

# TRACKING THE DIGITAL PAYMENTS TAKEOVER

BIOMETRIC AUTHENTICATION IN THE AGE OF MOBILE

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September 2023

**Tracking the Digital Payments Takeover: Biometric Authentication in the Age of Mobile**, a PYMNTS Intelligence and AWS collaboration, examines consumers' increasing use of biometric authentication when using mobile devices to shop online. We surveyed a census-balanced panel of 3,278 U.S. consumers between July 20 and July 25 to discover what they expect from biometric authentication and learn what drives them to use biometrics over other authentication methods when making online purchases.

# TRACKING THE DIGITAL PAYMENTS TAKEOVER

BIOMETRIC AUTHENTICATION IN THE AGE OF MOBILE

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Tracking the Digital Payments Takeover: Biometric Authentication in the Age of Mobile was produced in collaboration with Amazon Web Services, and PYMNTS Intelligence is grateful for the company's support and insight. [PYMNTS Intelligence](#) retains full editorial control over the following findings, methodology and data analysis.

## TABLE OF CONTENTS

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Introduction . . . . .	04
Key Findings . . . . .	06
Conclusion . . . . .	22
Methodology . . . . .	23

# Introduction

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The convenience and the security of biometric authentication have continued to gain prominence, especially as digital-first consumers increasingly use their mobile devices to shop online for everything from groceries to retail products to food from restaurants to travel and entertainment services. Password authentication, which is inherently cumbersome and comparatively insecure, is slowly but surely losing its ubiquity and becoming a thing of the past. Most — if not all — mobile devices can use either facial recognition or fingerprint scans to not only authenticate access to phones or tablets but also to the apps within.

Biometrics are increasingly enabling consumers to easily authenticate themselves when paying for products and services using their mobile devices. After all, biometric-enabled mobile devices remove key payment frictions, such as forgetting a username and password or having to type in a slew of numbers to use a credit or debit card, which historically have resulted in many abandoned shopping carts. Streamlining the checkout experience results in more completed sales in less time — a boon for any eCommerce merchant.

As the use of mobile devices for online purchases has increased, the popularity of biometrics to authenticate these transactions has likewise increased. PYMNTS Intelligence’s research finds that 28% of consumers prefer to use either fingerprint or facial recognition to validate their payments, with millennials and Generation Z consumers the most likely to prefer biometrics. Meanwhile, 22% of consumers prefer to use passwords, with baby boomers and seniors and Generation X the most likely to do so — making passwords, along with PINs, the most favored by older consumers. The drivers for using biometrics also vary across demographics: Younger generations use biometric solutions for convenience while older ones utilize them to enhance security.

Tracking the Digital Payments Takeover: Biometric Authentication in the Age of Mobile, a PYMNTS Intelligence and AWS collaboration, examines consumers’ increasing use of biometric authentication when using mobile devices to shop online. We surveyed a census-balanced panel of 3,278 U.S. consumers between July 20 and July 25 to discover what they expect from biometric authentication and learn what drives them to use biometrics over other authentication methods when making online purchases.

**This is what we learned.**

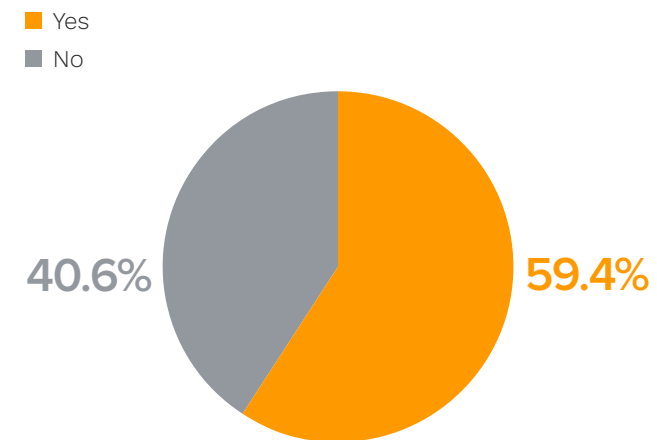
# The widespread use of mobile devices has led to a strong acceptance of biometric authentication methods, with one-half of online buyers validating their transactions this way.

Consumers can choose from a variety of authentication methods, yet biometrics remain the go-to for most consumers when shopping online via mobile device. Our study finds that 59% of consumers completed online purchases in the last 30 days, and 51% of this group used biometric authentication to validate these transactions. Another 15% did not use biometrics, but are interested in the technology. Just one-third of consumers who made a recent online purchase have not used biometrics and are not interested in doing so.

