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September 2021

Emerging Technology for All

Conversational AI's Pivotal Role in Improving Financial Security and Opportunity

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Acknowledgments

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Commonwealth is a national nonprofit building financial security and opportunity for financially vulnerable people through innovation and partnerships. Black, Latinx and female-led households disproportionately experience financial insecurity due in large part to longstanding, systemic racism and gender discrimination. Addressing these issues is critical to Commonwealth's work of making wealth possible for all. For nearly two decades, Commonwealth has designed effective innovations, products, and policies enabling over 1 million people to accumulate more than $4 billion in savings. Commonwealth understands that broad changes require market players to act. That's why we collaborate with consumers, the financial services industry, employers, policymakers, and mission-driven organizations. The solutions we build are grounded in real life, based on our deep understanding of people who are financially vulnerable and how businesses can best serve them. To learn more, visit us at www.buildcommonwealth.org.

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Executive Summary

Emerging Technology for All

As has been the case historically, powerful emerging technologies have the unprecedented potential to shape the future of people's financial lives, often in ways that will be with us for decades or longer. Emerging technologies— today expressed as technologies such as big data-powered artificial intelligence (e.g. chatbots and virtual assistants), machine learning, and blockchain/distributed ledger solutions—are evolving rapidly.

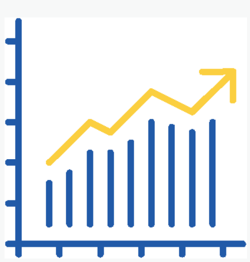
Because of their transformational nature, these next generation technologies provide new and creative ways to improve financial security and opportunity for all, but also carry new risks if distributed unevenly, with some populations using emerging technology to get ahead, while others may be left out of the system.

To achieve the promise of these technologies for all, Commonwealth is focused on ensuring that the needs of financially vulnerable people are understood, visible, introduced into relevant conversations, and integrated into solutions. Ultimately, our vision for this work is that financial services leaders, fintech entrepreneurs, social impact innovators, nonprofits, and others shaping the financial system act to harness these powerful emerging technologies to serve this untapped consumer segment, benefiting financially vulnerable people and their businesses.

The Transformational Promise of Conversational AI

Commonwealth's research identified conversational artificial intelligence (AI) as one critical area ripe for innovations to address the financial needs of low- to moderate-income people.

Conversational AI technologies such as virtual assistants and chatbots are growing in ubiquity in financial services, becoming a primary way that people interact with their banking systems. Already



"Already shaping the financial landscape, the COVID-19 pandemic has only **accelerated the adoption of conversational AI technologies**."

1,290

To gain insights on the impact and opportunity of this technology, Commonwealth surveyed **1,290 low- to moderate income (LMI) people**, with a focus on **women and Black and Latinx people** living in the United States, on their perceptions, needs, wants and uses of conversational AI.

shaping the financial landscape, the COVID-19 pandemic has only accelerated its adoption, with more customers turning to conversational AI out of necessity, as in-person banking was unavailable or challenging to access. Our research suggests that even as banks and branches reopen, the increased usage of digital tools and conversational AI will continue as customers have learned how to interact with the technology and appreciate the convenience it provides.

To gain insights on the impact and opportunity of this technology, Commonwealth surveyed 1,290 low- to moderate-income people, oversampling for women and Black and Latinx people living in the United States, on their perceptions, needs, wants and uses of conversational AI.

This report summarizes findings from the survey and follow-up qualitative interviews, explores the trust and comfort level of financially vulnerable people in interacting with conversational AI, and identifies ways the financial services industry can leverage these technologies to enable financial security for all.

Conversational Artificial Intelligence (AI) refers to tools such as chatbots or virtual assistants (e.g. Siri, Alexa) that can have a human-like conversation with a user. Conversational AI draws on large data sets and a variety of technologies, including machine learning, to analyze spoken and/or written speech patterns and respond to users in natural ways.

Key Findings

Use and trust of chatbots by low- to moderate-income people has increased dramatically since the COVID-19 pandemic. Individuals surveyed during COVID-19 were over two times more likely to report having interacted with a chatbot than participants surveyed prior to the pandemic. Further, in follow-up interviews, the majority of participants shared that they would continue with the banking practices they adopted during COVID-19 even after banks and bank branches reopened, suggesting these are not temporary changes.

Use of financial apps and tools is widespread across all demographics, with investing apps being the most commonly used. Financial app usage across all demographics is widespread. This suggests a general willingness to engage with a wide variety of apps and digital financial tools—for growing savings, managing debt and expenses, investing—across demographics. Black and Latinx respondents reported the highest level of trust in AI recommendations and were most comfortable with using conversational AI, especially post-pandemic.

