

May 2025 Report

# DIGITAL PAYMENTS EVOLUTION: VIRTUAL CARDS POISED TO TAKE OFF



PYMNTS  
INTELLIGENCE

elan.  
Credit Card

# DIGITAL PAYMENTS EVOLUTION: VIRTUAL CARDS POISED TO TAKE OFF

## TABLE OF CONTENTS

What’s at Stake.....	04
Key Findings .....	10
The Full Story.....	14
Data Focus .....	32
Actionable Insights.....	36
Methodology.....	39
About .....	40

READ MORE



■ November 2024

**Consumers’ Financial Health  
and Spending Priorities  
Guide Credit Card Choices**



Digital Payments Evolution: Virtual Cards Poised to Take Off was produced in collaboration with Elan, 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.

# WHAT'S AT STAKE

---

**C**onsumers already use virtual cards more often than is commonly realized—and that adoption is poised to take off further this year. A virtual card works like a physical credit or debit card, minus the plastic, and is tied to a payment account with a fixed, 16-digit number, just like the one credit and debit cards have. Holders can stick with that original number or opt for security reasons to have their virtual card generate a temporary, unique number for each individual purchase when paying online or through a smartphone. Over the past six months, more than four in 10 U.S. consumers have used virtual cards. Now the payment method is poised for significant growth: Some 65% of consumers say they are likely to use a virtual card within the next 12 months. The path to adoption typically starts elsewhere, when a consumer opens a mobile wallet such as Apple Pay and digitizes their physical card to use when shopping online or in-store. More than half of consumers have already taken this step. As comfort with digital payment methods grows, consumers are increasingly exploring virtual cards for their ability to offer temporary numbers that protect against fraud, revealing a clear adoption pathway and significant growth opportunities.



# 19%

Increased likelihood that a consumer **with a physical card who experienced fraud will use a virtual card.**

---

The data highlights four key use cases for virtual cards: unique, temporary numbers for online shopping; automatic payments; single-purchase one-time; and merchant-specific virtual store cards. How technologically literate and enthusiastic about digital payments a consumer is plays a key role in whether they use virtual cards.

What we term the Tech Savvy Persona refers to the degree to which a consumer has both an affinity for connected technology and enthusiasm for owning connected mobile devices. Within that persona, Basic Tech consumers, who use only computers, mobile phones and smart TVs, make up 37% of the group. Those with a Mainstream Tech bent, meaning they also favor smart watches, gaming devices and tablets, comprise more than one in 2, or 55%. The most technologically sophisticated consumers, or the Connected Tech, favor all those digital devices but also electric vehicles, virtual reality headsets and connected security cameras. Baby boomers tend to be Basic Tech consumers (44%), while millennials (at 56%) and Gen Z (at 55%) dominate the Mainstream category.<sup>1</sup> Higher-income individuals tend to be Mainstream Tech, while lower-income skews toward Basic (52%).

---

<sup>1</sup> PYMNTS Intelligence uses the following birth dates and approximate age ranges in 2025 for generational cohorts: baby boomers: born in 1964 or earlier and now aged 61 or older; Generation X: born between 1965 and 1980 and now aged 45–60; millennials: born between 1981 and 1996 and now aged 28–44; bridge millennials: born between 1978 and 1988 and now aged 37–47; Zillennials: born between 1991 and 1999 and now aged 25–34; and Generation Z: born in 1997 or later and now aged 28 or younger.

What we term the Digital Finance Engagement persona refers to the degree to which a consumer uses digital financial apps or shops online. At the lowest level, 8.5% of consumers in this group are Inactive. Some 38% are Explorers, sometimes using apps or shopping online. Nearly half, or 44%, are Engaged, regularly using mobile banking apps and sometimes using digital finance apps for budgeting or investing. Some 9.3% are Enthusiasts, making daily or near-daily use of mobile banking or digital finance apps for budgeting or investing, and/or of apps for shopping online.

Because the two personas are at their highest levels interconnected, use of virtual cards is unsurprisingly highest among consumers in the Connected Tech and Digital Finance Enthusiast categories, at 73% and 70%, respectively. Meanwhile, shoppers with only a Basic Tech level of savviness or an Explorer level of digital financial engagement are less half as likely to use virtual cards. These figures suggest that financial institutions can accelerate the adoption of virtual cards by meeting consumers at their current affinity and digital adoption levels. That in turn means explaining to consumers the essential differences between virtual cards, digital wallets and traditional physical cards.



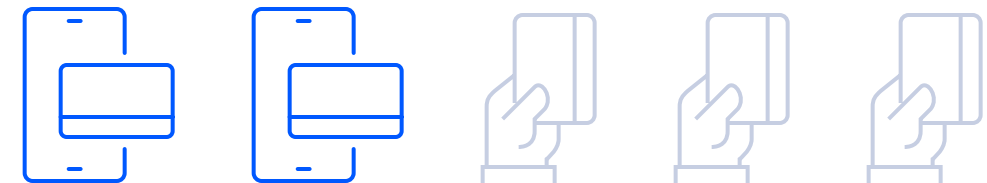
# 2 in 5

of all U.S. consumers used  
**a virtual card within the past six months,  
primarily for online shopping  
and subscription services.**

---

These are just some of the findings detailed in Digital Payments Evolution: Virtual Cards Poised to Take Off, a PYMNTS Intelligence and Elan collaboration. This edition examines how consumers adopt and use virtual cards and draws on insights from a survey of 2,250 U.S. consumers conducted from Feb. 12, 2025, to Feb. 28, 2025. The report highlights how digital comfort, security financial habits influence virtual card preferences today.

**This is what we learned.**

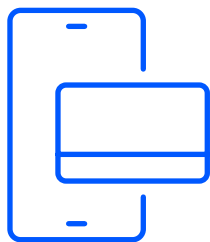


# KEY FINDINGS

01

## DITCHING PLASTIC

Many consumers now use virtual cards, predominately for online shopping and subscriptions.