**FIGURE 1A:**

**Making online purchases**

Share of consumers who completed an online purchase in the last 30 days

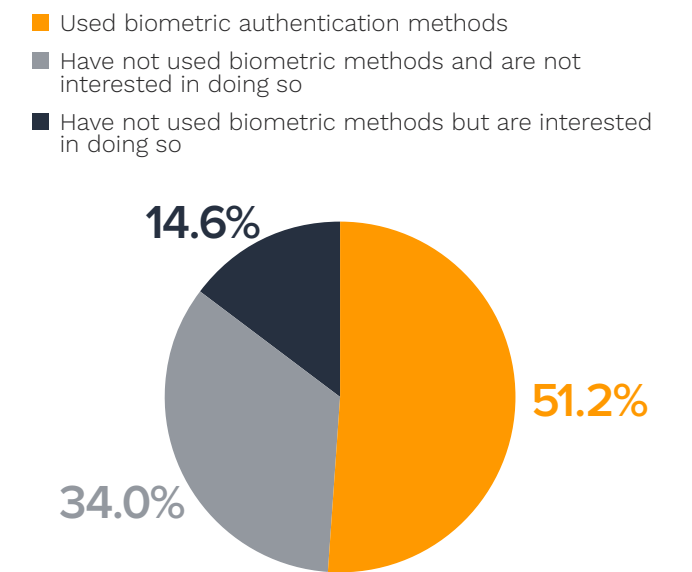


Source: PYMNTS Intelligence  
Tracking the Digital Payments Takeover, September 2023  
N = 3,278: Whole sample, fielded July 20, 2023 – July 25, 2023

**FIGURE 1B:**

**Making online purchases**

Share of consumers who completed an online purchase in the last 30 days, by use of biometric authentication methods



Source: PYMNTS Intelligence  
Tracking the Digital Payments Takeover, September 2023  
N = 1,986: Respondents who completed online purchases in the last 30 days, fielded July 20, 2023 – July 25, 2023

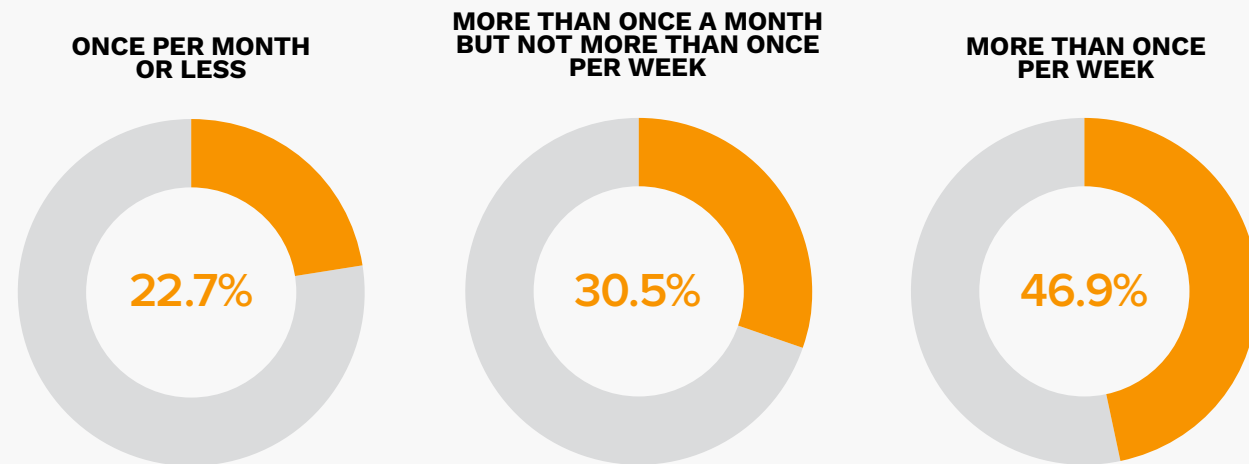
# 51%

Share of consumers who completed an online purchase in the last 30 days and **used biometric authentication** to do so

FIGURE 2:

**Biometric authentication habits**

Share of biometric users who validated online transactions with biometric methods with select frequencies