There is a link between demographics and conversational AI advice preferences. Our research identified demographic differences in preferred types of advice from conversational AI across race, education, financial situation, age, and financial hardship. Depending on one's demographic, preferences included interest in advice on growing savings, managing debt/expenses, investing, and/or no interest in receiving any advice from a chatbot.

People turn to financial apps in light of financial hardship. People who self-identified as experiencing a recent financial hardship were three times more likely to use financial apps than those who did not report a recent financial hardship.

Financial fragility impacts use and trust of conversational AI. Survey participants who are more comfortable financially are also more comfortable with conversational AI. Participants who described their financial situation as "just getting by" were more likely to prefer options that allow them to easily connect with a human agent.

Some concerns around use of conversational AI remain. Our in-depth interviews found that the use of conversational AI brought up concerns such as security, the fear of being misunderstood, and uncertainty that their needs would be met. Addressing these concerns presents an opportunity for improving customer engagement.

Through building conversational AI solutions to include the needs of financially vulnerable people, the financial services industry has a significant opportunity to engage a previously untapped consumer segment, benefiting their businesses, and enabling financial security for all. If you are a fintech or financial services firm and would like to learn more about partnering with Commonwealth, please contact Gosia Tomaszewska at gtomaszewska@buildcommonwealth.org or Paula Grieco at pgrieco@buildcommonwealth.org.

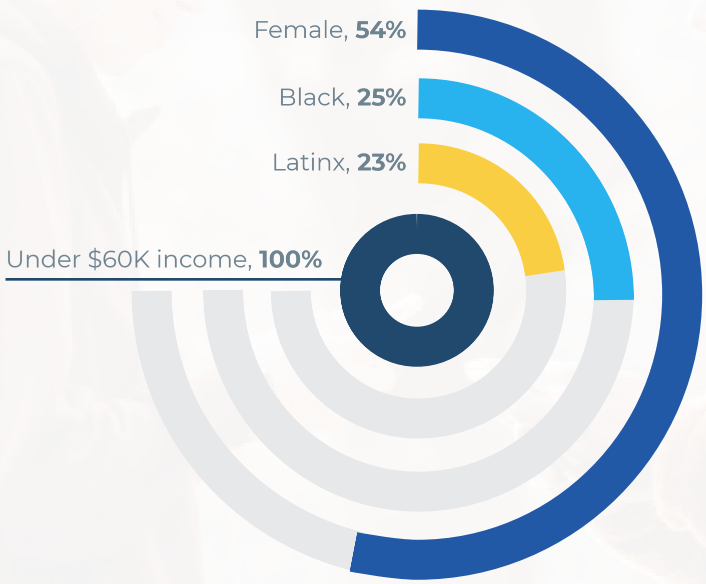
Introduction

Artificial intelligence-enabled services such as chatbots and virtual assistants can lead to better customer engagement through improved customer-centered solutions; increased convenience (such as shorter wait times); and personalized access to financial knowledge.

However, prior research suggests that some customers may be less likely to use the technology, and there may be demographic differences in user's preferences, goals, and comfort levels with financial technology services.

The aim of this research is to understand the needs of financially vulnerable people and opportunities for fintechs and financial institutions to leverage conversational AI to reach this untapped market while positively impacting financial security, savings, wealth building, and related financial issues.

For the 2021 survey, **1,290 LMI people** living in the United States were polled, oversampling for demographic groups historically excluded in financial services, including women and people of color: **54% of survey respondents were female**, **25% were Black**, **23% were Latinx**, and **100% of respondents had yearly incomes under $60K**.



The 40-question survey sought to understand:

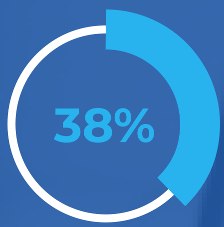
- How users' relationships to their financial institutions changed during the pandemic
- How the COVID-19 pandemic impacted perception of emerging tech within financial services
- The opportunities, challenges, comfort levels, and expectations of users with emerging technologies, specifically chatbots or virtual assistants
- How users changed how they manage their finances in light of conversational AI offerings

Commonwealth surveyed people living in the United States on their perceptions of and needs for conversational AI technologies, including virtual assistants and chatbots. Data was collected in 2019 and in 2021, allowing us to understand the impact of the COVID-19 pandemic and the resulting changes in banking on Americans' perceptions. We also conducted in-depth interviews with survey respondents to better understand how to increase trust level for LMI people.