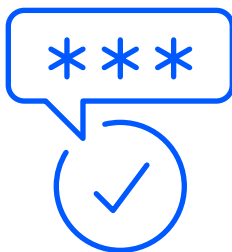
42%

of all consumers used virtual cards within the past six months

02

## DIGITAL SAFETY PIONEERS

Digital Finance Enthusiasts (making daily or near-daily use of mobile banking and/or apps for shopping online) are ahead of the curve, with more than five in 10 using one-time virtual card numbers.



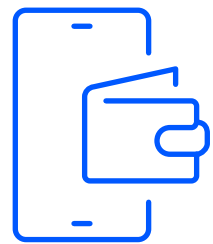
50%+

of Digital Finance Enthusiasts used a one-time virtual card number within the past year

03

### GETTING IT ALL TOGETHER, DIGITALLY

**Virtual card adoption is highest among the Tech Savvy and Digital Finance Enthusiasts, pointing to targeted growth opportunities.**



# 27%

of Connected Tech users cite digital wallet integration as their main reason for having used a virtual card to make a payment within the last six months

04

### POPULAR AND SET TO GROW

**Mainstream consumers show strong interest in virtual cards, but education about their benefits is fundamental to wider adoption.**



# 74%

of consumers prefer using virtual cards in at least one payment situation. Even more would climb on board if they better understood the added security, rewards and benefits.

# THE FULL STORY

---

## Definitions



A **virtual card** exists only in digital form, making it the digitized version of a traditional credit or debit card. It can be used for online purchases and be added to digital wallets for in-store payments. Virtual cards may have:

- A temporary virtual card number for online and mobile shopping
- A one-time, unique card number generated for individual transactions that are carried out via digital wallets



A **digital card** is a digitized copy of a physical card and is accessible through a digital wallet.



A **digital wallet** is an application on your phone, tablet, smart watch or computer that allows you make payments from your digital device. It stores your digitized credit or debit card information, other payment cards, tickets (such those for sporting events) and airline boarding passes. Common examples include Apple Pay, Google Wallet and PayPal.

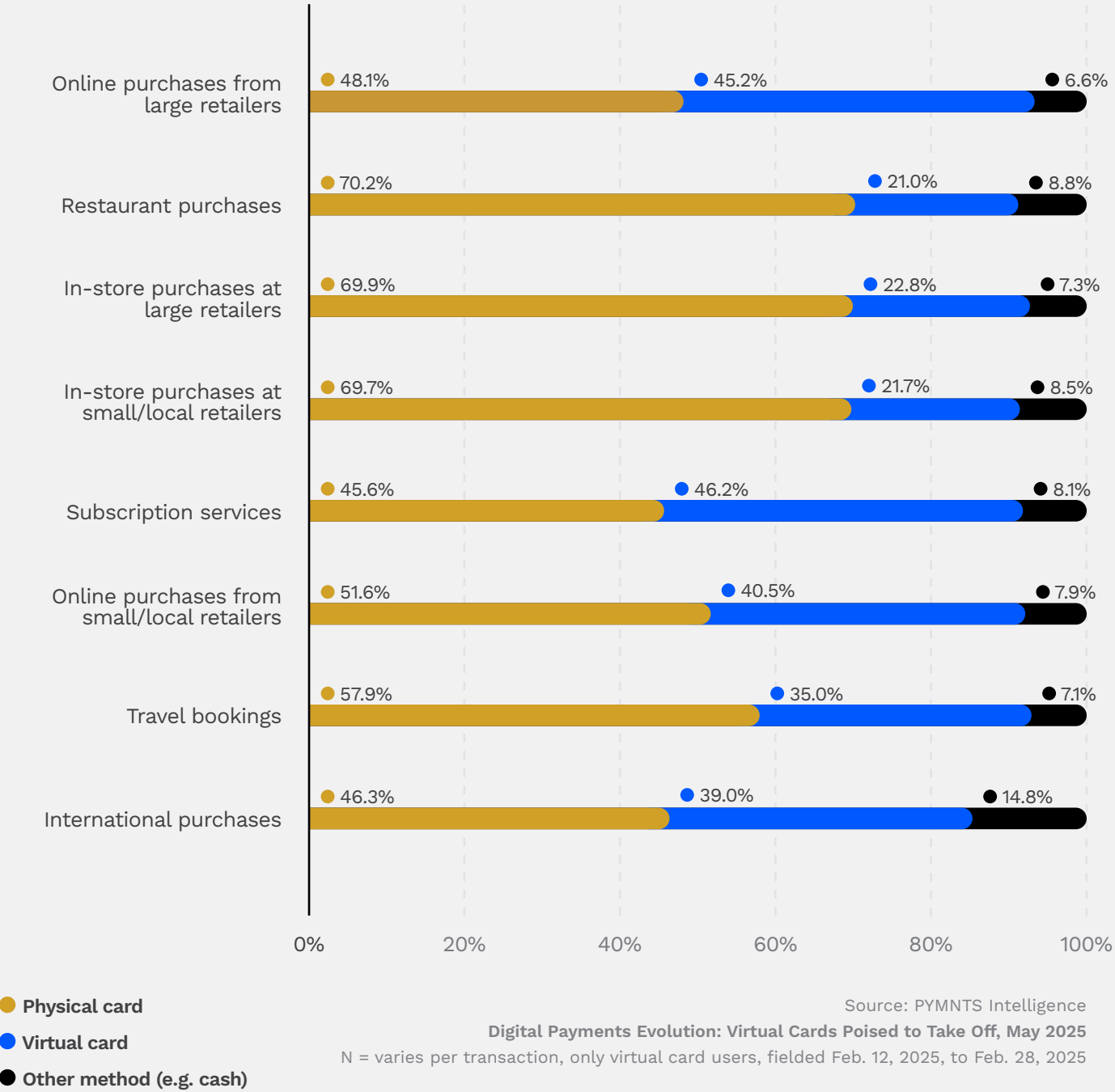
Consumers show strong interest in virtual cards, with Gen Z and those earning more than \$100,000 a year the most likely to have used one to make a payment within the past six months.