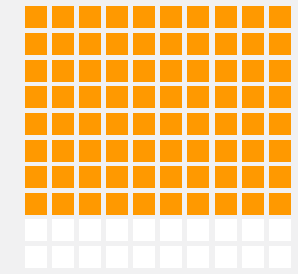


Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
N = 1,045: Respondents who have used biometric authentication methods, fielded July 20, 2023 – July 25, 2023

Biometric options are often quite literally at consumers' fingertips, data shows. More than 80% of consumers who use biometrics, such as fingerprint scans or facial recognition, say they use the technologies to make purchases via their mobile devices. Tablets hold second place, with about 1 in 10 consumers using biometrics on these devices. Very few consumers use biometrics on laptop or desktop computers. Roughly half of biometric users validate their online purchases this way more than once a week, while 31% use biometrics more than once a month and 23% use them once a month or less. The high share of weekly usage indicates that consumers who shop online on their mobile devices regularly find biometric authentication reliable and easy to use.

# 80%



Share of consumers using biometric authentication who say they use the technologies to **make purchases via their mobile devices**



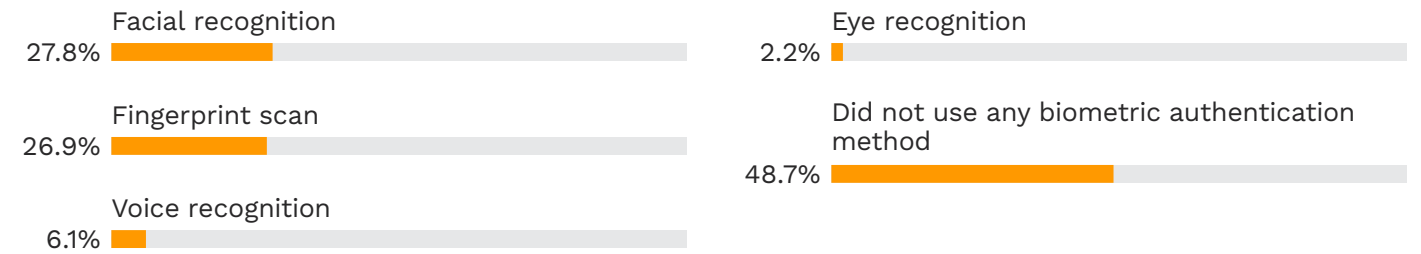
# Facial recognition and fingerprint scans are the most widely used biometric methods when making purchases on mobile devices, with at least 1 in 4 consumers using one of the two to validate their online transactions.

Although spy movies and futuristic sci-fi often depict eye scans and voice matching biometric methods, PYMNTS Intelligence’s research finds that in the real world, facial recognition and fingerprint scans have the highest usage rates. In fact, 60% of fingerprint scan users use this method to validate purchases more than once a week, while 58% of facial recognition users use the method more than once a week. Although voice and eye recognition technologies are out there, their use is much less frequent.

**FIGURE 3A:**

**Biometric methods consumers use**

Share of consumers who used select biometric methods to validate an online purchase in the last 30 days



**Source: PYMNTS Intelligence**  
Tracking the Digital Payments Takeover, September 2023  
N = 1,986: Respondents who completed online purchases in the last 30 days, fielded July 20, 2023 – July 25, 2023

**FIGURE 3B:**

**Biometric methods consumers use**

Share of consumers who used select biometric methods to validate an online purchase in the last 30 days, by generation

	Baby boomers and seniors	Generation X	Millennials	Generation Z
• Facial recognition	4.9%	22.3%	42.1%	51.0%
• Fingerprint scan	8.9%	28.0%	40.8%	29.3%
• Voice recognition	1.8%	6.9%	14.8%	7.7%
• Eye recognition	1.2%	6.7%	12.2%	7.9%
• Did not use any biometric authentication methods	83.7%	52.6%	25.5%	24.6%

**Source: PYMNTS Intelligence**  
Tracking the Digital Payments Takeover, September 2023  
N = 1,986: Respondents who completed online purchases in the last 30 days, fielded July 20, 2023 – July 25, 2023

Our data also confirms that younger consumers are more likely to use biometrics than older consumers. In fact, 84% of baby boomers and seniors have not used biometric authentication methods in the past 30 days. In contrast, 3 out of 4 Gen Z and millennial consumers have used biometrics. Moreover, 51% of Gen Z consumers specifically have used facial recognition methods specifically to validate their online purchases, leading all generations and indicating a comfort with more recent tech. Millennials lead in fingerprint scan usage, which was popularized a few years before facial recognition: 41% of this generation have used the method to validate online purchases.