The Pandemic's Impact on How Consumers Bank

2X Individuals surveyed during Covid-19 were over **two times more likely to report having interacted with a chatbot** than participants surveyed prior to the pandemic.

Thirty eight percent of participants also reported that they have changed how they bank in response to the pandemic, and individuals who also experienced a recent financial hardship are **4.5x more likely to have changed how they bank** as a result of the pandemic.



> “**This dramatic increase** in the use of chatbots was not correlated with users' financial situation, suggesting that the shutdown of in-person banking options was the main driver of the use of bots.”

Key Findings

COVID-19 HAS SHIFTED THE WAY PEOPLE BANK

With institutional shutdowns and restricted individual movement due to the pandemic, many consumers started conducting business online that they may have done in person prior to 2020.

Individuals surveyed during COVID-19 were over two times more likely to report having interacted with a chatbot than participants surveyed prior to the pandemic. This dramatic increase in the use of chatbots was not correlated with users' financial situation, suggesting that the shutdown of in-person banking options was the main driver of the use of bots.

In follow-up interviews, the majority of participants shared that they would continue with the banking practices they adopted during COVID-19 even after banks and bank branches reopened, suggesting these are not simply temporary changes. The impacts of the COVID-19 pandemic changed the way users bank and engage in technologies that they may have not otherwise embraced. Increased usage has created an opportunity for financial technical services to offer more options for personalized, convenient service at a time when consumers' banking habits are dramatically shifting.

Use of Financial Services Apps

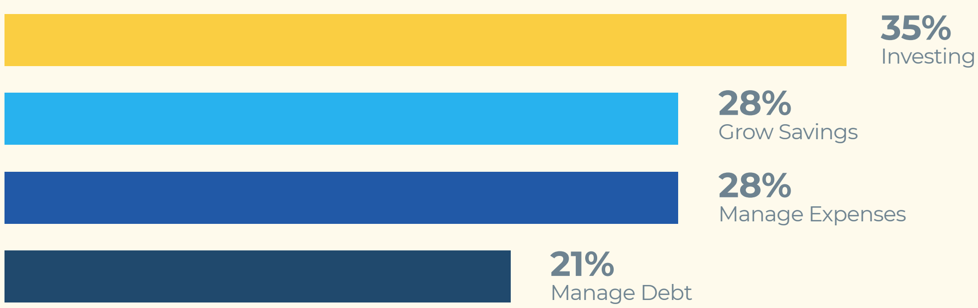
Use of financial services apps varies by gender, age, race, and financial situation

Overall, this research found that app usage is widespread, suggesting a general willingness to engage with apps and digital financial tools across demographics. Differences in app usage by education and financial situation suggest that more can be done to remove barriers to access.

Uses for Fintech Apps

INVESTING APPS ARE THE MOST COMMON TYPE OF APP USED

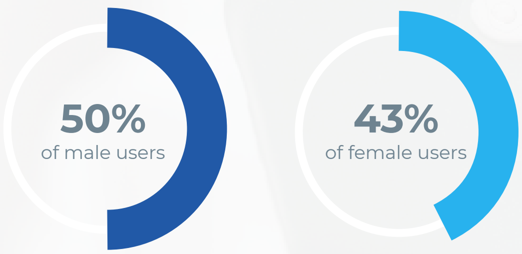
Overall, between **20% and 35% of participants use apps to manage expenses, manage debt, grow savings, or invest**. The most popular type of apps are **investing apps** (35% of participants use this type of app).



Which demographic groups are more likely to use financial services apps?

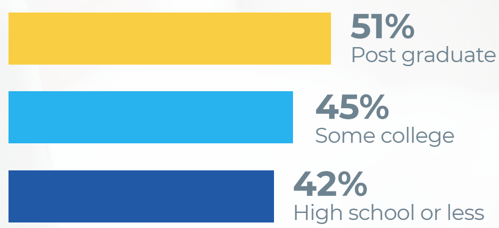
GENDER

The difference in app use was small but statistically significant when comparing **male** and **female** users.



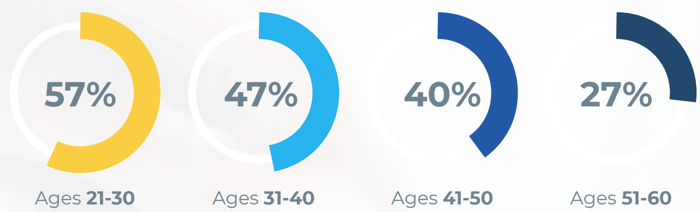
EDUCATION LEVEL

There is **high usage of apps** across education levels.