# Digital Wallets Provide a Gateway to Virtual Cards

While physical cards still dominate payments overall, nearly half of recent online purchases and subscriptions were made using a virtual card. Virtual cards differ meaningfully from digitized physical cards stored in digital wallets. Unlike physical cards that get digitized for storage in digital wallets, virtual cards exist solely in digital form. Their principle features consist of their lack of physical existence and the option for consumers to use them to generate unique numbers for individual transactions online or through mobile devices. Emphasizing these basic differences with traditional credit cards is critical: As consumers gain comfort with digital wallets (already used by 52%), many move toward virtual cards that offer more substantial control and fraud protection through one-time use numbers.

**FIGURE 1**  
**Where consumers use physical or virtual cards**  
Percentage of transactions made with select payment methods within the last six months

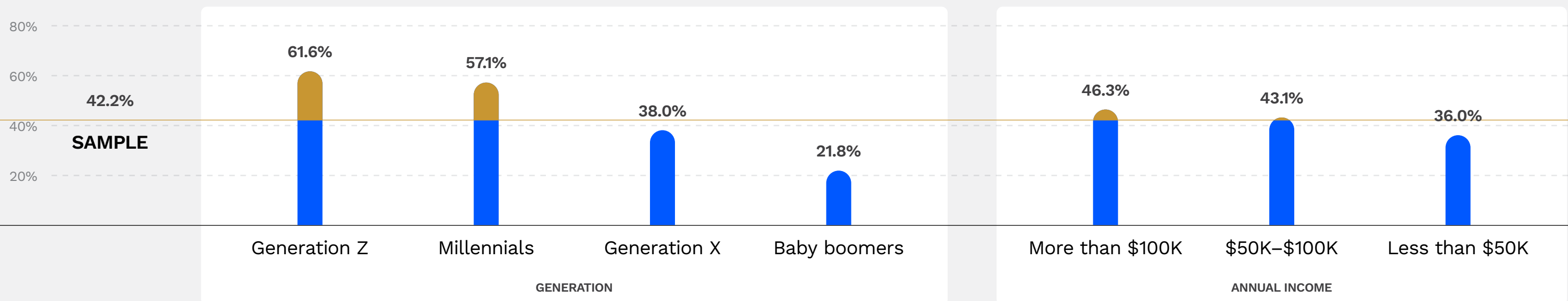


While younger and higher-income consumers lead in using virtual cards, gaps remain among older and lower-income groups. In the past six months, 62% of Gen Z and 57% of millennials used virtual cards, compared to just 22% of baby boomers. Similarly, 46% of consumers earning more than \$100,000 used virtual cards, versus 36% of those earning less than \$50,000. The data thus might suggest that age and income are correlated with adoption.

But the story is more complicated. While nearly three in four Connected Tech users have used a virtual card number for online shopping, just 45% of Mainstream and 33% of Basic Tech users say the same. The pattern repeats across advanced features: Half of Connected Tech users have used single-use card numbers (50%) and set up virtual cards in merchant apps (55%), while Basic Tech users trail at just 22% and 17%, respectively. These gaps suggest that adoption depends less on age or income than on fluency with technology—and that simplified, scenario-based messaging can help Mainstream users gain confidence and close the usage divide.

**FIGURE 2****How usage of virtual cards varies by generations and income**

Age groups that have used a virtual card to make payments within the past six months

