

**Generation Superconnected: The Coming User Authentication Shift Report**, a collaboration between PYMNTS and Nok Nok Labs, presents findings from a survey of 2,127 adult consumers on their preferences for sharing personal information with merchants and digital platforms and their concerns about data security. The report reveals how consumers value the safety of their personal information and why data security is key to establishing consumer trust.



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# GENERATION SUPERCONNECTED

THE COMING USER AUTHENTICATION SHIFT  
REPORT

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THE COMING USER AUTHENTICATION SHIFT REPORT

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**Generation Superconnected: The Coming User Authentication Shift Report** was done in collaboration with Nok Nok Labs, and PYMNTS is grateful for the company's support and insight. [PYMNTS.com](https://pymnts.com) retains full editorial control over the following findings, methodology and data analysis.

# INTRODUCTION

New PYMNTS research shows that today's consumer is "superconnected," shopping, banking and even working online using multiple devices while accessing digital channels to socialize and stream content. Consumers' digital identities are now inextricably entwined with the physical world — every consumer-merchant interaction, digital or in-store, leaves a trail of data behind, representing an exhaustive catalog of how consumers live, work, purchase and bank. PYMNTS' research found that half of consumers have used digital wallets to shop and manage their money, and almost half of these shoppers have increased their use of these tools in the last 12 months. As consumers increase their use of online and mobile banking tools, however, their exposure to new, device-based security risks rises.<sup>1</sup>

The variety and complexity of security threats are well-known in the financial services sector, yet a disconnect exists between consumer interest in enhanced digital security and industry-wide adoption of modern user authentication tools. Today's consumers also value ease of use and frictionless interactions whenever possible when they use financial products. Many banks and financial institutions nevertheless still use passwords as the exclusive means of access to their customers' financial accounts and most sensitive personal data.

There are numerous risks associated with a password-based security system, according to global law enforcement.<sup>2</sup> Malware downloaded with a single click on a compromised email can install a keystroke logger that may capture and transmit password data in seconds to cybercriminals. Consumers' data might be stolen along with a purse or a wallet if they have noted their passwords down on paper or on a notes app or used an easy-to-guess combination of characters based on personal data, such as birthdates. Unfortunately, a stolen password will do far more harm faster than a stolen wallet. Criminals can steal valuable personal data, create syn-

thetic identities with personal information found on online accounts and then resell the lot on the dark web to other criminals in seconds, well before a breach is even noticed. Personal data theft through hacking is big business, costing consumers \$43 billion in 2020 alone, and password theft is a fast-track on-ramp to cybercrime.<sup>3</sup>

Financial institutions (FIs) interested in boosting loyalty must provide frictionless customer experiences at scale while protecting their customers' sensitive data by implementing safeguards, including a user authentication solution that does not compromise security for convenience.<sup>4</sup>

Generation Superconnected: The Coming User Authentication Shift Report, a collaboration between PYMNTS and Nok Nok Labs, presents findings from a survey of 2,127 adult consumers on their preferences for sharing personal information with merchants and digital platforms and their concerns about data security. The report presents an overview of how consumer sentiment about data security influences their choice of digital platforms and retailers as well as their interest in stronger data security measures when using digital tools.

<sup>1</sup> Author unknown. Increased Use of Mobile Banking Apps Could Lead to Exploitation. FBI. 2020. <https://www.ic3.gov/Media/Y2020/PSA200610>. Accessed July 2021.  
<sup>2</sup> Author unknown. Cyberthreats are constantly evolving in order to take advantage of online behaviour and trends; The COVID-19 outbreak is no exception. INTERPOL. <https://www.interpol.int/en/Crimes/Cybercrime/COVID-19-cyberthreats>. Accessed July 2021.  
<sup>3</sup> Hershman, E. Total Identity Fraud Losses Soar to \$56 Billion in 2020. Businesswire. 2021. <https://www.businesswire.com/news/home/20210323005370/en/Total-Identity-Fraud-Losses-Soar-to-56-Billion-in-2020>. Accessed July 2021.  
<sup>4</sup> Nok Nok Labs CEO: Online Customers Give Better Identity Signals Than Fraudsters. PYMNTS.com. <https://www.pymnts.com/pymnts-post/identity/2021/nok-nok-ceo-online-customers-give-better-identity-signals-than-fraudsters/?c=nok-nok>. Accessed July 2021.

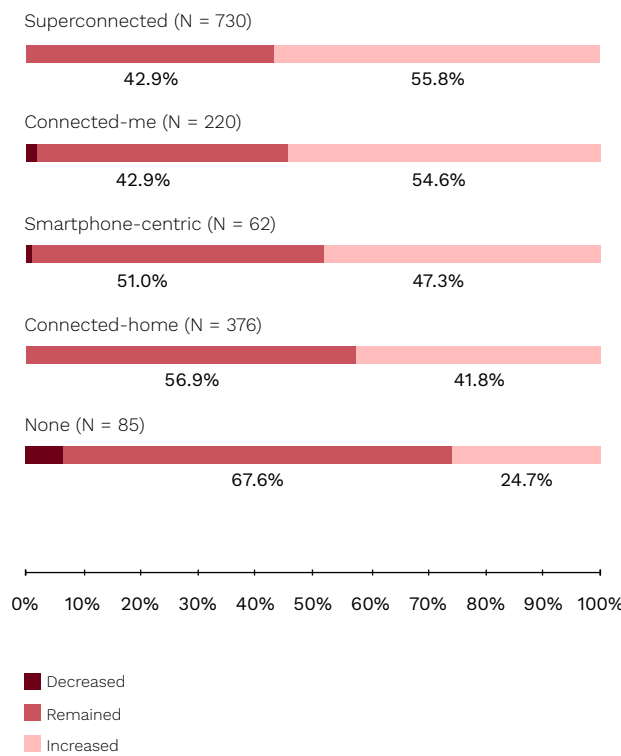
**PART I:**  
THE NEW GENERATION OF DIGITAL PLATFORM SUPERUSERS

**Generation Superconnected**

Younger, affluent and urban consumers are increasing their use of digital and mobile banking and are the most interested in new digital security measures. Millennials were the first digital-native generation. They are likely to own multiple connected devices that provide seamless interactivity between shopping platforms, payment methods and their banks, saving time and allowing them to make purchases more easily, such as by voice command. Consumers who have increased their use of online and mobile banking apps are also more likely to own more connected devices than the rest. Our study showed that 60 percent of millennials and more than half of high-income earners have increased their use of online and mobile banking. Superconnected consumers, those who have six or more connected devices, are convenience-focused, and their increasing adoption of digital banking highlights their comfort with digital tools.