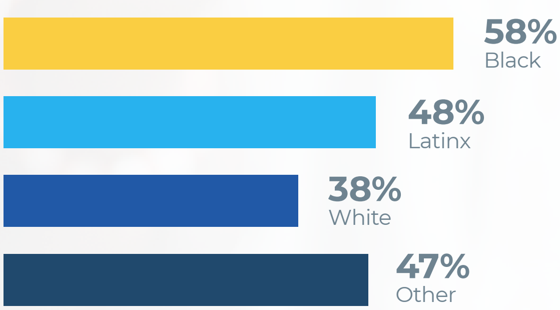
AGE

People who are **older are less likely to use apps** than those in the **21-30 age group**; the older you are, the less likely you are to use apps.



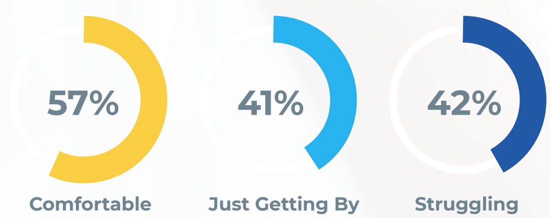
RACE

Latinx people and **white people** are about ½ as likely to use apps compared with **Black people**.



FINANCIAL SITUATION

People who are **financially struggling** or **just getting by** are about **half as likely** to use apps as those who are **financially comfortable**.



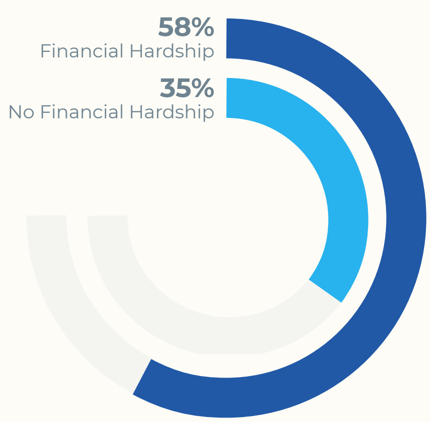
Recent financial hardship increases app usage

In addition to asking participants about their general sense of their ongoing financial security, we also asked respondents if they had experienced a financial hardship event in the past year. Our research found that people who self-identified as experiencing a recent financial hardship were three times more likely to use financial apps than those who did not report a recent financial hardship: 58% of respondents who stated that they had experienced a financial hardship in the past year also used apps to manage their finances, compared to 35% of respondents who had not experienced a financial hardship.

This was true regardless of users' overall financial situation or income level. While we did not directly ask participants to elaborate on their hardship in the survey, it seems likely that a financial hardship provides an opportunity for users to re-examine their banking and financial habits and consider alternatives to their current services and tools.

Likelihood of Financial App Use

People who self-identified as experiencing a recent financial hardship were **three times more likely to use financial apps** than those who did not report a recent financial hardship:



58% of respondents who stated that they had **experienced a financial hardship** in the past year also used apps to manage their finances, compared to **35%** of respondents who had **not experienced a financial hardship**.

Perceptions of Conversational AI

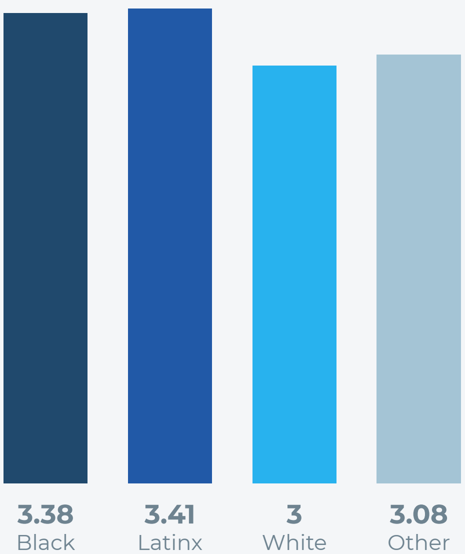
Comfort with Conversational AI

To understand users' willingness to engage with chatbots and virtual assistants, we created an overall "tech comfort" score consisting of items such as "How comfortable do you feel about getting financial advice (from your bank) for your financial services through chatbots or virtual assistants instead of through a real person?"

The tech comfort score was created by averaging scores on four items related to participants' comfort and interest in receiving financial advice and customer service through emerging technology (chatbots, virtual assistants) instead of through a real person.

- **Race** was grouped into four categories: Black, Latinx, white, and other. When controlling for income and other demographic factors, Black and Latinx participants reported feeling more comfortable with conversational AI, as compared with white participants.
- Older participants report feeling less comfortable with conversational AI than younger people.
- **Financial situation** was grouped into three levels based on whether participants are financially comfortable, just getting by, or struggling. Participants who are comfortable financially are also more comfortable with conversational AI.

