



EMPOWERING HOME OWNERSHIP WITH INNOVATIVE TECHNOLOGY SOLUTIONS

Introduction

The rate of home ownership in the US remains well below the peak level of 2004 and although it is slowly growing there are considerable barriers for many

people to purchase their own home. Financial education, leading to better financial behaviour and an improvement in credit eligibility will help, as will the

use of advanced technologies for more sophisticated credit scoring which take account of more diverse circumstances and behaviour of potential borrowers.

Key Takeaways



There are around 45 million consumers in the US who do not have a credit score and of those that do have a score, 34% have a score below what is considered to be prime.



Financial capability and literacy vary considerably across demographic groups and is clearly correlated with financial well-being, and financial education is shown to improve credit scores.



The use of alternative data in credit scoring is growing and in one lending program has been used to double the number of near-prime customers who qualified for credit.



A growing number of consumers, particularly younger consumers, are using financial management apps and are confident that their data is private and secure.



The potential for more people to own their homes would be boosted by better tools for financial education and more sophisticated approaches to credit scoring.

The home ownership challenge in the US

The rate of home ownership in the US has fallen from its peak of 69% in 2004 to 65% in 2019. One factor affecting the current situation is that household growth is exceeding housing supply growth which is driving down inventories of homes for sale

and pushing up prices, particularly at the lower end of the market which is important for first-time buyers. The other key factor is that credit availability for lower income groups and those with low credit scores has been very restricted since the financial

crisis with only a gradual improvement in recent years. The COVID-19 pandemic has only served in the short term to make this situation worse.

Credit scores determine credit eligibility and many consumers are missing out

A credit score normally determines a person's eligibility to obtain a personal credit product whether that be a credit card, personal loan or mortgage. It can also determine the cost of the debt product (i.e. interest rate, pre-paid points, etc.). In the US, the FICO¹ score is the principal credit scoring measure, and this is calculated by one of the credit bureaux who offer this service to consumers and to lenders. The average FICO score of consumers in the US has been growing over time, increasing from 689 in 2010 to 703 in 2019 according to Experian¹.

A FICO score below 670 is regarded as below prime for lenders. In 2019, 34% of consumers with a credit score had a score below 670 (see Chart 1). In addition, there are consumers who have no credit score because they are either "invisible" to the credit bureaux, or there is insufficient information on them to provide a score. According to the Consumer Financial Protection Board (CFPB), there are approximately 26 million credit invisibles in the US and a further 19 million with a thin credit file²(note that this data is based on research from 2010 but is regarded to be the best available estimate). If you add in those whose credit score is too low, the number of consumers without access to prime credit is estimated to be 100 million³.

Not surprisingly, credit scores are correlated to age. Experian reports that the average score for the age group 20-29 is 662 and the average score for the age group 30-39 is 673⁴. These age groups make up the vast majority of first-time homebuyers and yet their average credit scores are below prime or on the cusp of prime, suggesting that there are many in this group who will not be able to access mortgage credit. In contrast, the average FICO score for people over 60 is 749.

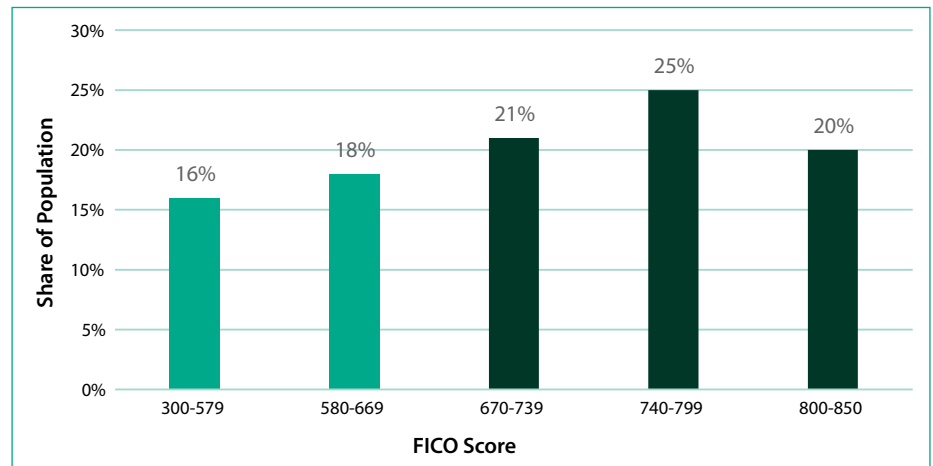
The median FICO score for mortgages at origination was 740 in February 2020 according to the Urban Institute's Housing Finance Chartbook⁵. For the lowest 10th percentile, the average score was 647, an increase from around 600 in the years

leading up to the financial crisis of 2008-09. Urban concluded from its analysis that

access to credit remained tight, especially for borrowers with lower FICO scores.

