

Plug into

Paysafe:

Lost in Transaction:

The end of risk?

Will biometrics replace
passwords for online payment
authentication in 2019?

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Executive summary

Part one: Is biometrics the solution to convenience vs security for online payments?

The growth of mCommerce is already driving biometric authentication

48% of consumers have already authenticated a payment using some form of biometric authentication, rising to 54% in the UK. There is strong evidence to support the theory that this adoption is being driven by the growth of mobile commerce, and particularly by consumers under the age of 40.

The correlation between mCommerce and biometric identification is marked, with 18-24-year-olds (75% adoption of mCommerce; 69% adoption of biometrics) and 25-39-year-olds (79% adoption of mCommerce; 61% adoption of biometrics) being the greatest adopters in both areas.

Consumers think biometric authentication is more convenient, but are still unwilling to move away from passwords

When asked which authentication factor they felt most comfortable using, passwords were the most popular choice of consumers, ahead of biometrics and SMS code authentication. This choice was based on concerns about security, rather than convenience.

61% of consumers believe that using biometrics is a much quicker and more efficient way of paying for goods or services than traditional online payment methods, and 57% of consumers agree that being able to verify their payments using biometric technology will make shopping on their smartphone more convenient than traditional desktop eCommerce.

However, consumers are less aware of the security benefits of biometric authentication. Only 37% of consumers believe that biometrics are more secure than other verification methods and 66% of consumers said they would be worried if they were able to make purchases without being prompted for a password.

Part two: Voice-activated technology: the future of eCommerce?

Consumers have strong concerns about the security of their financial data, which is preventing adoption

53% of consumers believe that voice-activated payments are quicker and more convenient than traditional online payment methods, but only 37% feel comfortable that their financial details remained secure when making a payment via a Smart Home device.

Traditionally consumers in Germany and Austria are less prepared to accept risk when making payments online, and this is reflected in their willingness to make payments using voice-activated technology. Only 36% of German and Austrian consumers said they would use a Smart Home device to buy goods or service, whereas 50% of Bulgarian consumers said that they were comfortable making payments this way.

Consumers are more comfortable re-ordering low value items and buying entertainment services than making high value or one-off purchases


There is a clear distinction between consumer appetite for ordering and shopping. More consumers are prepared to order lunch (35%) or groceries (31%) from merchants that they shop with regularly, but fewer are prepared to make one-off purchases from stores they are less familiar with such as Christmas and birthday gifts (22%) or furniture (17%).

Consumers are also less willing to make high value purchases using voice-activated technology. Only 18% of consumers are currently prepared to book a holiday or pay for a flight using a Smart Home device.

33% of consumers will not consider using voice-activated technology for any type of payment.

Generation Z is more willing to use voice-activated technology to make payments than any other age demographic

When it comes to both Smart Home and Internet of Things enabled purchases, 18-24-year-olds appear much more willing to embrace voice-activated technology than older generations. More than half of consumers in this age bracket would sign up for a subscription service such as Netflix (52%) or make a one-off entertainment purchase (51%) using voice-activated technology, and 43% would be prepared to pay for groceries using voice command to their Smart Fridge. 39% of 18-24-year-olds would make payments using their voice through their car's entertainment system.



Is biometrics the solution to convenience vs security for online payments?

One of the key themes in previous editions of our *Lost in Transaction* research series is the often-competing priorities for payments of security and convenience. This is because businesses consider it essential that they offer the smoothest experience for customers at the checkout in order to combat abandoned transactions, but at the same time are more concerned about online fraud than ever before.

There is a good reason for this. Following the introduction of EMV protocol, card-not-present (CNP) fraud now accounts for the majority of card fraud globally; for example, in 2018 CNP fraud accounted for 76% of all card fraud losses in the UK, up from 61% in 2009. The value of UK issued cards CNP fraud totalled £506m in 2018, a 24% rise on the previous year.

A LexisNexis report stated that CNP fraud in the US had increased by 107% between 2014 and 2017, and was 81% more prevalent than card present (CP) fraud at the end of that period.