When given a choice of all authentication methods, 28% of consumers chose either fingerprint scans or facial recognition as their preferred options, while 22% prefer passwords and 13% favor PINs. Baby boomers and seniors are the most likely to prefer legacy-standard passwords and PINs, at 31% and 17%, respectively. Bridge millennials are the most likely to prefer fingerprint scans, at 23%, while Gen Z chooses facial recognition more than other age groups, at 25%. A key differentiator likely impacting these preferences is consumers' preferred devices: This range suggests that Gen Z consumers are more likely to use mobile devices that enable facial recognition, while many millennials likely continue to use mobile devices that still feature fingerprint recognition as their primary biometric authentication method.

**FIGURE 4:****Preferred authentication methods**

Share of consumers who prefer select authentication methods to validate online purchases, by generation

	Whole sample	Baby boomers and seniors	Generation X	Bridge millennials	Millennials	Generation Z
• Entering a password	21.6%	31.5%	26.2%	17.2%	13.4%	15.1%
• Fingerprint scan	14.2%	6.3%	15.5%	22.8%	19.9%	12.5%
• Facial recognition	13.4%	3.3%	9.7%	15.0%	18.9%	24.5%
• PINs	12.9%	16.7%	14.6%	13.7%	10.6%	8.6%
• One-time passcode	11.0%	14.5%	12.0%	6.8%	8.7%	8.4%
• Two-factor authentication	9.9%	11.4%	8.6%	6.9%	9.4%	10.7%
• Providing an email address or phone number	7.2%	9.7%	4.8%	6.1%	6.3%	9.4%
• Answering security questions	3.8%	4.5%	4.1%	2.7%	3.0%	4.1%
• Eye recognition	2.2%	0.6%	1.9%	3.3%	3.6%	2.2%
• Voice recognition	2.0%	0.2%	1.9%	3.2%	3.8%	1.4%
• Token-based authentication	1.4%	0.3%	0.8%	1.9%	2.1%	2.7%
• Other	0.4%	1.0%	0.0%	0.5%	0.3%	0.4%

Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
N = 1,986: Respondents who completed online purchases in the last 30 days,  
fielded July 20, 2023 – July 25, 2023

# Drivers of biometric use on mobile devices differ across generations: Younger generations use biometric solutions for convenience while older consumers use them to enhance security.

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**The key benefits of biometric authentication, especially as a replacement for traditional username and password authentication, include increased security and fraud protection, convenience and faster checkouts.**

The improved security and fraud protection biometric authentication provides ranks as the second-most important factor for consumers overall, with 23% considering it the primary reason they use biometrics. Twenty-six percent of consumers value fingerprint scans for improved security and fraud protection, while 22% prefer facial recognition.

Baby boomers and seniors are most likely to cite security as a driver for using biometrics, with 35% saying this was the main reason to use them. In contrast, just 16% of Gen Z consumers use biometrics because of its security advantages.

Our study also finds that 26% of biometric users consider faster checkout the most important reason for choosing this type of authentication, while 19% report that the most important reason they choose biometrics is because using facial or fingerprint recognition is more convenient than other authentication alternatives. At 26% each, consumers cite faster checkout as the most important reason to use facial and fingerprint recognition, while convenience is cited as the most important reason by more consumers for using facial recognition than fingerprint scan (21% versus 17%).