Average tech comfort score by race/ethnicity



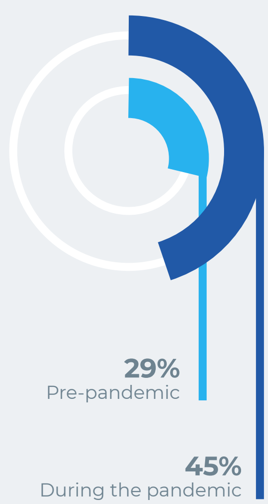
Items were scored on a scale of 1 = extremely uncomfortable through 6 = extremely comfortable.

Trust in Conversational AI

We also examined whether trust in conversational AI varies by demographic group, especially among groups historically marginalized by the banking industry. Questions comprising the "comfort" score gauged participants' general interest and comfort in receiving financial advice or customer service through conversational AI rather than a real person. To understand trust, we asked users how likely they were to trust the recommendations made through conversational AI.

Analyses suggest a small but statistically significant relationship between trust and financial situation: participants who are more comfortable financially are more likely to trust financial recommendations made by chatbots or virtual assistants.

Compared to individuals identifying as Black, those identifying as white are less likely to trust advice from bots.



Trust in Chatbots Increases Dramatically During Pandemic

Prior to the start of the Covid-19 pandemic, participants said they were less likely to trust financial recommendations made by chatbots or voice response systems compared to participants surveyed during the pandemic. **Pre-pandemic, 29%** of respondents were somewhat or extremely likely to trust financial advice made by chatbots. **During the pandemic, 45%** of respondents were somewhat or extremely likely.

These findings suggest that the increase in trust could be due to greater familiarity with conversational AI.

We also examined differences in trust among individuals surveyed prior to COVID-19 vs. those surveyed during the pandemic. Prior to the start of the COVID-19 pandemic, participants said they were less likely to trust financial recommendations made by chatbots or virtual assistants compared to participants surveyed during the pandemic. Pre-pandemic, 29% of respondents were somewhat or extremely likely to trust financial advice made by chatbots. During the pandemic, 45% of respondents were somewhat or extremely likely. This difference was statistically significant even when controlling for participants' current financial situations.

When combined with our findings on the increase of use in chatbots during the pandemic, these findings suggest that the increase in trust could be due to greater familiarity with conversational AI. As the pandemic led more people to turn to virtual alternatives to in-person banking, their trust of these tools increased with use.

> The findings suggest there is a **significant relationship** between individuals' financial situations and their specific concerns and preferences regarding financial technologies such as chatbots and virtual assistants."

Link Between Financial Fragility and Conversational AI Preferences

Noting that individuals surveyed during the pandemic reported higher trust in bots and virtual assistants (VAs) compared to those surveyed prior to the pandemic, we leveraged data from the 2021 survey to understand what might further improve trust for users. Participants were asked about their concerns with using chatbots and/or virtual assistants as well as what would make them feel more comfortable when interacting with conversational AI.

Individuals who reported they were "just getting by" were less likely than other respondents to be concerned with additional security. Yet, individuals who are "just getting by" and those who had a financial hardship event in the past year are more likely to still prefer options that allow them to easily connect with a human agent. While more research is needed to understand the link between financial hardships and digital app usage, one hypothesis to explain why financial hardships increased app usage but not necessarily trust of conversational AI is that people turned to apps as a "last resort" when their financial hardship was not solved through traditional banking. Regardless, these users who have faced ongoing or one-time financial struggles still prefer the option to easily connect to a human agent.

What Concerns and Desires Do Financially Vulnerable People Have About Conversational AI?

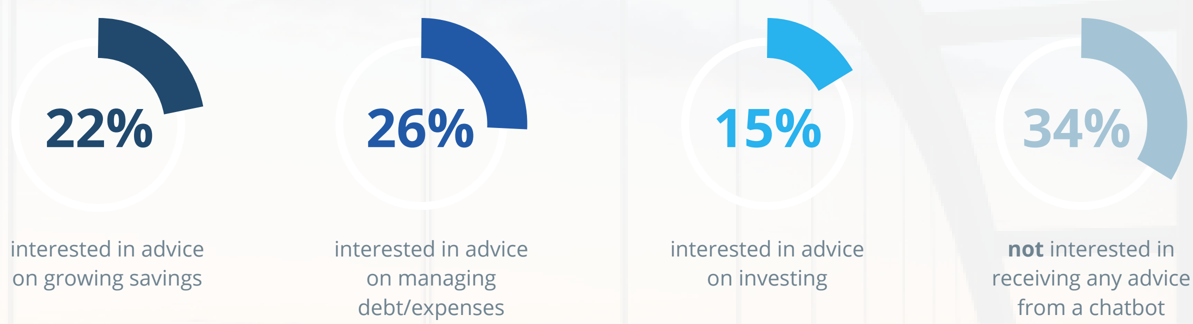
- **Security:** Our in-depth interviews emphasized concerns about overall security and desire for personal assistance through a human agent.
- **Being misunderstood:** While some interviewees expressed concern about security, most interviewees with concerns about conversational AI reported worries about being misunderstood by the system.
- **Uncertainty that their needs would be met:** Especially when interviewees had already faced a financial hardship event or felt they had a complex financial situation, they expressed a desire to have a human agent follow up to make sure that they were heard and their needs would be met.