Chart 1

Over one third of US consumers have credit scores which are considered below prime



Source: Experian



Financial capability varies across demographic groups but is important for financial well-being

Some people will have low credit scores because they have been affected by a financial crisis which has forced them to miss repayments or default on debt. This can be for a variety of reasons, but notably medical factors can play a part directly or indirectly, leading to high costs and potentially loss of employment.

Other people will have impacted their credit scores by poorly managed financial behaviour, and this is where education can help. The corollary of this is that consumers can improve their own credit scores over time by the behaviours they exhibit.

A starting point for this is having a good understanding of finance and related

issues. Research clearly shows that this financial literacy or capability varies considerably by age, income and race or ethnicity. In a 2018 study by Finra (a government-authorized not-for-profit that oversees broker-dealers), consumers were asked 6 financial questions and you can see in Chart 2 the average number of answers that were given correctly within each group⁶. Older age groups and those with higher incomes showed a higher level of financial literacy than other groups. In terms of race or ethnicity, black and Hispanic consumers demonstrated a lower level of literacy than white or Asian consumers.

According to Finra, financial education matters since consumers who have participated in 10 hours or more of financial education exhibit better financial behaviours than those who have not. In another study, DebtWave (a not-for-profit credit counsellor) found that 79% of participants in a financial literacy course run by the company were able to increase their credit scores from an average of 625 to 638⁷. For those who continued the course into a second year most found that their scores increased to an average of 686.

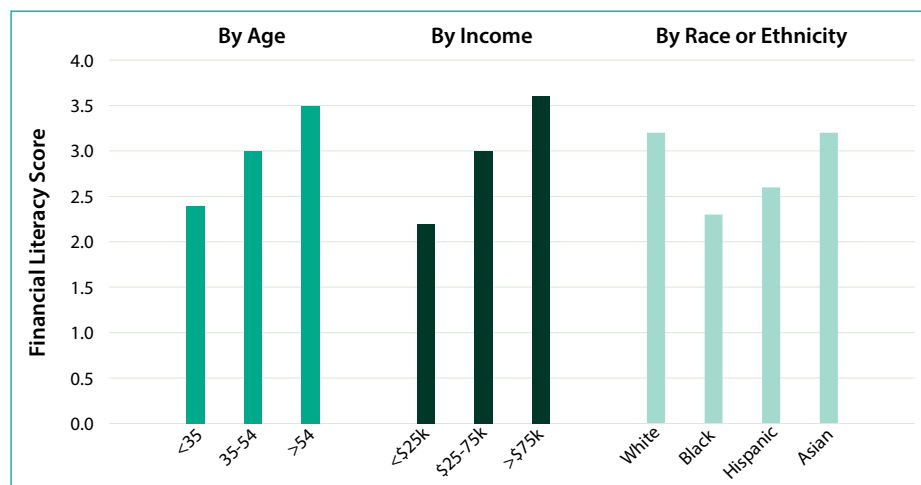
However, the goal of better financial education is not just to increase credit scores. The CFPB looked at financial well-being in 2016 and found that on average the financial well-being score was 54 on a scale of 0 to 100⁸. Within that overall average, there were some interesting differences related to financial capability and behaviour, for example:

- For those whose confidence of achieving a financial goal was high, the well-being score was 63, whereas for the those whose confidence was not high, the well-being score was only 50.
- For those whose effective day-to-day money management behaviours were above average, the well-being score was 61, whereas for those whose behaviours were below average the well-being score was just 48.

Chart 2

Financial literacy varies considerably by demographic group

(Consumer were asked 6 questions and the average number of correct answers is shown)



Source: Finra



The use of alternative data for credit scoring is slowly becoming more acceptable

For those with low credit scores and limited access to credit, a recent development which might help has been the introduction of alternative data into credit scoring models. This does not

come without challenges particularly in relation to consumer consent and fair lending practices. These issues were clearly highlighted in testimony to Congress in July 2019 by Chi Chi Wu of the National

Consumer Law Center who expressed concern that the use of certain data could help to perpetuate existing inequalities in society⁸.