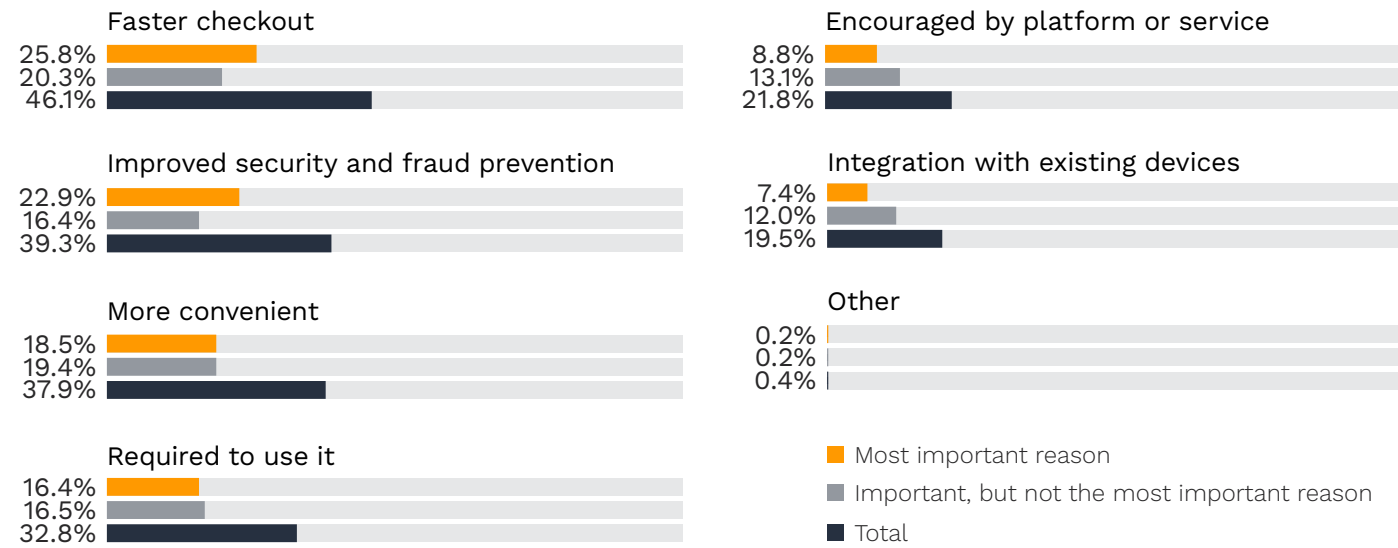
Young consumers are significantly more inclined to value biometric authentication because it facilitates a seamless checkout experience. Nearly half of Gen Z consumers use biometrics either for a faster checkout process or because they think the authentication is more convenient.



**FIGURE 5A:**

**Reasons for using biometric authentication**

Share of biometric users citing select reasons for using biometric authentication to validate online purchases in the last 30 days



Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
 N = 1,045: Respondents who have used biometric authentication methods, fielded July 20, 2023 – July 25, 2023

**FIGURE 5B:**

**Reasons for using biometric authentication**

Share of biometric users citing the most important reason for using biometric authentication to validate online purchases in the last 30 days, by generation

	Baby boomers and seniors	Generation X	Millennials	Generation Z
• Faster checkout	21.5%	24.5%	26.1%	28.6%
• Improved security and fraud prevention	35.2%	25.3%	22.3%	16.3%
• More convenient	13.9%	18.6%	18.7%	20.0%
• Required to use it	12.5%	14.7%	18.3%	15.8%
• Encouraged by platform or service	10.0%	7.4%	7.5%	12.5%
• Integration with existing systems	4.3%	9.5%	7.2%	6.9%
• Other	2.7%	0.0%	0.0%	0.0%

Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
 N = 1,045: Respondents who have used biometric authentication methods, fielded July 20, 2023 – July 25, 2023



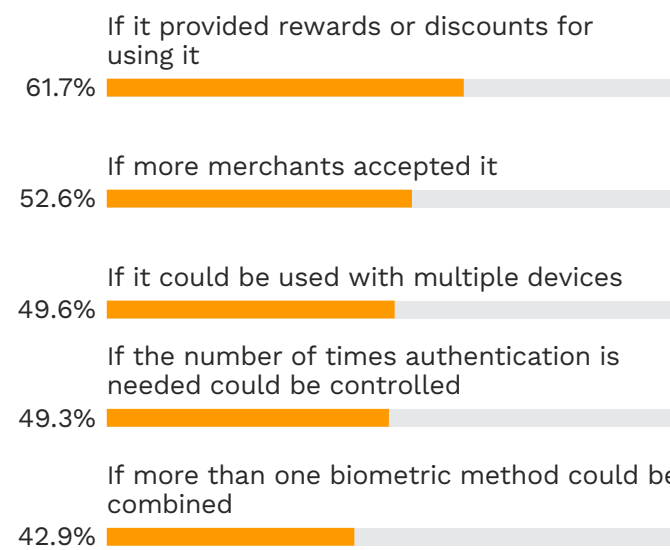
# At least half of consumers interested in using biometric solutions when transacting via mobile device could be persuaded to consider adopting them.