Along with younger consumers, the affluent and urban dwellers are the most interested in enhanced security measures, such as the two-factor authentication (2FA) or three-factor authentication (3FA) methods that power passwordless authentication.

**FIGURE 1:**  
**CHANGES IN USAGE OF ONLINE OR MOBILE BANKING**  
Use of online or mobile banking over the last 12 months, by connected persona type



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

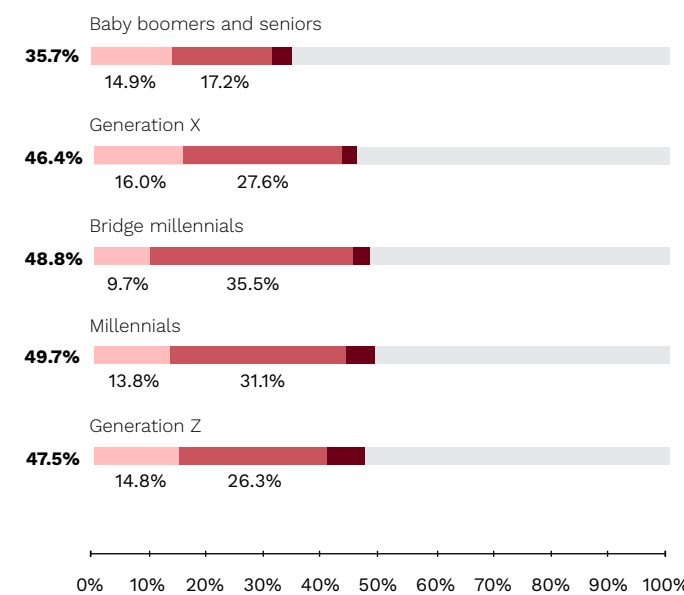
**FIGURE 2:**  
**CHANGES IN USAGE OF ONLINE MOBILE BANKING OPTIONS**  
Use of online mobile banking options, by generation and income

	Annual income			Generation				
	Under \$50K	\$50K - \$100K	\$100K+	Generation Z	Millennials	Bridge millennials	Generation X	Baby boomers and seniors
Increased	42.3%	49.8%	52.6%	53.9%	60.0%	53.2%	48.4%	39.6%
Remained	54.8%	48.9%	46.0%	42.1%	38.7%	45.3%	50.3%	58.4%
Decreased	2.9%	1.3%	1.5%	4.0%	1.3%	1.5%	1.4%	2.0%

Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

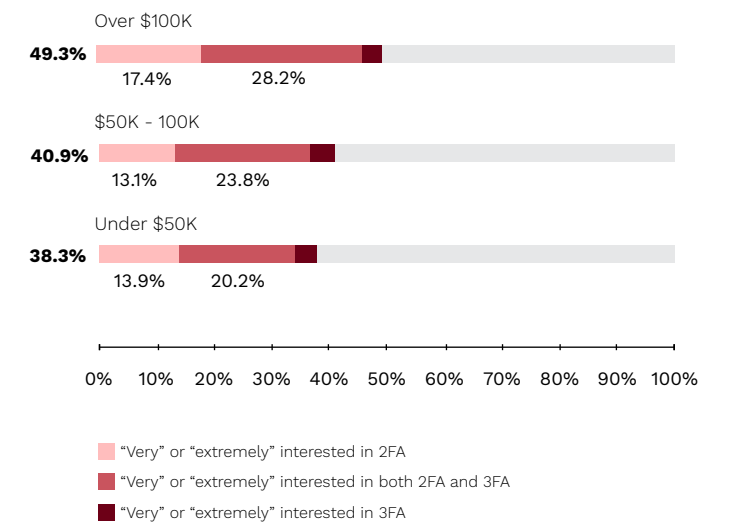
PYMNTS found that 24 percent of all respondents would like to use both 2FA and 3FA, with bridge millennials and high-income earners reporting the greatest interest in enhanced security.

**FIGURE 3:**  
**CONSUMER INTEREST IN 2FA AND 3FA**  
3A: Interest in 2FA and 3FA, by generation



Very or extremely interested in 2FA  
Very or extremely interested in both 2FA and 3FA  
Very or extremely interested in 3FA

3B: Interest in 2FA and 3FA, by annual income

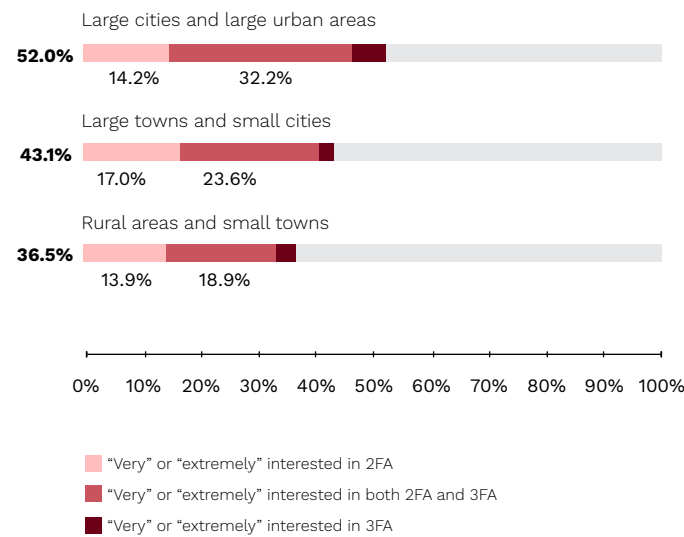


Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

Consumers in urban areas or larger towns show a higher interest in enhanced security than those in rural areas. Our researchers found that 52 percent of those living in large cities and large urban areas are “very” or “extremely” interested in using multifactor authentication (MFA), with 6 percent of this group reporting that they are