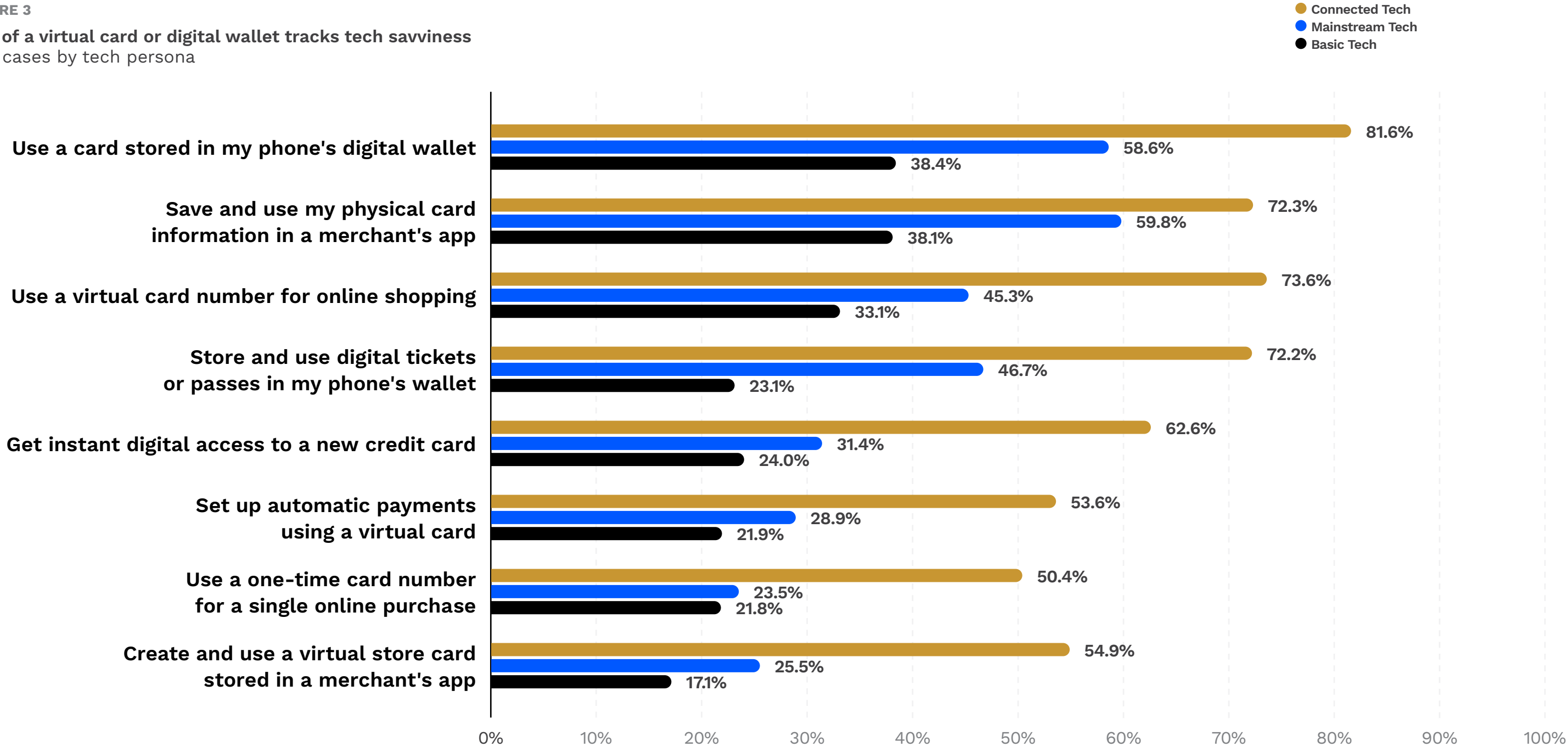


Source: PYMNTS Intelligence

Digital Payments Evolution: Virtual Cards Poised to Take Off, May 2025

N = 2,516: Whole sample, fielded Feb. 12, 2025, to Feb. 28, 2025

**FIGURE 3**  
**Use of a virtual card or digital wallet tracks tech savviness**  
Use cases by tech persona



Source: PYMNTS Intelligence  
Digital Payments Evolution: Virtual Cards Poised to Take Off, May 2025  
N = 2,250: Complete responses: Consumers who made at least one digital payment in the past six months, fielded Feb. 12, 2025, to Feb. 28, 2025

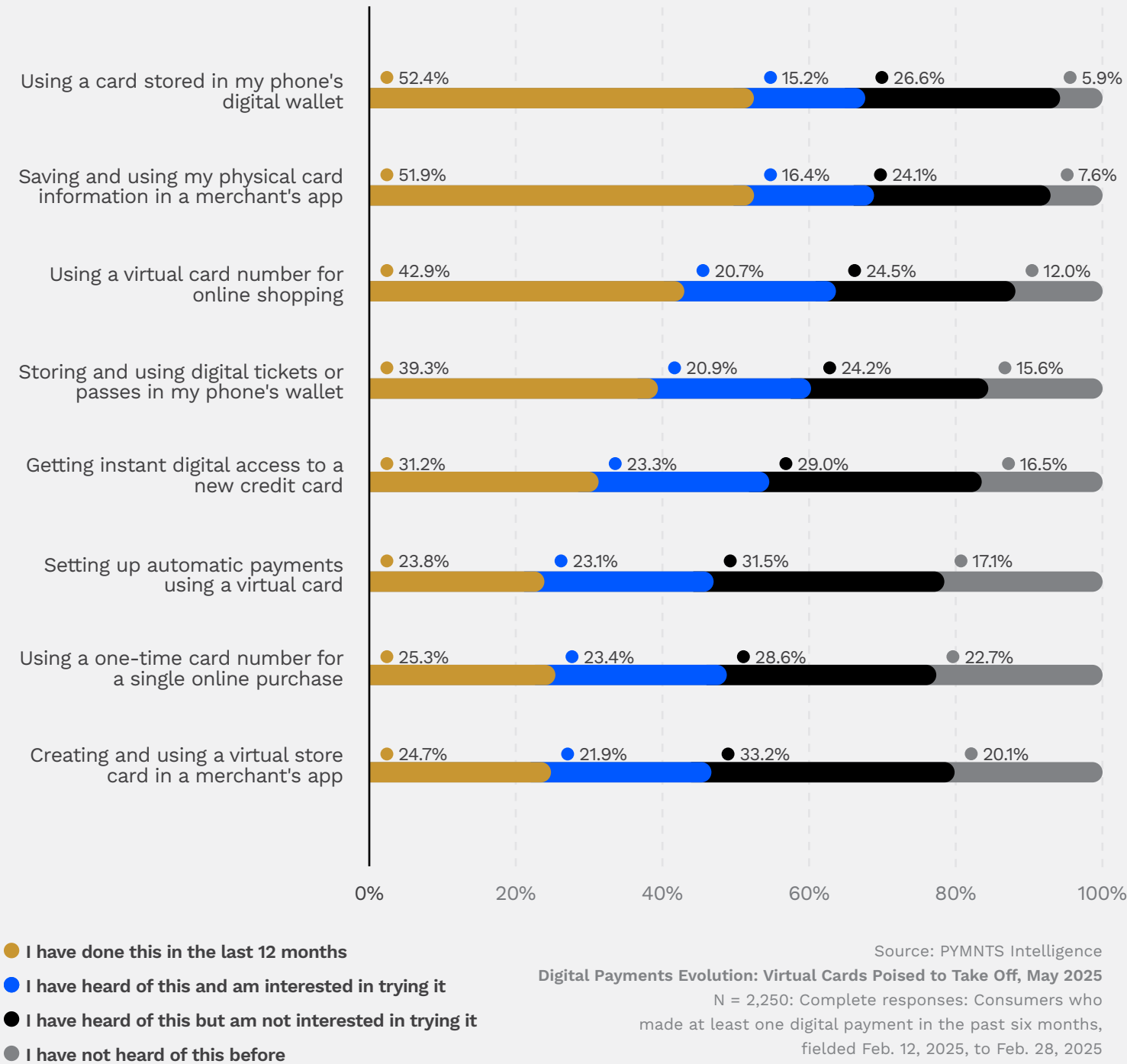
# Security Concerns Drive Virtual Card Interest

Consumers aren’t just experimenting—they’re using virtual cards in intentional ways that reflect their concerns about security and fraud. One in four have used a one-time card number for an online purchase. Twenty-eight percent have used virtual cards to set up automatic payments, and 25% have created store-specific virtual cards in merchants’ apps. Nearly 6 in 10, or 56%, have used a virtual card number that differs from their physical card. These behaviors reflect a growing awareness that virtual cards offer more than digital convenience—they also offer protection and control. While digital wallets are more widely used, consumers increasingly choose virtual card features when security matters most.