**Baby boomers and seniors are the generation most likely to not use biometrics, according to our study, either because they do not know how to use them or they prefer to enter their information manually.** Eighteen percent of Gen Z consumers who do not use biometrics are concerned about identity theft, meaning that consumers of this age group not using biometrics are most inclined to worry about security. Meanwhile, 17% of consumers who have not used biometric authentication methods in the last 30 days say they were not offered it.

**FIGURE 6A:**

**Willingness to use biometric authentication**

Share of online shoppers very or extremely likely to use biometrics to make payments under select circumstances



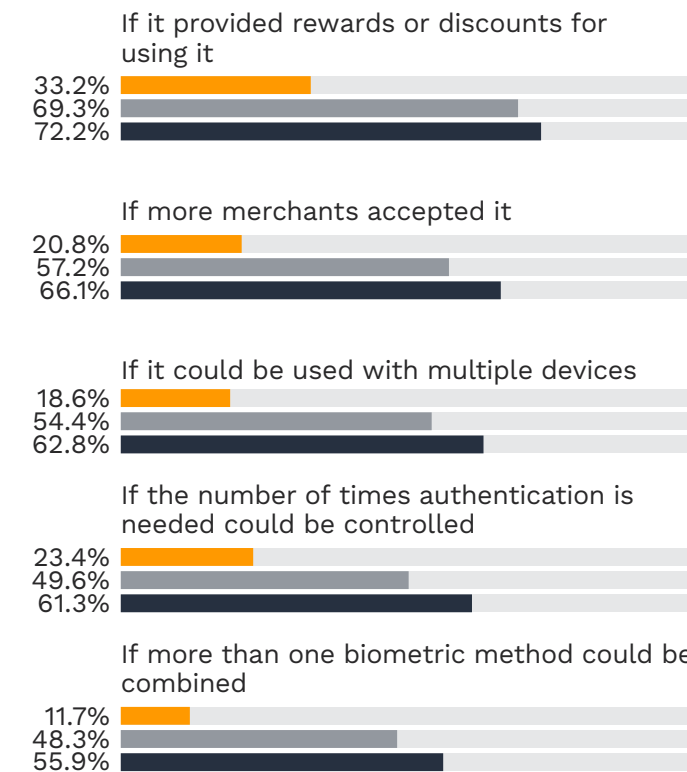
Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
 N = 1,986: Respondents who completed online purchases in the last 30 days, fielded July 20, 2023 – July 25, 2023

**FIGURE 6B:**

**Willingness to use biometric authentication**

Share of online shoppers very or extremely likely to use biometrics to make payments under select circumstances, by level of usage and interest



Source: PYMNTS Intelligence

Tracking the Digital Payments Takeover, September 2023  
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Convincing consumers who are not interested in using biometrics to use them could prove difficult. We found 33% of uninterested consumers would use biometrics if the merchant offered rewards or discounts for doing so, as would 73% of those already using biometrics and 69% of nonusers who were already interested in using biometrics. Offering rewards and discounts holds promise as a useful way to increase consumers' use of biometric authentication.

Those incentives can be relatively costly to implement, however. Other ways to effectively promote greater biometric adoption among current users include wider merchant acceptance, multiple device availability and control over the authentication process. Two-thirds of consumers who use biometrics to shop online say they would use it more often if more merchants accepted biometric authentication and if it could be used on multiple devices. Additionally, 61% of biometric users emphasize the significance of having more control over how often authentication is required.

Among nonusers interested in using biometric authentication methods, 57% are open to trying biometric authentication if it could be used on multiple devices, and 50% would do so if they had more control over how often authentication is required. Consumers not interested in using biometrics are also open to trying biometrics under these conditions, but at much lower rates.