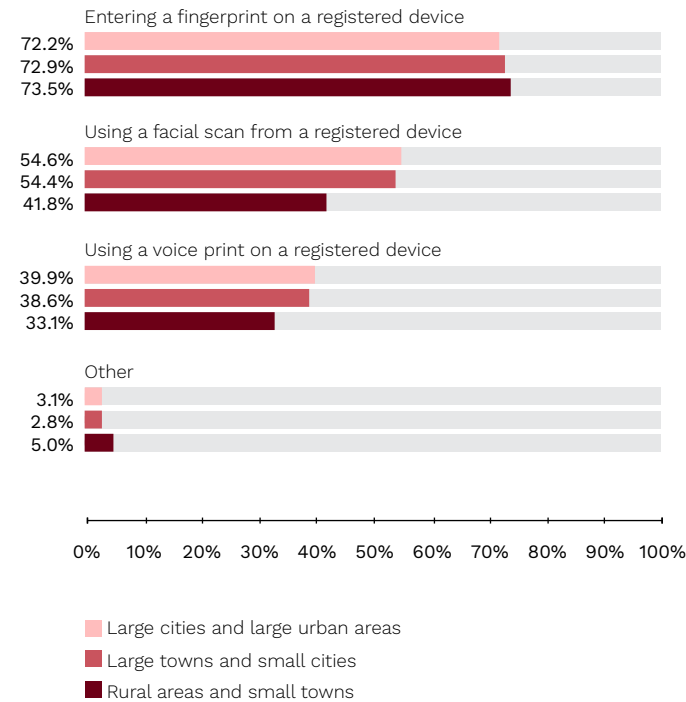
**FIGURE 4:**  
**CONSUMERS “VERY” OR “EXTREMELY” INTERESTED IN MFA**

4A: Share of consumers who are “very” or “extremely” interested, by area size



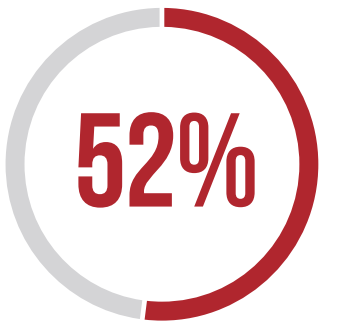
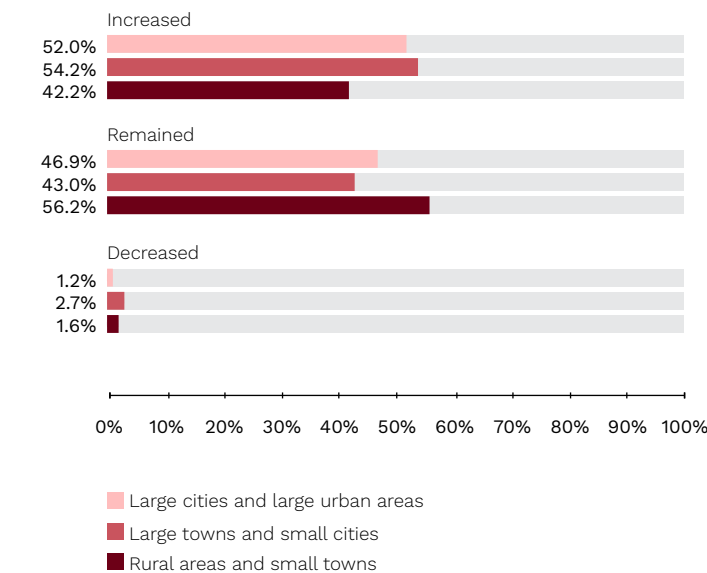
highly interested in 3FA. Consumers in these areas are also far more comfortable using passwordless authentication methods such as facial scanning, which uses facial recognition, among other data, to authenticate identities. Consumers in urban areas, large towns, small cities and rural areas showed similar levels of interest in the use of fingerprint-based authentication.

4A: Share of consumers who are “very” or “extremely” interested, by type of MFA

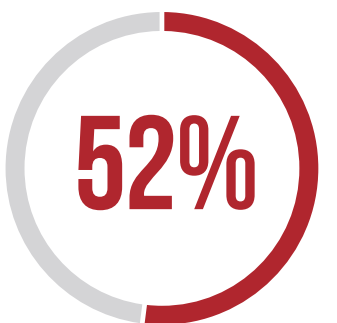


Urban consumers are also highly engaged and sophisticated users of digital banking tools and are more likely than rural residents to use them. More than half of those who live in large cities or large urban areas and those living in large towns and small cities have also increased their use of online or mobile banking in the last 12 months. These groups tend to surpass rural and small town residents in their use of passwordless authentication methods.

**FIGURE 5:**  
**CHANGES IN USAGE OF ONLINE OR MOBILE BANKING**  
Consumer use of online and mobile banking over the last 12 months, by area size



Share of consumers in large cities and large urban areas who are “very” or “extremely” interested in multifactor authentication

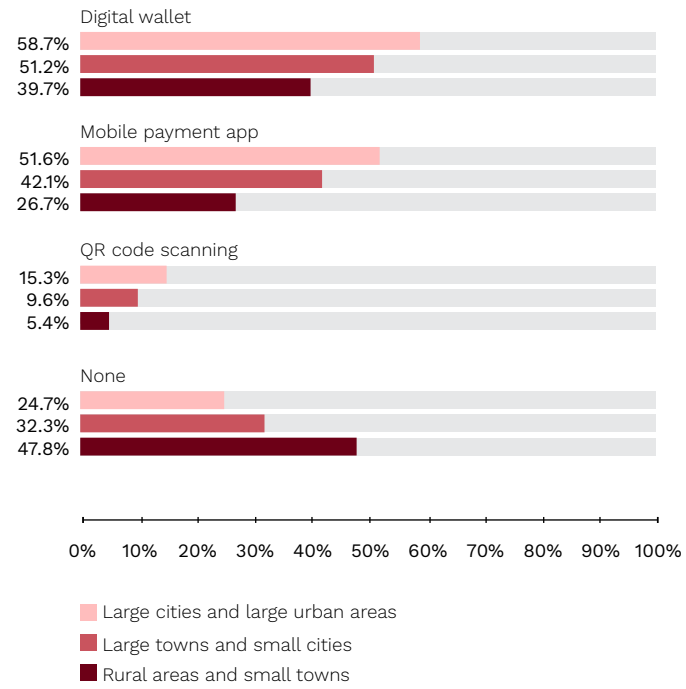


Share of consumers in large cities and urban areas who increased their use of online or mobile banking platforms

Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

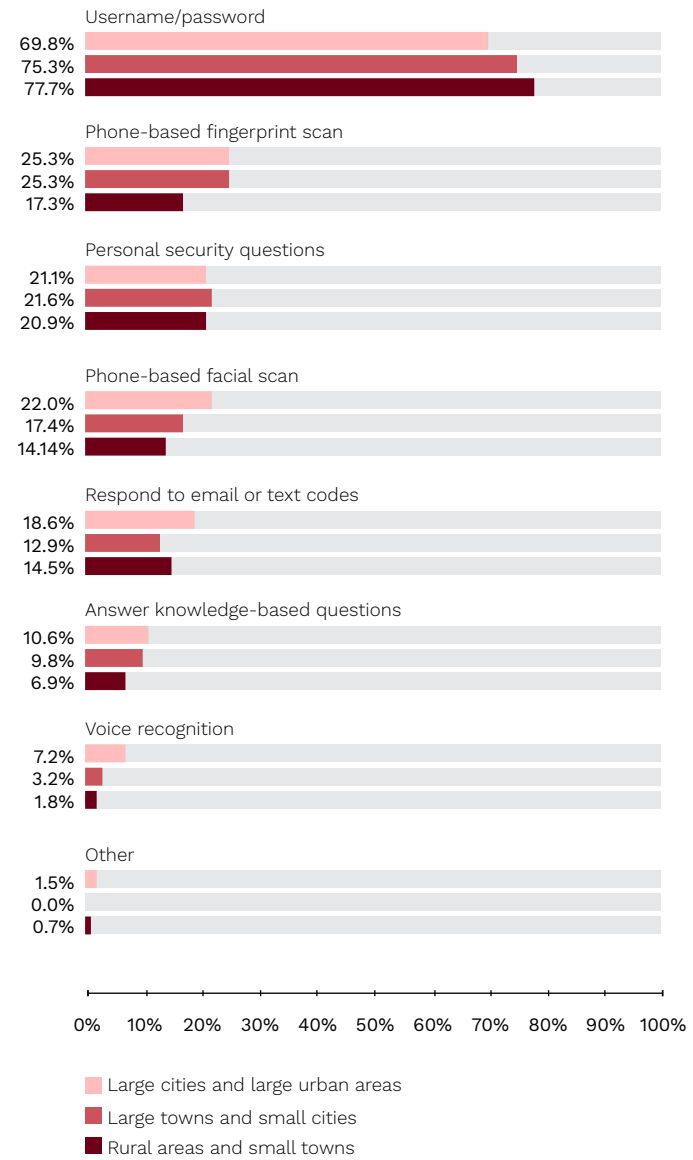
Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

**FIGURE 6:**  
**USAGE OF DIGITAL APPLICATIONS**  
Use of digital applications to pay for goods and services, by area size



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

**FIGURE 7:**  
**USAGE OF LOGIN METHODS**  
Most used login methods, by area size



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report



# WHO ARE SUPERCONNECTED CONSUMERS?

Superconnected consumers are affluent, young and digitally savvy. They use multiple devices to help them curate shopping, lifestyle and entertainment experiences that meet their needs wherever they are — at home, in stores or at work.<sup>5</sup> They were early adopters of digital wallets and remain enthusiastic users of payment options that save them time and remove friction at checkout. The past year’s digital shift,

during which many consumers transferred in-store and in-person activities to online channels, boosted superconnected consumer engagement with digital payment tools. PYMNTS’ research found that 60 percent of millennials and 53 percent of higher-income earners have increased their use of online or mobile banking in the last 12 months. The superconnected are active shoppers driven by value for their time: They spend more on convenient, on-demand services, like quick-service restaurants, and tend to use an average of six devices to connect with the platforms and services that help them make the most of their time.<sup>6</sup>

## Personas:

### SUPERCONNECTED CONSUMERS

These consumers are the 39 percent who have six or more connected devices.

### CONNECTED-HOME CONSUMERS

One-fifth of consumers belong to this group, whose users own a voice-activated device or smart appliance among their six or fewer connected devices.