FIGURE 4

## Consumer use of virtual cards

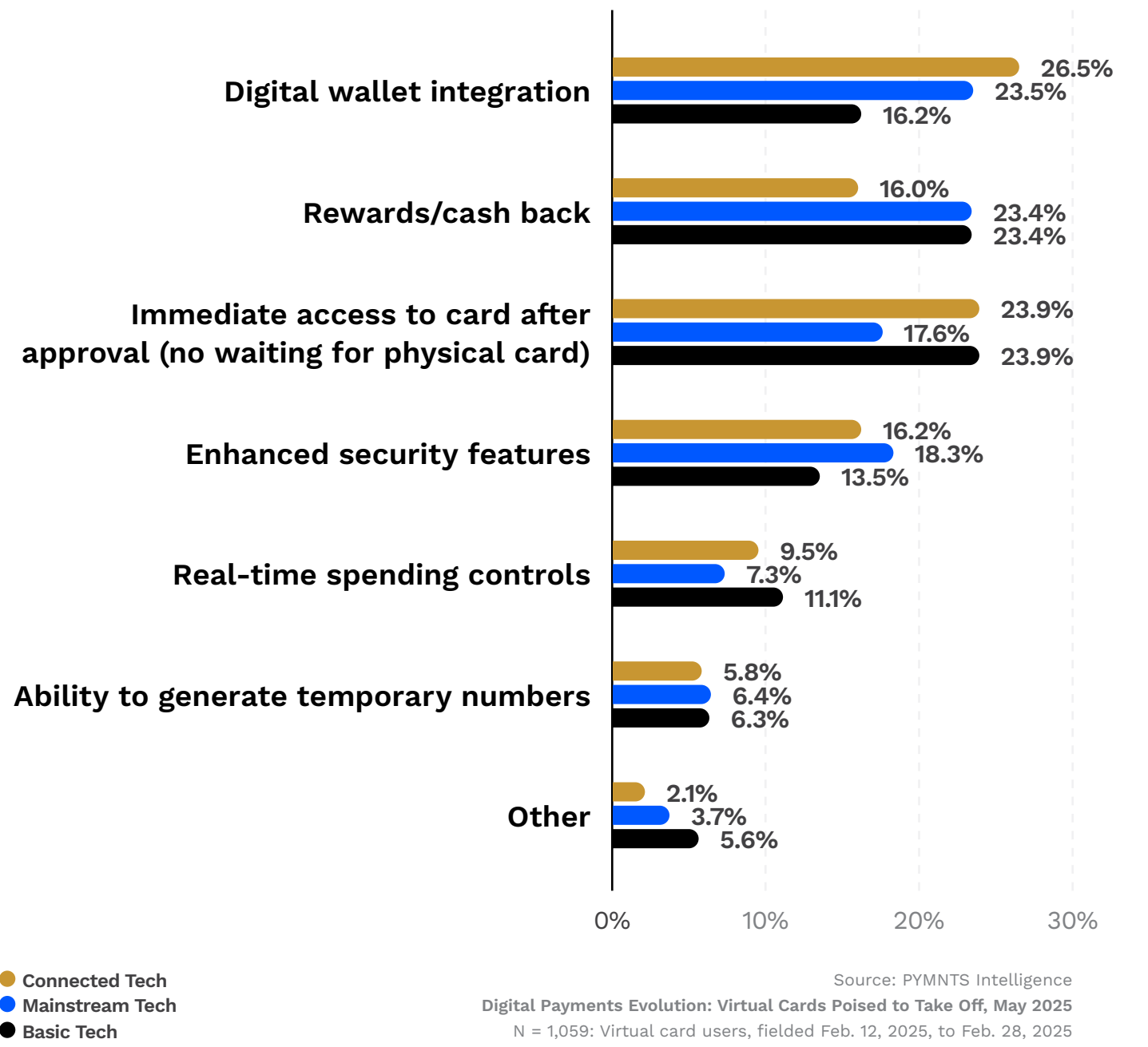
Share of consumers with experience and interest in select use cases



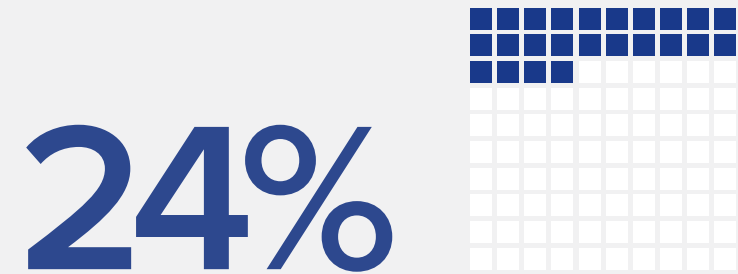
# Tech Savviness Influences Virtual Card Adoption

Tech-savvy consumers are leading virtual card adoption. Connected Tech users are twice as likely to use virtual cards as Basic Tech users. Digital Finance Enthusiasts—those who regularly use budgeting apps, online investing or mobile banking—also report high usage. Seven in 10 Enthusiasts have used virtual cards, compared to just one in 10 inactive digital finance users. These consumers value speed, control and seamless experiences. Integration with digital wallets plays a key role: More than one in four or 27%, of Connected Tech users say that this was their reason for using a virtual card. To meet expectations, providers must prioritize instant access, in-app usability and seamless digital integrations.

**FIGURE 5**  
**Push and pull dynamics of virtual card use**  
Factors that made consumers use a virtual card for any kind of payment within the last six months, by tech persona











Share of Engaged Digital Finance users **citing digital wallet integration as a factor behind their use of a virtual card** to make a payment in the last six months.