“The danger of gathering massive amounts of data and using algorithms to analyze them is that they reinforce and entrench existing inequality, whether it be racial or economic.”

Chi Chi Wu, National Consumer Law Center

The standard FICO score is made up of 5 components as shown in Table 1. To supplement this, there are several different types of alternative data which can be introduced into a scoring system ranging from bank account transaction data to social media data. For example, UltraFICO was introduced in 2019 to allow customers to voluntarily link the lender to bank account transaction data to boost their credit score. It is used only when a credit application has been declined or in order

for the customer to secure a lower rate. In another development, Experian Boost was launched in 2018 allowing consumers to factor into the credit score their utility and telecom bill payments, hence improving the score if payments have been timely.

In one interesting case, Upstart Network is using alternative data for credit underwriting to expand credit to underserved consumers. With approval from the CFPB and working with Cross

River Bank, Upstart has been testing its credit decisioning model and found that 27% more applicants were approved than with traditional scoring models and at 16% lower APRs⁹. Furthermore, Upstart’s model approved almost double the number of consumers with FICO scores between 620 and 660, which is the near-prime segment. An important conclusion was that the model showed no discrimination under the fair lending rules with regards to different demographic groups.

FICO Score Components	Alternative Data Sources
<ul style="list-style-type: none">• Payment history (35%)• Amounts owed (30%)• Length of credit history (15%)• Credit mix (10%)• New credit (10%)	<ul style="list-style-type: none">• Bank account transaction data• Rental data• Gas and electric utility data• Subprime credit data• Telecommunications data• Educational/occupational attainment data• Social media data• Behavioural data e.g. web browsing



Personal financial management services are emerging which have potential benefits for consumers

New technologies are already starting to have some impact on improving the way consumers deal with their finances. There has been a growing interest in personal financial management apps particularly among younger consumers and this demonstrates the willingness of people to take more personal responsibility for financial health and behaviour when convenient and useful services are made available to them.

In a recent study, The Clearing House found that 18% of banking consumers were using personal financial management apps, and that the proportion is even

higher among the 25-34 age group¹⁰. Examples include apps like Clarity Money from Marcus, a subsidiary of Goldman Sachs. These apps typically help users to track spending, budget and identify unwanted subscriptions, or to find better deals for services like utilities. Other apps, such as Digit, analyze spending and make automatic allocations to a savings account designed around specific goals. A critical technology being deployed in these apps is AI / machine learning.

Of course, these kinds of services require a lot of data sharing and access to sensitive financial data. The Clearing

House Study noted that 70% of app users were confident that their information was private and secure, but that only 19% realised that apps may access information from 3rd parties. Until recently, screen-scraping has been common for apps to get access to bank data but services are starting to shift towards the use of Open APIs and tokens. Many banks prefer this approach because they are uncomfortable with their customers providing bank account details and passwords to data aggregators who then use that for screen-scraping.

Using technology to empower more homeownership

Increasing the number of potential homebuyers in the market, particularly among younger people and from disadvantaged groups, requires innovative thinking but the examples we have already described above show that the technology is there to help make this happen.

