5.3*	- 0.6	- 2.0	- 0.5
Made an offer, signed a purchase agreement, or purchased a home (reference: early stage)	- 1.3	- 3.5	- 2.2	- 3.8
Years planned to live in purchased home (reference: less than 6 years)				
6 to 10 years	5.8*	8.2*	7.0*	6.3*
11 years or more	3.1	7.7*	6.0*	6.6*

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

**Exhibit A.3: Relationship Between Sample Traits and Participation in Remote Services**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Measures of Financial Capability and Knowledge</b>				
Uses a written budget	- 0.8	4.8*	0.5	2.9
Usually pays credit card balance in full to avoid interest charges	- 2.3	0.0	0.5	0.7
Over the past year, was short on money sometimes or often	2.3	- 2.6	0.0	0.0
Sets aside extra money for retirement, education, or to build a financial cushion sometimes or often	- 2.9	- 1.7	- 5.1	- 2.3
Study participant searched for information about the mortgage loans available from multiple lenders	4.7	3.4	3.3	3.8
Number of correct answers (out of 4) to mortgage literacy quiz	2.2*	1.8*	2.3*	1.9*
Respondent would rather receive 40 dollars now than 50 dollars a month from now	- 1.3	- 2.1	- 0.8	- 1.7
<b>Measures of Creditworthiness</b>				
Employment (reference: full-time employment (30+ hours per week)				
Part-time (1–29 hours per week)	- 4.0	- 8.3	- 5.0	- 4.6
Not currently employed	0.3	- 2.3	3.9	- 0.4
Plans to purchase the home with a co-borrower	0.0	- 0.5	- 1.6	- 1.9
Income received by participant and any co-borrowers in past 12 months (reference: \$75,000 or more)				
\$24,999 or less	3.9	5.2	5.9	5.1
\$25,000 to \$49,999	1.1	0.2	- 0.3	- 0.7
\$50,000 to \$74,999	0.9	1.2	0.7	0.3
Credit score (reference category: 740 or more)				
Less than 620	- 5.8	- 1.4	- 4.2	- 2.6
620 to 679	- 9.2*	- 4.0	- 6.5*	- 3.2
680 to 739	- 9.3*	- 5.7*	- 6.0*	- 4.7*
Had mortgage loan application denied by another lender	- 8.1*	- 4.4	- 8.2	- 4.6
Previously lost a home or other property through foreclosure	2.5	3.3	1.9	3.1
Cash on hand for downpayment and closing costs (in thousands)	0.0	0.0	0.0	0.0
Monthly payment nonhousing debt (in hundreds)	- 0.4	- 0.2	- 0.3	- 0.2

\* Statistically significant at the p<0.05 level.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

**Exhibit A.3: Relationship Between Sample Traits and Participation in Remote Services**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Given Choice of In-Person or Remote Services?</b>				
Choice treatment group indicator	0.0	2.4	- 0.4	2.8*
<b>Summary Information</b>				
Mean of participation indicator	63.6%	32.5%	43.4%	28.4%
Sample size	2,526	2,526	2,526	2,526
R-squared	0.068	0.063	0.060	0.063

\* Statistically significant at the  $p < 0.05$  level.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

**Exhibit A.4: Statistically Significant Differences Between In-Person and Remote Service Participation Coefficients**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic measures</b>				
Race or ethnicity (reference: non-Hispanic White)				
Hispanic				
Black/African American		#		
Other race				
Male (reference: female)				
Age (reference: under 30)				
30 to 45			#	
46 or older				
Marital status (reference: single and never married)				
Married				
Divorced, widowed, or separated				
Household size (reference: one)				
Two				#
Three or four				
Five or more				

# indicates that the difference between the coefficient reported in Exhibit A.2 for the in-person group is statistically different at the 0.05 percent level from the corresponding coefficient reported in Exhibit A.3 for the remote group. See Equation (4) in Paternoster et al. (1998) for the formula used to compute the z-score associated with this test.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

**Exhibit A.4: Statistically Significant Differences Between In-Person and Remote Service Participation Coefficients**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Demographic measures</b>				
Plans to have children in purchased home				
Education (reference: bachelor’s degree or higher)				
Associate’s degree	#			
Some college, but no degree				
High school diploma or less				#
<b>Attitudes and beliefs (respondent strongly agreed with the statement)</b>				
As a student, I enjoyed going to school				
I usually spend a lot of time planning for large purchases				
It is easy for me to stick to and accomplish my goals				
I am pretty good at math				
<b>Housing arrangements</b>				
Satisfied with prepurchase housing arrangements				
Made an offer, signed a purchase agreement, or purchased a home (reference: early stage)				
Years planned to live in purchased home (reference: less than 6 years)				
6 to 10 years				
11 years or more				
<b>Measures of financial capability and knowledge</b>				
Uses a written budget				
Usually pays credit card balance in full to avoid interest charges				
During past year, was short on money sometimes or often				
Sets aside extra money for retirement, education, or to build a financial cushion sometimes or often				
Study participant searched for information about the mortgage loans available from multiple lenders				
Number of correct answers (out of 4) to mortgage literacy quiz				
Respondent would rather receive 40 dollars now than 50 dollars a month from now				

# indicates that the difference between the coefficient reported in Exhibit A.2 for the in-person group is statistically different at the 0.05 percent level from the corresponding coefficient reported in Exhibit A.3 for the remote group. See Equation (4) in Paternoster et al. (1998) for the formula used to compute the z-score associated with this test.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

**Exhibit A.4: Statistically Significant Differences Between In-Person and Remote Service Participation Coefficients**

	Initiated Any Services	Completed Education Curriculum	Completed One-on-One Counseling	Completed All Services
<b>Measures of creditworthiness</b>				
Employment (reference: full-time employment) (30+ hours per week)				
Part-time (1–29 hours per week)				
Not currently employed				
Plans to purchase the home with a co-borrower	#			
Income received by participant and any co-borrowers in past 12 months (reference: \$75,000 or more)				
\$24,999 or less				
\$25,000 to \$49,999				
\$50,000 to \$74,999				
Credit score (reference category: 740 or more)				
Less than 620				
620 to 679	#			
680 to 739				
Had mortgage loan application denied by another lender				
Previously lost a home or other property through foreclosure				
Cash on hand for downpayment and closing costs (in thousands)				#
Monthly payment nonhousing debt (in hundreds)		#		
<b>Given choice of in-person or remote services?</b>				
Choice treatment group indicator				

# indicates that the difference between the coefficient reported in Exhibit A.2 for the in-person group is statistically different at the 0.05 percent level from the corresponding coefficient reported in Exhibit A.3 for the remote group. See Equation (4) in Paternoster et al. (1998) for the formula used to compute the z-score associated with this test.

Notes: The sample includes all participants who were referred to remote services, including both members of the remote treatment group and those members of the choice group who stated a baseline preference for remote services. Study participants who withdrew from the study are excluded. All regressions include a set of site fixed effects. Standard errors are clustered at the site level. Missing values for baseline characteristic data are coded as the reference category for binary or categorical measures and are coded as the sample mean for continuous measures.

Sources: Takeup data are from eHome America, ClearPoint, and local housing counseling agencies; data on baseline characteristics are from the baseline survey of study participants, and credit bureau data

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