Mainstream and Basic Tech users remain key to scaling widespread adoption. These users tend to favor familiar benefits such as rewards and fraud protection. Nearly one in four cite rewards or cashback as their top reason for using virtual cards, aligning closely with their physical card habits. Meanwhile, only 22% of Basic Tech users have used one-time card numbers, compared to 50% of Connected Users. A dual-track strategy is needed: preserve familiar incentives for mainstream users while offering digital-first features to connected users. This approach ensures broad appeal and eases the transition for those still catching up with the digital revolution. Adoption also tracks closely with age: Younger users, especially Gen Z and millennials, report the highest virtual card usage rates across all personas, reinforcing the need to tailor digital-first features toward these age cohorts, even within Mainstream and Basic Tech segments.

**FIGURE 6**  
**Virtual cards vary in their appeal**  
Factors that made consumers use a virtual card for any kind of payment within the last six months, by digital financial engagement persona

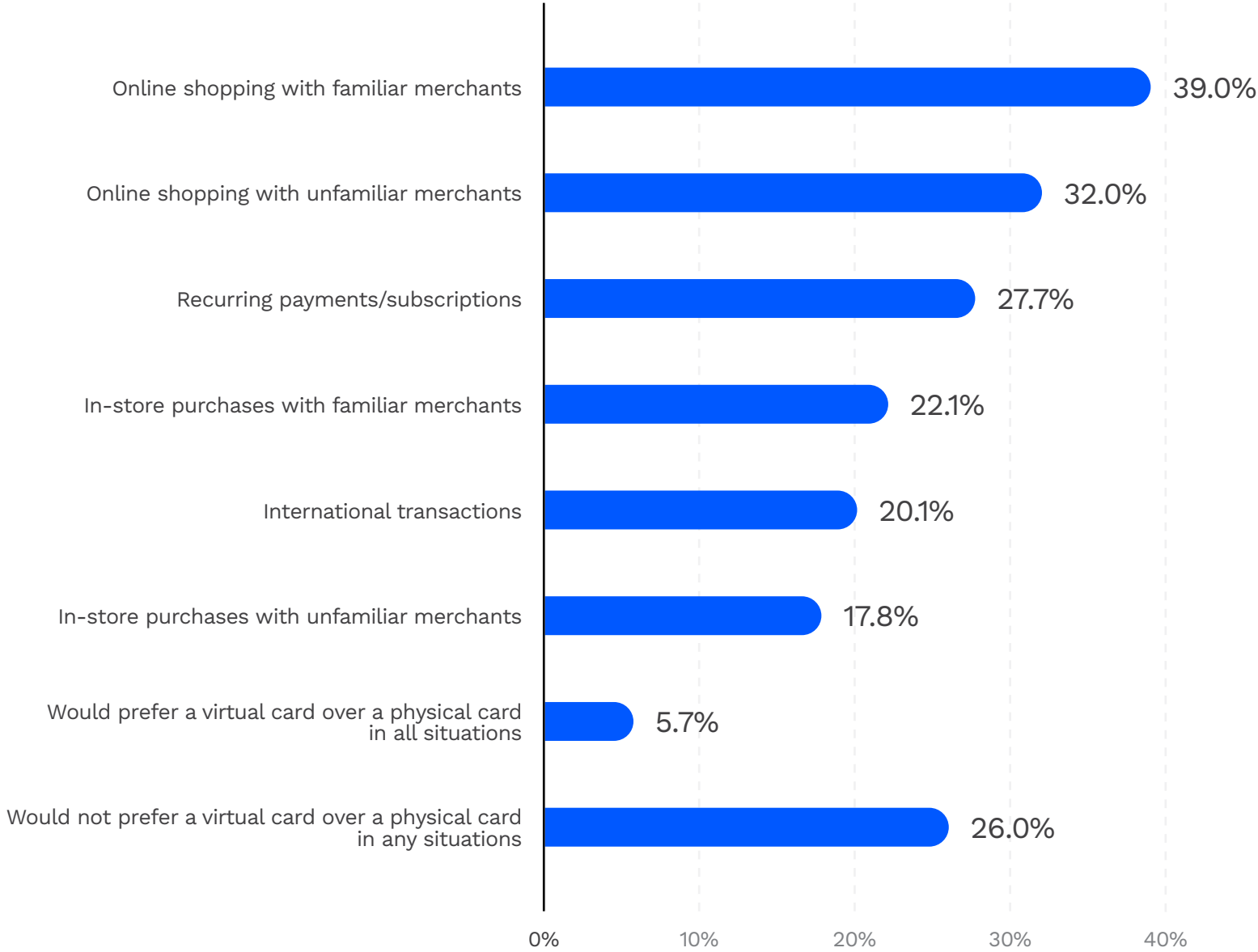
	 Enthusiast	 Engaged	 Explorer	 Inactive
Digital wallet integration	23.1%	24.1%	16.6%	5.7%
Rewards/cash back	21.2%	23.4%	20.6%	39.0%
Immediate access to card after approval (no waiting for physical card)	20.9%	19.0%	23.1%	17.2%
Enhanced security features	12.0%	16.3%	18.3%	18.1%
Real-time spending controls	14.9%	6.9%	9.9%	3.5%
Ability to generate temporary numbers	6.1%	6.6%	5.7%	6.4%
Other	1.8%	3.7%	5.8%	9.9%

Source: PYMNTS Intelligence  
Digital Payments Evolution: Virtual Cards Poised to Take Off, May 2025  
N = 1,059: Virtual card users, fielded Feb. 12, 2025, to Feb. 28, 2025

# Consumers Prefer Virtual Cards—When They Understand the Benefits

Most consumers are open to using virtual cards when the benefits are clear. Nearly three in four say they would prefer to use one in at least one payment scenario, most typically for online shopping at familiar merchants. Preference is high across income groups—78% among those earning more than \$100K and 69% among those earning less than \$50K. But the generational gap is striking: 95% of Gen Z prefer virtual cards in at least one payment situation, compared to just 48% of baby boomers. These differences suggest opportunity across the board—as long as providers can match their messaging to digital familiarity.