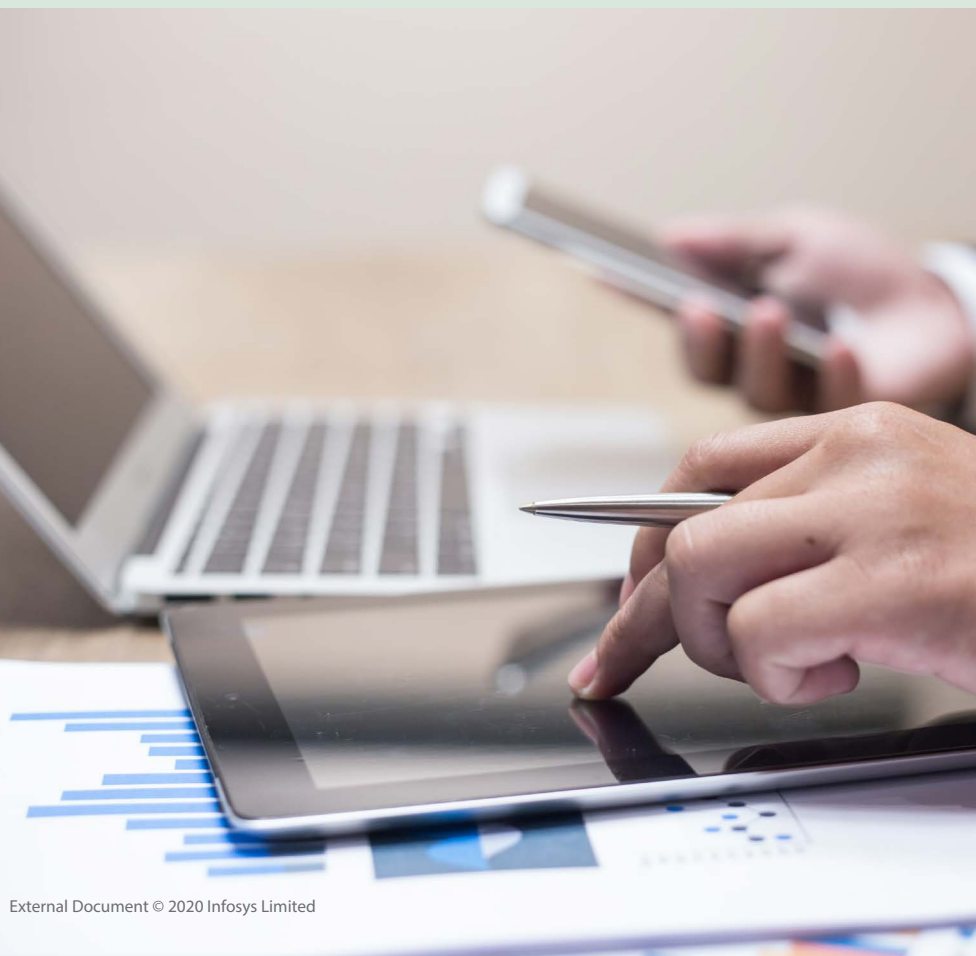
Given the importance of financial literacy and capability, and the potential for using

alternative data and advanced analytics in credit decisions, a useful service to potential mortgage borrowers might include:

- Educating borrowers as to the requirements for mortgage eligibility as a key step in establishing goal-oriented behaviour.

- Using data analytics to pre-qualify potential borrowers and to allow them to run simulations around the goals they are targeting.

The emerging service model is empowering potential borrowers with a “Living.com” application. This comprehensive tool would convert the dream of homeownership and the maintenance of homeownership into a digital coaching wallet. The “home living” digital portal for the customer would aggregate financial data, provide multi-media self-directed learning and coaching, offer related buyer services, products. The portal would also allow a prospective home buyer to apply their own secure data to product and pricing, eligibility scenarios, to visualize how close to buyer ready certification they may be at any point in time. An important part of such a service will be empowering consumers to take control of and manage their own data, including who and when they expose their financials to credit suppliers. Having a credit ready digital portfolio will allow suppliers to offer more competitive rates as their cost of service will be lowered by the borrower having already “pre-processed” and aggregated the required documentation and data to process a credit application.





Conclusions

There is tremendous potential with innovative new technologies to support more people to become homeowners. Financial education is key to improving financial capability, which in turn can improve credit scores for individuals and widen access to mortgage credit. At the same time, alternative credit scoring techniques are demonstrating that more people can safely qualify for credit. A home buying service which gives consumers control over their own data, provides advice and support, and shows how to improve and manage credit eligibility could go a long way to breaking down some of the barriers that currently exist for home ownership.

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Henry is the Global Director Housing Finance technology and service solutions for Infosys. In his role he directs the development of Infosys' offerings around consulting, IT as service, managed business services, digital transformation and lending platform modernization. He also leads Infosys' 2NEXT Lab, an innovation acceleration lab that partners with clients, ecosystem suppliers and Fin Tech to design, build and productize industry solutions. In his role he also acts as a virtual CIO for numerous US based clients including Movement Mortgage and Churchill Mortgage.

Henry served as the head of Housing Finance and Lending Solutions at IBM, where he pioneered the use of cognitive technologies to automate residential mortgage underwriting, loan servicing and default services solutions. He also served as Chief Operating Officer of a captive joint venture servicing operation for Fannie Mae, a government sponsored entity that funded and securitized more than sixty percent of US residential mortgage loans.

Henry has a BA from Columbia University and a Master's Degree in Human Development from Harvard University.

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