Link Between Demographics and Conversational AI Advice Preferences

Participants were asked which types of financial advice they would be most interested in receiving from chat bots or virtual assistants instead of from a real person.

There were demographic differences in preferred types of advice across education, financial situation, age, race, and financial hardship. There were no gender differences in preferred types of advice participants would want to receive from chat bots or virtual assistants. These findings suggest that providers of conversational AI technologies can leverage demographic data to offer users personalized insights and advice.

Conversational AI Advice Preferences



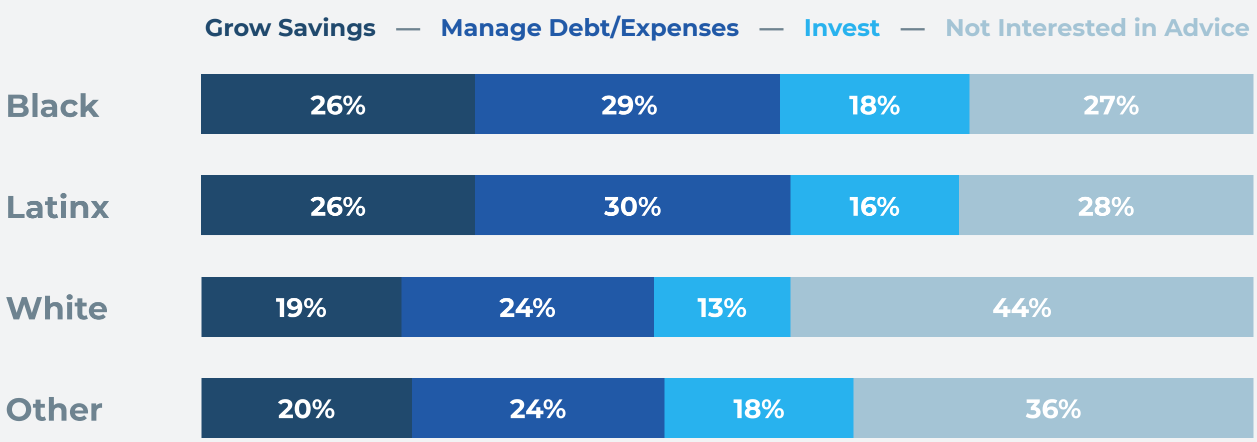
More than half of all respondents identified uses for conversational AI.

Interest in Chatbot Advice Types by Demographic Characteristic

The following demographic findings reflect the percent of respondents who said they would be more interested in receiving advice from a chatbot than a real person by demographic characteristic (e.g., race, gender, etc.) and advice type (e.g., growing savings, managing debt, and investing).

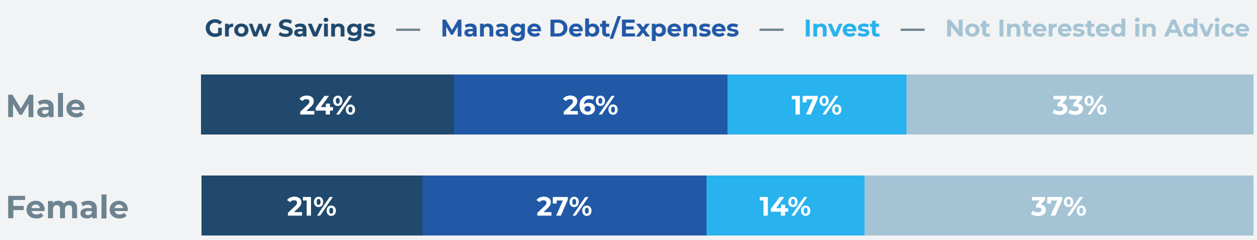
Interest in Chatbot Advice Types by Race