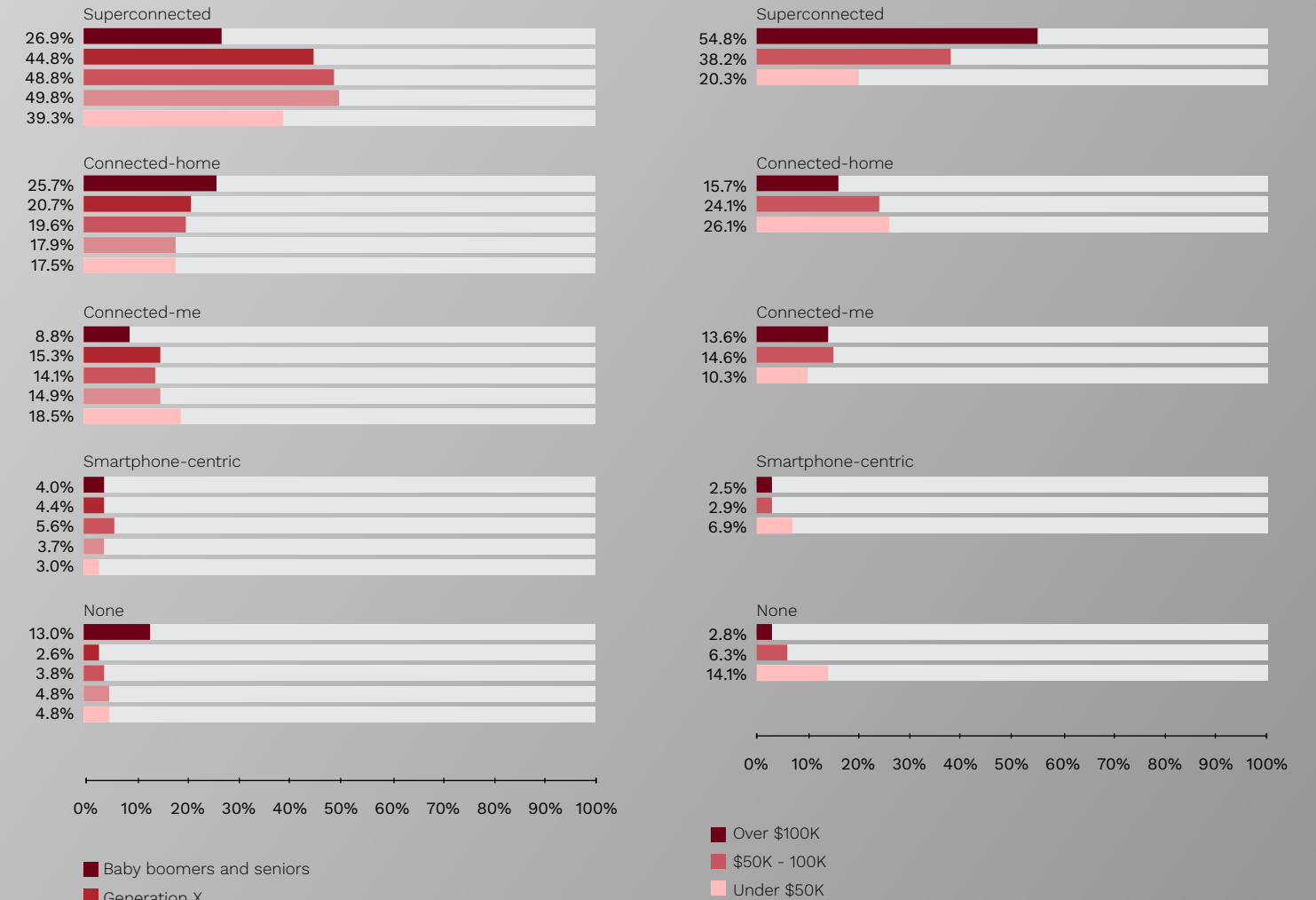
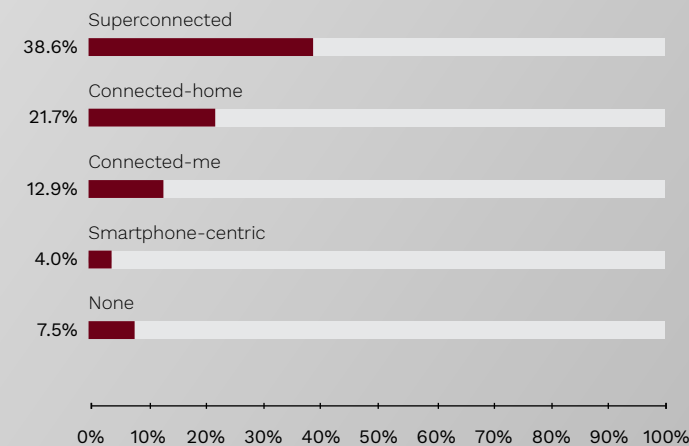
### CONNECTED-ME CONSUMERS

Thirteen percent are connected-me consumers, who own connected wearable devices among their six or fewer devices.

### SMARTPHONE-CENTRIC

This group consists of the 4 percent of consumers who own only smartphones, and the 15 percent who own only a smartphone and a tablet or computer.

**FIGURE 8:**  
**CONNECTED PERSONA**  
Connected persona, by whole sample, share of generation and income group



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

<sup>5</sup> Webster, K. How Consumers Live In The Connected Economy. PYMNTS.com. 2021. <https://www.pymnts.com/commerce-connected/2021/how-consumers-live-in-the-connected-economy/>. Accessed July 2021.

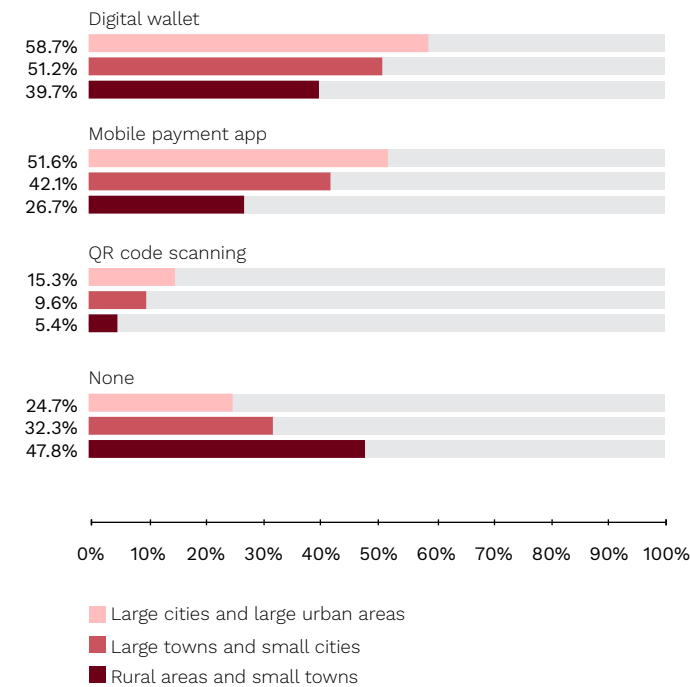
<sup>6</sup> The Rise Of eCommerce And Superconnected Consumers. PYMNTS.com. 2021. <https://www.pymnts.com/today-in-data/2021/the-rise-of-ecommerce-and-superconnected-consumers/>. Accessed July 2021.

**PART II:**  
THE NORMALIZATION OF PAYMENT INNOVATION

**The digital shift's next wave**

National and digital bank customers are widely embracing digital channels and are increasing their adoption of innovative payment methods such as QR codes. Our research found that half of consumers increased their use of online or mobile banking over the last 12 months, with young adults and the affluent showing the greatest gains. Digital money management is now part of consumers' toolkits for navigating online and in-store experiences. PYMNTS' research found that 49 percent of consumers currently use digital wallets to pay for goods and services, and 37 percent use digital wallets to pay more than other method. Overall, digital wallets are the most used applications to pay for goods and services. These numbers represent 97.7 million and 74.9 million United States consumers, respectively.