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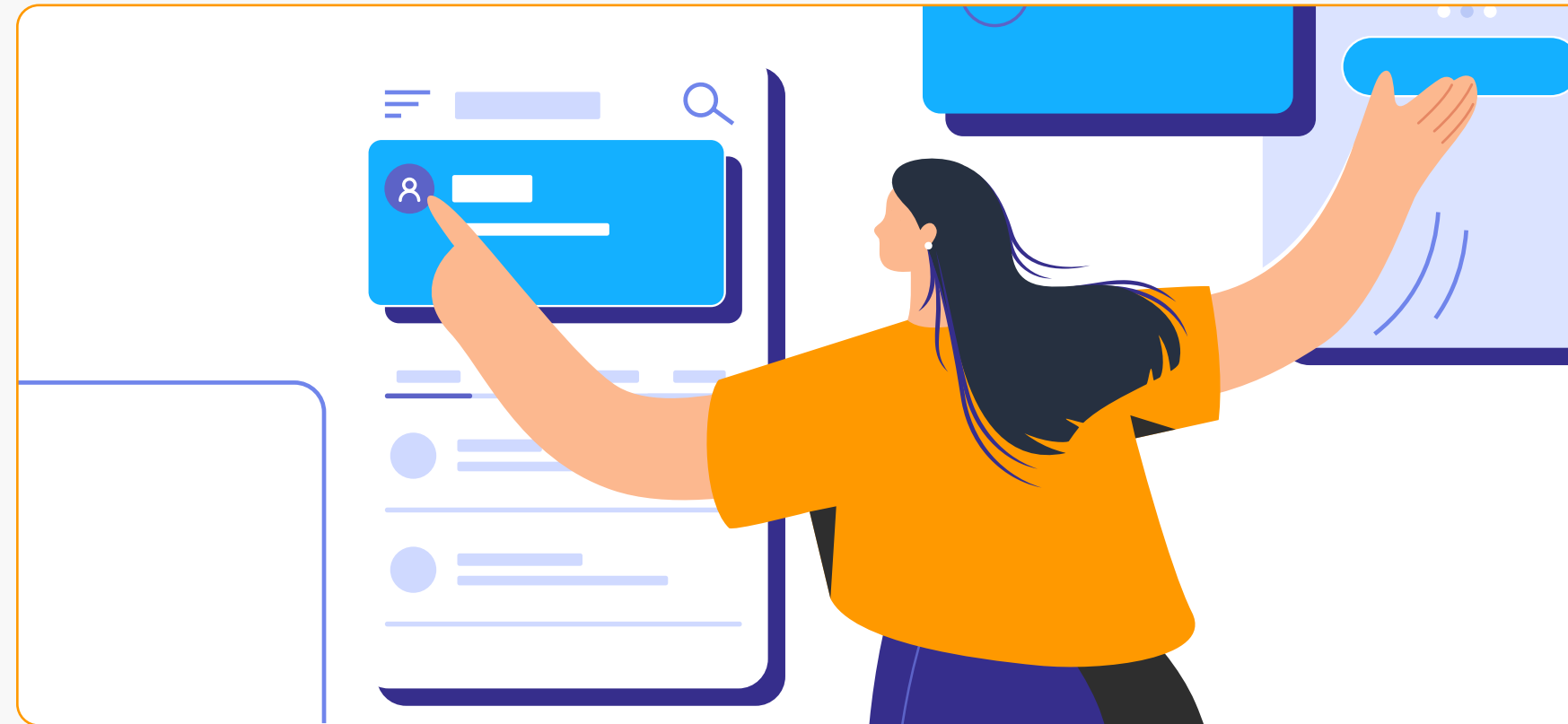
**Two-thirds** of consumers who use biometrics to shop online say they would use it **more often** if more **merchants accepted** biometric authentication and if it could be used on **multiple devices**.

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# Conclusion

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With consumers using mobile devices more and more to shop online for everything from groceries to travel, biometric authentication provides a highly secure and convenient way to validate online transactions. Whether via facial recognition or fingerprint scans, millennial and Gen Z consumers appreciate the faster checkouts biometrics provide, while baby boomers and seniors find improved security to be the key benefit. Yet not all consumers are sold, and offering rewards remains the most useful tool merchants can use to increase holdouts' use of biometric methods. Greater availability on devices and eCommerce sites is also vital to increasing usage, especially among current users and nonusers who show interest. Ultimately, merchants that do not support biometric authentication could be losing out on business. Digital-first consumers increasingly expect frictionless payment experiences when shopping online, and as passwords continue to lose favor, these shoppers may avoid or abandon sites that still make them type in information to complete purchases.



## Methodology

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Tracking the Digital Payments Takeover: Biometric Authentication in the Age of Mobile, a PYMNTS Intelligence and AWS collaboration, examines consumers' increasing use of biometric authentication when using mobile devices to shop online. We surveyed a census-balanced panel of 3,278 U.S. consumers between July 20 and July 25 to discover what they expect from biometric authentication and to learn what drives them to use biometrics over other authentication methods when making online purchases. Fifty-one percent of respondents identified as women, 32% had a college degree, the average age was 47 and 37% earned more than \$100,000 annually.

# About

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