- Black people reported being more likely to want advice on growing savings
- White people reported more likely to not want any kind of advice
- Individuals who are Latinx or identified in "other" race categories reported being about equally distributed across the advice types



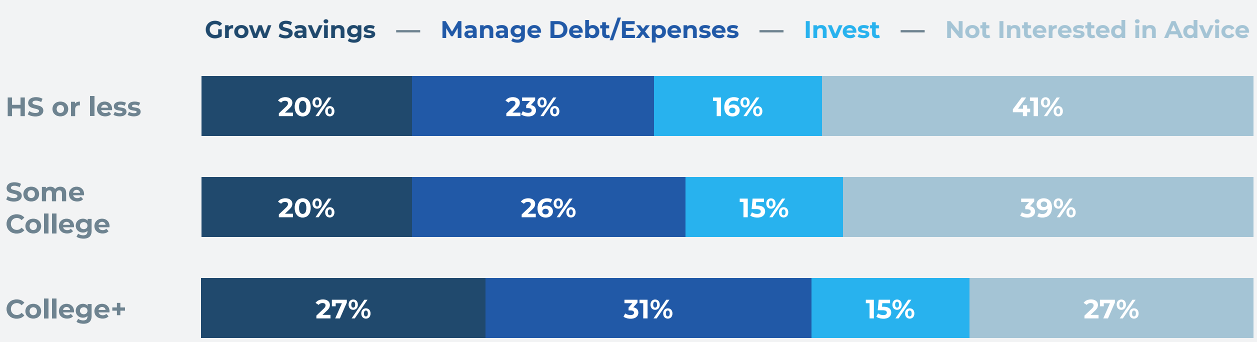
Interest in Chatbot Advice Types by Gender

- There were no significant differences between males and females regarding the specific financial advice interests.



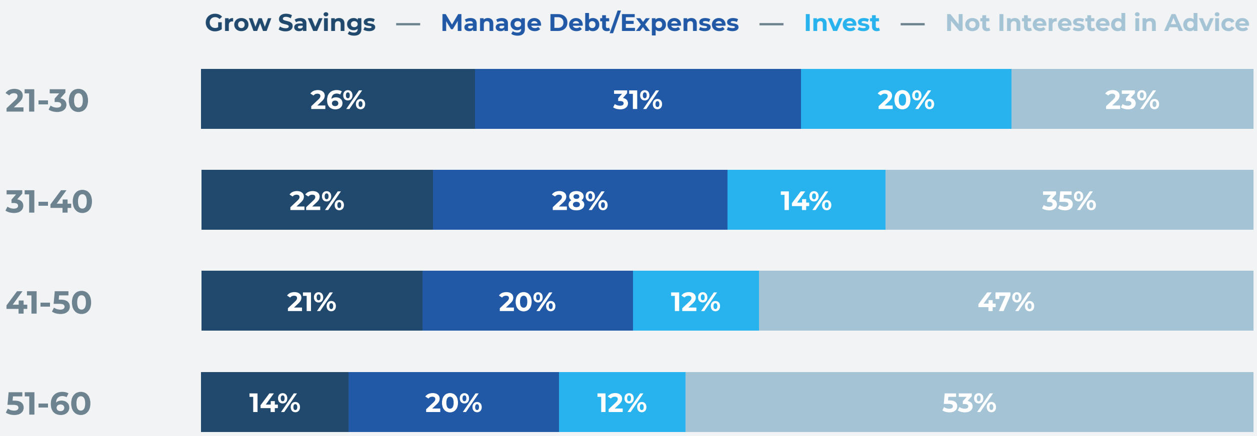
Interest in Chatbot Advice Types by Educational Degree

- People who are college educated are more likely to want financial advice of any kind
- People who have not completed college are more likely to not want any kind of financial advice
- As participants were asked specifically whether they would want to receive advice through conversational AI and people who had not completed college reported lower app usage, it seems possible that people who have not completed college may be less familiar with the types of advice that conversational AI could provide. Fintech providers aiming to reach this demographic might need to consider alternative outreach or marketing efforts to share technology with people without a college education.