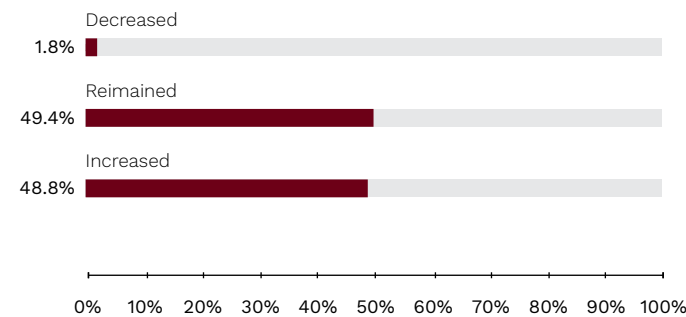
**FIGURE 9:**  
**USAGE OF DIGITAL APPLICATIONS TO PAY FOR GOODS AND SERVICES**  
Most used digital applications to pay for goods and services, by area size



Source: PYMNTS | Nok Nok Labs  
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Half of the consumers who use digital payment applications have increased their use during the last 12 months. More than 20 percent of consumers who use each digital banking application have "significantly" increased their use of each app over the last 12 months.

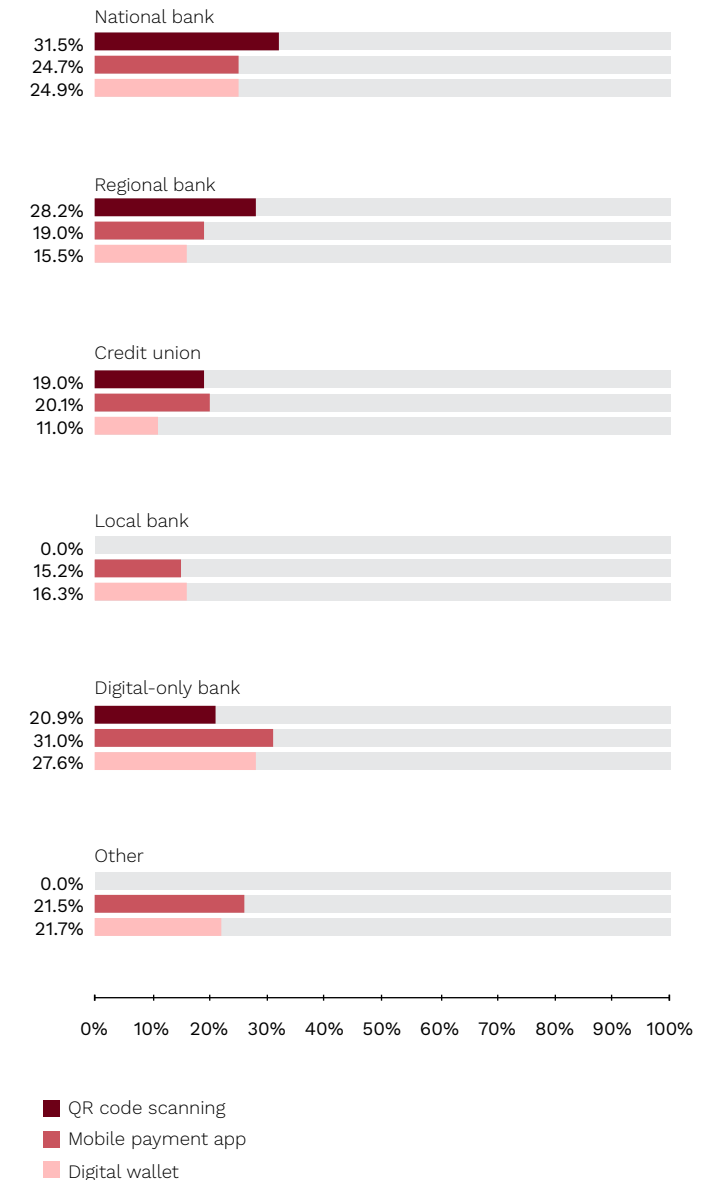
**FIGURE 10:**  
**CHANGES IN USAGE OF ONLINE OR MOBILE BANKING**  
Change in use of online or mobile banking tools over the past 12 months



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

Digital banking app adoption rates saw the biggest gains at national and digital banks. Digital bank users have increased their use of mobile payment apps (31 percent) and digital wallets (28 percent) the most. QR codes have seen the highest adoption rate during the past year. Twenty-seven percent of respondents who use them have significantly increased their use of QR codes, compared to 23 percent who have increased their use of mobile apps and 21 percent who are now using digital wallets more often. QR code adoption rose by 32 percent at national banks.