**FIGURE 7**  
**When virtual cards trump physical ones**  
Share of consumers stating the situations in which they would prefer to use a virtual card over a physical card



Source: PYMNTS Intelligence  
**Digital Payments Evolution: Virtual Cards Poised to Take Off, May 2025**  
N = 2,250: Complete responses: Consumers who made at least one digital payment in the past six months, fielded Feb. 12, 2025, to Feb. 28, 2025



# DATA FOCUS

**Consumer experiences of fraud accelerate the adoption of virtual payment methods, reshaping payment preferences.**

## Fraud Experiences Prompt Digital Payment Shift

Fraud changes consumer behavior. Among those who have experienced fraud or security issues, 36% say they are now more likely to use a virtual card. Half of this group used a virtual card to pay in the past six months—19% more than the overall population. These users actively seek tools that offer more control and reduce exposure to future risk. Virtual cards—with features like single-use numbers and card numbers distinct from physical cards—meet this need directly.

Yet not all consumers associate virtual cards with better security. Despite their benefits, many still link digital payments with risk. Financial institutions should treat fraud-driven worries as a conversion opportunity to educate consumers on how virtual cards minimize exposure, limit reuse and prevent account compromise. Framing virtual cards as a post-fraud recovery tool—rather than simply as a high-tech payment option—could shift perception and drive adoption among security-conscious consumers.

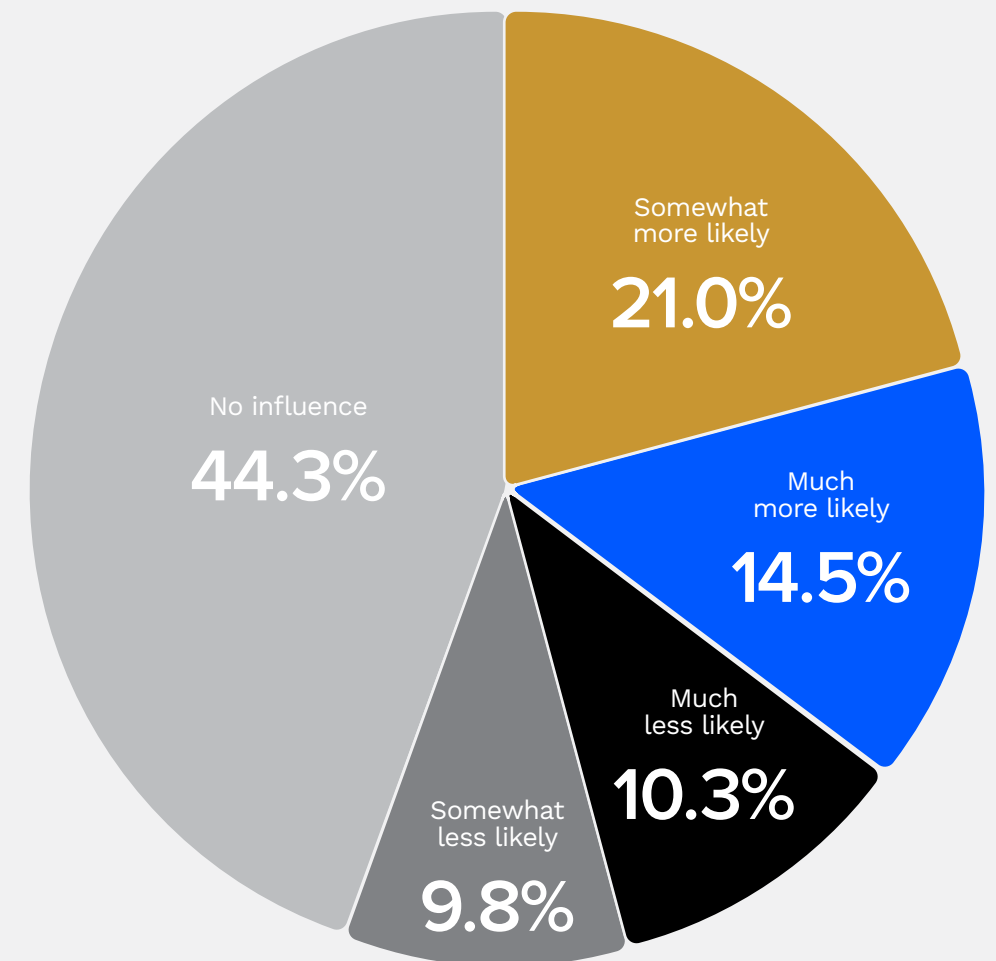
# 36%

of consumers who have experienced fraud or security issues **say they are now more likely to use a virtual card.**

**FIGURE 9**

**Fraud's impact on virtual card adoption**

The impact of experiences with fraud or security issues on the likelihood of using virtual cards within the past six months



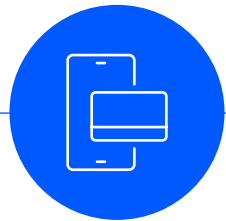
Source: PYMNTS Intelligence

**Digital Payments Evolution: Virtual Cards Poised to Take Off, May 2025**

N = 1,330: Consumers who experienced fraud, fielded Feb. 12, 2025, to Feb. 28, 2025



# ACTIONABLE INSIGHTS



## 01

Card issuers must recognize that virtual card usage is already mainstream. Forty-two percent of consumers used one within the last six months, and 65% say they're likely to do so within the next year. Online purchases and subscriptions are the top use cases. Providers should lead with these categories to drive uptake before expanding into less common, in-store scenarios.