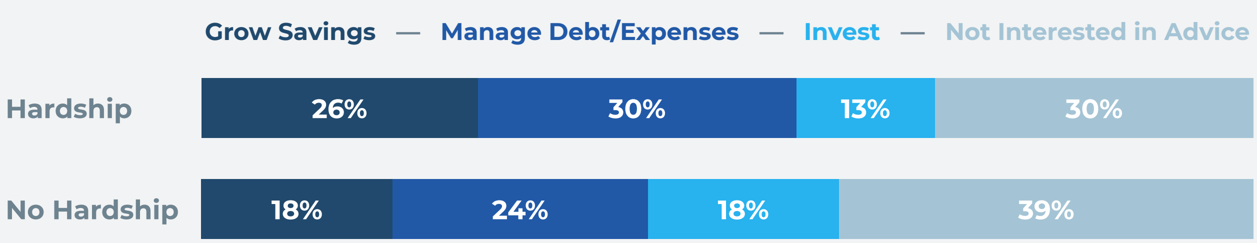
Interest in Chatbot Advice Types by Age

- People who are younger (21-30) report being more likely to want advice on growing their savings and investments
- People who are 41 or older reported being more likely to not want any advice
- Individuals in the 31-40 age group reported being equally distributed across the advice types



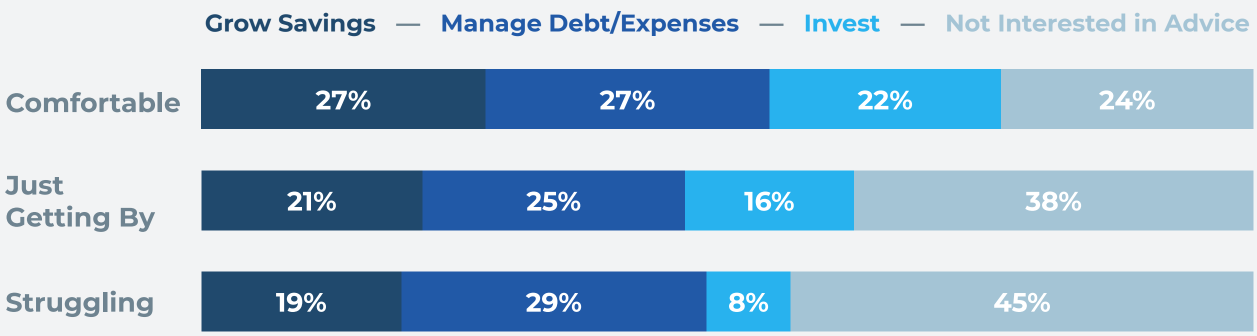
Interest in Chatbot Advice Types by Financial Hardship

- People who reported experiencing a recent financial hardship event are more likely to want advice on debt/expenses management
- People who reported no recent hardship were more likely to not want any advice



Interest in Chatbot Advice Types by Financial Situation

- People who report that they are generally financially comfortable are more likely to want advice about growing their savings and investments
- People who report that they are generally struggling financially are more likely to not want any kind of financial advice
- Individuals who report that they are just getting by financially are just as likely to fall into each kind of advice category
- The lack of advice requested by people who are struggling financially could be due to negative emotions associated with finances. Commonwealth's recent research on helping app users reduce fees found that frustration and anger about fees translated into users avoiding thinking about fees at all, even if engaging with advice on fees could lead to savings. One approach fintech providers may take to engage this demographic is to frame advice positively, focusing on what users are doing well or a positive outlook on their financial future.



Conclusion and Next Steps

Conversational AI has the power to make financial information more accessible and understandable to customers; help customers resolve their financial needs efficiently; and allow financial institutions to reach an untapped consumer segment, improve trust and ultimately improve customers' financial security.

Use of conversational AI has increased dramatically due to the pandemic and many of these tools are already widely used by the financial services industry. But this research suggests that there is a tremendous opportunity to do more to expand customer engagement and to improve the trust and usefulness of these tools for financially vulnerable Americans. Customers are looking for advice from their financial institution on topics like savings, investing, and debt management. The differences in advice sought across demographic groups also suggests that financial services can engage customers by meeting them where they are and offering personalized advice through a chatbot experience.

While trust in conversational AI has increased, Americans who are financially insecure still desire human connection when managing their finances online. Developers of conversational AI and financial services can further increase trust among financially insecure individuals by incorporating empathetic elements into the chatbot experience.

The financial technology landscape continues to shift, and Americans have ever-expanding options for banking and managing their finances. Our research suggests that financially vulnerable people are open to changing the way they bank and looking to fintech apps and financial services organizations for support. Fintechs and financial institutions can engage this market segment, benefiting their businesses and enabling financial security for all.

*Based on these findings, Commonwealth is partnering with fintechs, conversational AI providers, and financial institutions to conduct field tests aimed at improving engagement and usefulness for low- to moderate-income Americans. If you are a fintech or financial services firm and would like to learn more, please contact **Gosia Tomaszewska** at **gtomaszewska@buildcommonwealth.org** or **Paula Grieco** at **pgrieco@buildcommonwealth.org**.*

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