**FIGURE 11:**  
**USAGE OF DIGITAL APPLICATIONS**  
Use of digital applications during the past year, by type of FI



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

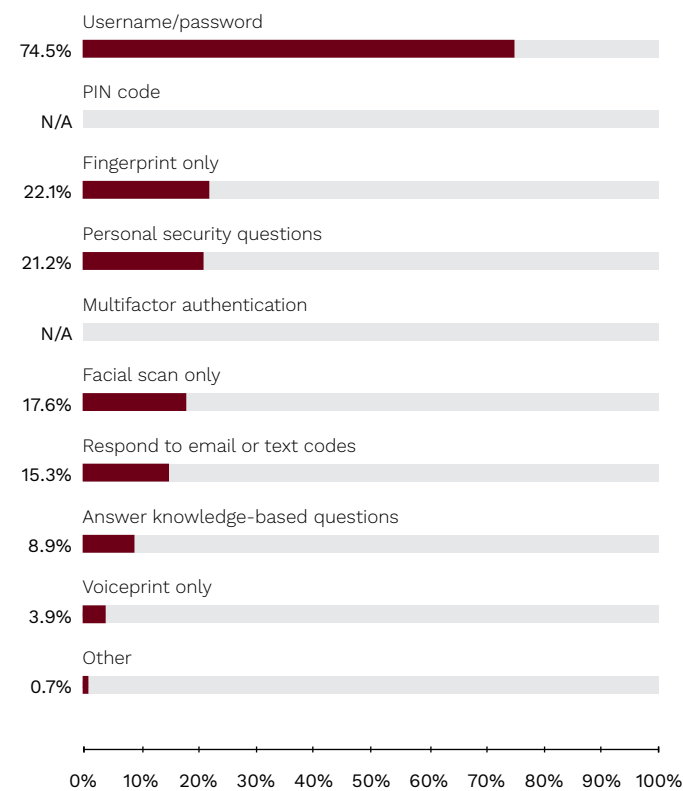
**PART III:**  
IT IS TIME FOR A CHANGE

**Consumers want secure alternatives to username and password authentication — yesterday.**

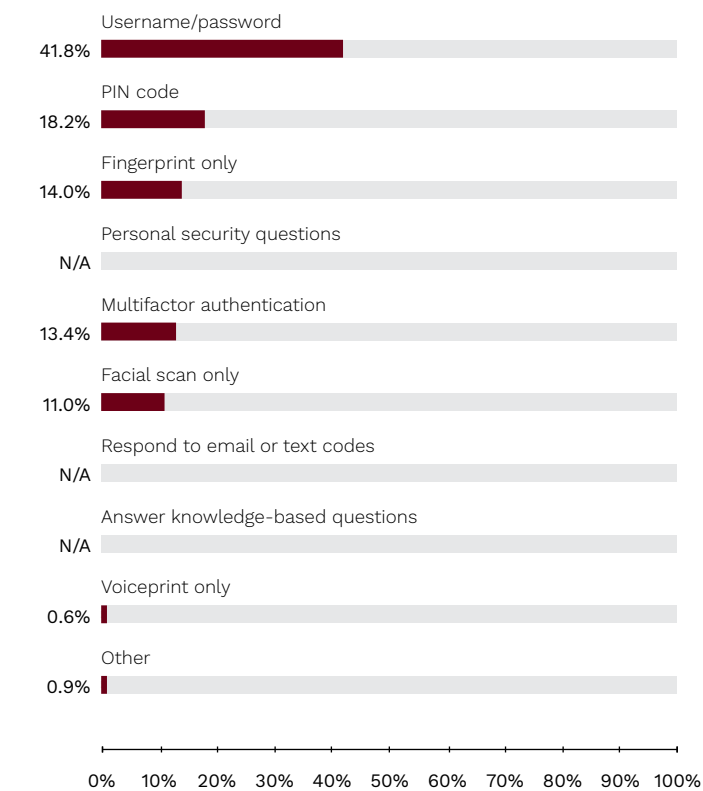
Our research found that three-quarters of consumers are using usernames and passwords to access bank accounts, but only 42 percent prefer to do so.

**FIGURE 12:**  
**USAGE VERSUS PREFERENCE FOR LOGIN METHODS**

12A: Login methods used by respondents who interact with their banks using a mobile or online channel



12B: Preferred login method among all consumers (percent over complete responses)



Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

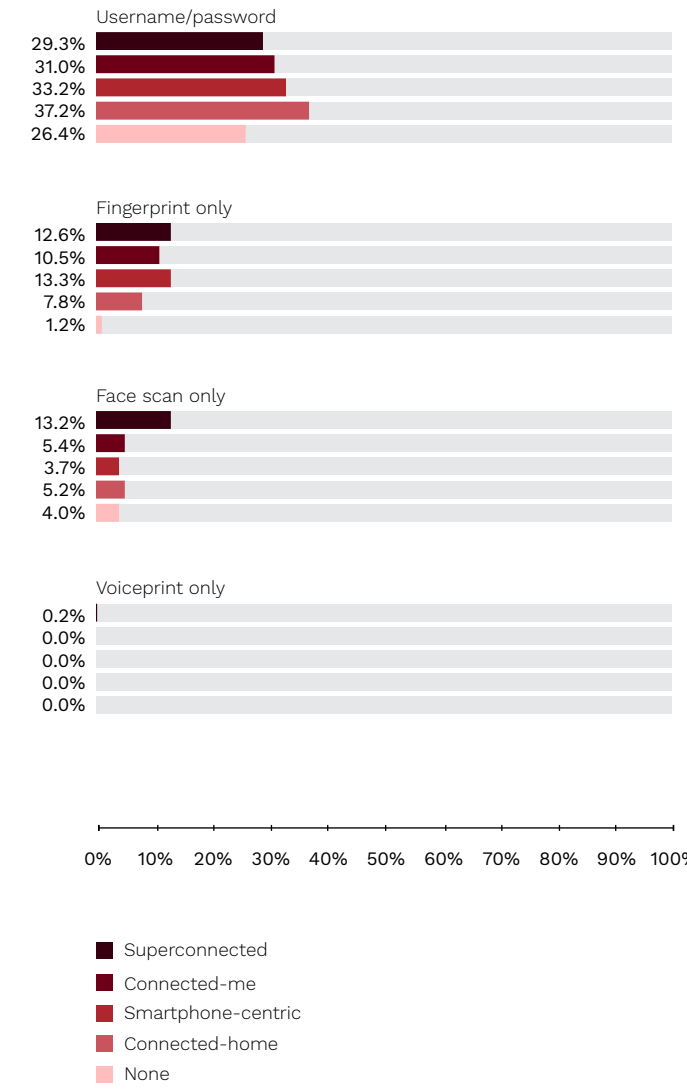
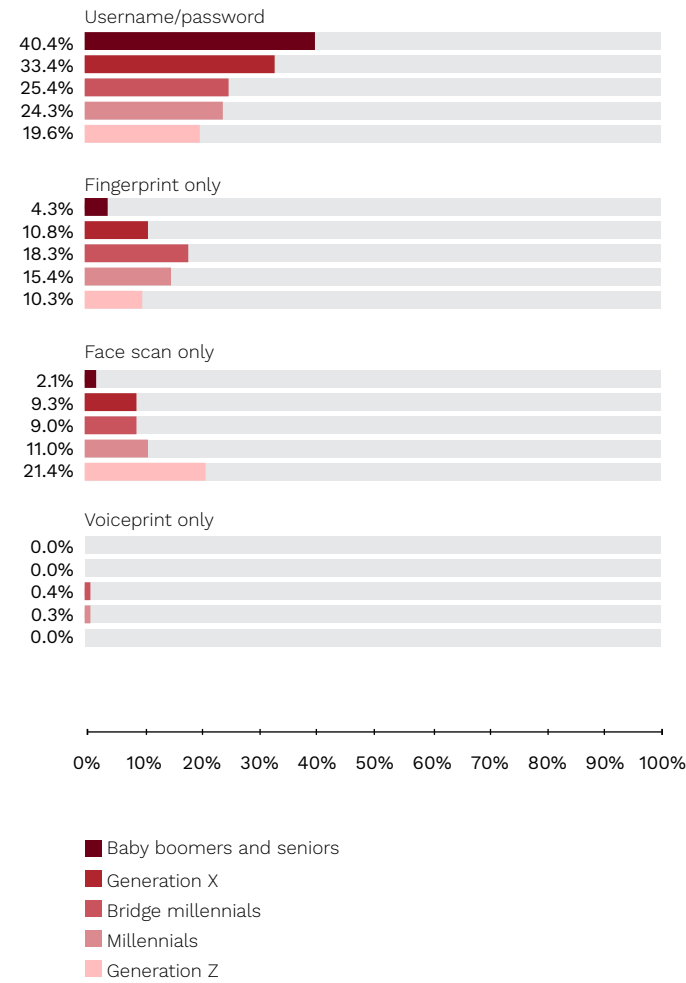
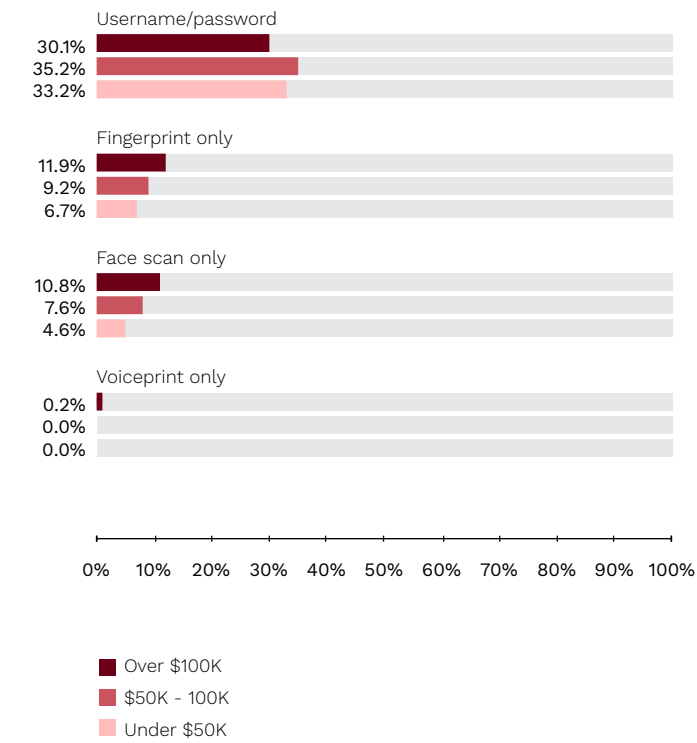




Despite only a minority of consumers expressing a clear preference for password-based login, adoption rates for secure passwordless authentication are relatively low. Less than one-quarter of consumers use any type of biometric tools such as fingerprints (22 percent), facial scans (18 percent) or voice recognition (4 percent). Superconnected consumers showed the lowest preference levels for username and password logins and the highest levels of interest in passwordless user authentication.

**FIGURE 13:**  
**USAGE OF PREFERRED LOGIN METHODS**

Share of consumers using their preferred login methods, by income, generation and connected persona



Portion of consumers earning more than \$100,000 who prefer and use username/password logins



Share of Generation Z consumers who prefer and use usernames/passwords to log in to digital services

Source: PYMNTS | Nok Nok Labs  
Generation Superconnected: The Coming User Authentication Shift Report

# CONCLUSION

Only a few consumers prefer usernames and passwords to access their bank accounts. Those most interested in new ways of managing their banking experiences include superconnected consumers, who encompass Gen Z, millennials and the affluent, along with national or digital bank customers. Consumer interest in MFA, which facilitates secure, passwordless bank account management, is highest among the same groups. FIs seeking to improve customers' experiences while enhancing digital security have a large and growing potential audience in the country's most engaged customers — superconnected consumers.

## METHODOLOGY

**Generation Superconnected:** The Coming User Authentication Shift Report is based on responses to a census-balanced survey of adult American consumers. The survey used 2,127 complete responses to a survey that took an average of 6 minutes and 57 seconds to complete. The survey asked questions regarding user comfort with sharing personal data and payment credentials with merchants and digital platforms as well as consumers' preferred methods of logging in to digital platforms.

# ABOUT

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DISCLAIMER ■

**PYMNTS.com** **PYMNTS.com** is where the best minds and the best content meet on the web to learn about “What’s Next” in payments and commerce. Our interactive platform is reinventing the way in which companies in payments share relevant information about the initiatives that shape the future of this dynamic sector and make news. Our data and analytics team includes economists, data scientists and industry analysts who work with companies to measure and quantify the innovation that is at the cutting edge of this new world.



Nok Nok Labs, Inc., based in San Jose, CA, was founded to transform online authentication for modern computing. The company is backed by a team of security industry veterans from PGP, Netscape, PayPal and Phoenix who have a deep experience in building internet scale security protocols and products.

The company’s products transform authentication by enabling end-to-end trust across the web using authentication methods that are natural to end-users and provide strong proof of identity. Its solutions provide organizations with greater flexibility to utilize strong authentication solutions in adaptable ways.

Its technology solutions allows companies to scale their authentication systems to meet the challenges posed by the rapid growth of users utilizing different internet-connected devices, performing a wide range of online transactions. For more about Nok Nok Labs, visit [www.noknok.com](http://www.noknok.com).

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