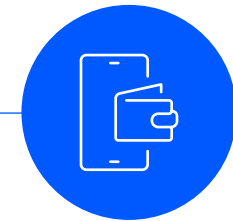
## 02

Fraud shifts preferences. Among consumers who have experienced fraud or security issues with traditional cards, 36% say they're now more likely to use a virtual card. Half of these consumers used one in the past six months—19% above average. Highlighting virtual cards' added security and fraud controls can convert these high-intent users and shift concern to sustained adoption.



## 03

Education can drive engagement. More than one in 10 consumers want help understanding how virtual cards work. Among Basic Tech users, 26% still resist adoption. Providers should offer simple, guided tutorials to demonstrate ease of use and highlight features such as temporary numbers, reward integration, and enhanced security—especially for consumer segments unfamiliar with advanced digital payment tools.



## 04

Issuers must realize that segment needs differ. Tech Savvy users prioritize digital wallet integration, while Mainstream and users value traditional card features such as rewards. Adoption may accelerate when messaging matches these preferences. Providers should emphasize innovation for Digital-First users and promote familiarity for more cautious ones, building broader appeal through a dual-track strategy.



# DIGITAL PAYMENTS EVOLUTION: VIRTUAL CARDS POISED TO TAKE OFF

May 2025 Report



PYMNTS  
INTELLIGENCE

elan<sup>®</sup>  
Credit Card

## METHODOLOGY

**D**igital Payments Evolution: Virtual Cards Poised to Take Off, a PYMNTS Intelligence and Elan collaboration, is based on a survey conducted from Feb. 12, 2025, to Feb. 28, 2025. The report examines consumer adoption and usage of virtual and digital cards, focusing on technology familiarity, payment preferences and security concerns. The survey gathered responses from 2,516 U.S. consumers who made at least one digital payment within the past six months. The sample was balanced based on U.S. census data, including demographics such as income, age and education. This report explores how consumers use virtual cards, what drives their preferences and how usage varies across personas.

### THE PYMNTS INTELLIGENCE TEAM THAT PRODUCED THIS REPORT:

John Gaffney  
Chief Content Officer

Mariah Warner, PhD  
Senior Research Manager

Lynnley Browning  
Managing Editor

Adam Putz  
Senior Writer

# ABOUT

---

## PYMNTS INTELLIGENCE

[PYMNTS Intelligence](#) is a leading global data and analytics platform that uses proprietary data and methods to provide actionable insights on what's now and what's next in payments, commerce and the digital economy. Its team of data scientists include leading economists, econometricians, survey experts, financial analysts and marketing scientists with deep experience in the application of data to the issues that define the future of the digital transformation of the global economy. This multi-lingual team has conducted original data collection and analysis in more than three dozen global markets for some of the world's leading publicly traded and privately held firms.



Elan Credit Card partners with financial institutions to grow their business through our turnkey credit card issuing solution, mortgage solutions, and all-in-one merchant processing platform, talech®. Our dedication to our partners, growth philosophy, and investment in technology has made us a leader in the industry since 1968. Learn more about our innovative solutions for consumer and business accounts of all sizes. For more information, visit [www.elanfinancialservices.com/credit-card](http://www.elanfinancialservices.com/credit-card).

Digital Payments Evolution: Virtual Cards Poised to Take Off may be updated periodically. While reasonable efforts are made to keep the content accurate and up to date, PYMNTS MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, REGARDING THE CORRECTNESS, ACCURACY, COMPLETENESS, ADEQUACY, OR RELIABILITY OF OR THE USE OF OR RESULTS THAT MAY BE GENERATED FROM THE USE OF THE INFORMATION OR THAT THE CONTENT WILL SATISFY YOUR REQUIREMENTS OR EXPECTATIONS. THE CONTENT IS PROVIDED “AS IS” AND ON AN “AS AVAILABLE” BASIS. YOU EXPRESSLY AGREE THAT YOUR USE OF THE CONTENT IS AT YOUR SOLE RISK. PYMNTS SHALL HAVE NO LIABILITY FOR ANY INTERRUPTIONS IN THE CONTENT THAT IS PROVIDED AND DISCLAIMS ALL WARRANTIES WITH REGARD TO THE CONTENT, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT AND TITLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF CERTAIN WARRANTIES, AND, IN SUCH CASES, THE STATED EXCLUSIONS DO NOT APPLY. PYMNTS RESERVES THE RIGHT AND SHOULD NOT BE LIABLE SHOULD IT EXERCISE ITS RIGHT TO MODIFY, INTERRUPT, OR DISCONTINUE THE AVAILABILITY OF THE CONTENT OR ANY COMPONENT OF IT WITH OR WITHOUT NOTICE.

PYMNTS SHALL NOT BE LIABLE FOR ANY DAMAGES WHATSOEVER, AND, IN PARTICULAR, SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, OR DAMAGES FOR LOST PROFITS, LOSS OF REVENUE, OR LOSS OF USE, ARISING OUT OF OR RELATED TO THE CONTENT, WHETHER SUCH DAMAGES ARISE IN CONTRACT, NEGLIGENCE, TORT, UNDER STATUTE, IN EQUITY, AT LAW, OR OTHERWISE, EVEN IF PYMNTS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

SOME JURISDICTIONS DO NOT ALLOW FOR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, AND IN SUCH CASES SOME OF THE ABOVE LIMITATIONS DO NOT APPLY. THE ABOVE DISCLAIMERS AND LIMITATIONS ARE PROVIDED BY PYMNTS AND ITS PARENTS, AFFILIATED AND RELATED COMPANIES, CONTRACTORS, AND SPONSORS, AND EACH OF ITS RESPECTIVE DIRECTORS, OFFICERS, MEMBERS, EMPLOYEES, AGENTS, CONTENT COMPONENT PROVIDERS, LICENSORS, AND ADVISERS.

Components of the content original to and the compilation produced by PYMNTS is the property of PYMNTS and cannot be reproduced without its prior written permission.

---

We are interested in your feedback on this report. If you have questions, comments or would like to subscribe, please email us at [feedback@pymnts.com](mailto:feedback@pymnts.com).