41% of small and medium online businesses we surveyed for *Lost in Transaction: The Future of Payments for SMBs* stated that abandoned sales at the checkout posed a significant problem for their business, and at the same time 55% agreed that online fraud is an increasing problem.

It was therefore of little surprise that 70% of online businesses said that they struggled to find a balance between improving security processes whilst also making the online customer journey as quick and easy as possible.

And it isn't only businesses that are faced with this dilemma; competing priorities were also reflected in our last consumer research report *Lost in Transaction: Payment Trends 2018*. For consumers, the ease of making a transaction has a significant influence on an overall eCommerce experience, and a poor customer journey or a cumbersome payment authentication process may prevent them from completing a sale; yet consumers still value the security of their transactions above anything else.

59% of consumers stated that they were uncomfortable with entering their financial details to make a payment and 74% said that they preferred to use a payment method that they had already signed up for than entering their financial details into an unknown website.




70% of online businesses struggle to find a balance between improving payment security and making the customer journey as quick and easy as possible.

(Source: *Lost in Transaction: The Future of Payments for SMBs, 2018*)

3D Secure 2.0: A new standard in payment authentication

So clearly a robust payment authentication process is imperative for both consumers and businesses. However, what is also clear is that the gap between customer expectations regarding the ease of using technology and the authentication process for making digital transactions has been widening for some considerable time. The evolution of eCommerce has developed at pace over the past two decades and authentication processes have not been able to keep up with innovation, meaning that today they are perceived as extremely outdated.

One of the major contributors to the perceived poor payments experience is 3D Secure 1.0, the EMVCo security standard that has been the authentication protocol for CNP payments since 1999.



3D Secure 1.0 has a poor reputation with much of the eCommerce community; it has been labelled the single greatest contributor to cart abandonment online due to the often labour-intensive payment authentication processes it mandates. This is particularly true for mCommerce, which was not a consideration when 3D Secure 1.0 was built but has rapidly become the preferred method of online shopping for many consumers today.

But from April 2019 the card schemes introduced new rules in Europe enforcing the adoption of 3D Secure 2.0, the new EMVCo security standard for compliance with the new Strong Customer Authentication (SCA) technical standards of the second Payment Services Directive (PSD2). Payment service providers are obliged to transfer all of their European partners to 3D Secure 2.0 by the SCA implementation deadline on September 14 2019, and the standard is expected to be rolled out beyond Europe in due course.

3D Secure 2.0 will make a visible difference for consumers when verifying payments. Firstly, it is predicted that as much as 95% of all transactions will not need to be manually authenticated due to the reduction in the volume of low risk and low value transactions needing to be verified, as well as a number of payment types either being exempt from or out of scope of the standard.

Secondly, the antiquated (and insecure) static password system of verification that is the primary source of consumer frustration when making a payment (and merchant frustration due to its role in driving up cart abandonment rates) will be replaced with authentication systems that are not only stronger but also are implemented with a better user experience in mind.

The new requirements introduce multi-factor authentication for both eCommerce and mCommerce. This means that, while passwords – a factor called “what you know” – are still acceptable, issuers can also implement other factors, such as “what you have” (for example a verification code sent via SMS) and “who you are” (fingerprints and other biometrics).

Implementing these last two factors facilitates the potential removal of passwords from authentication entirely, enhancing security while streamlining the payment process for consumers. This is an enormous benefit to merchants with mobile retail channels in particular; all consumers would need to do is scan their fingerprint on their own smart device to make a payment.

60000

For this report we surveyed 6,000 consumers from the UK, Canada, the US, Germany, Austria, and Bulgaria to assess current consumer attitudes to biometric payment authentication as a replacement to the passwords that they are familiar with.

Consumer appetite for biometrics

But while this shift to place biometrics at the heart of CNP payment verification may appear to be a win-win in the battle to provide secure and convenient payments, ultimately consumer appetite to leave password-based authentication behind and embrace biometrics will determine its speed of adoption and ultimate success.

mCommerce and biometrics are already proving to be a natural fit

48% of consumers have used biometric authentication to make some form of payment

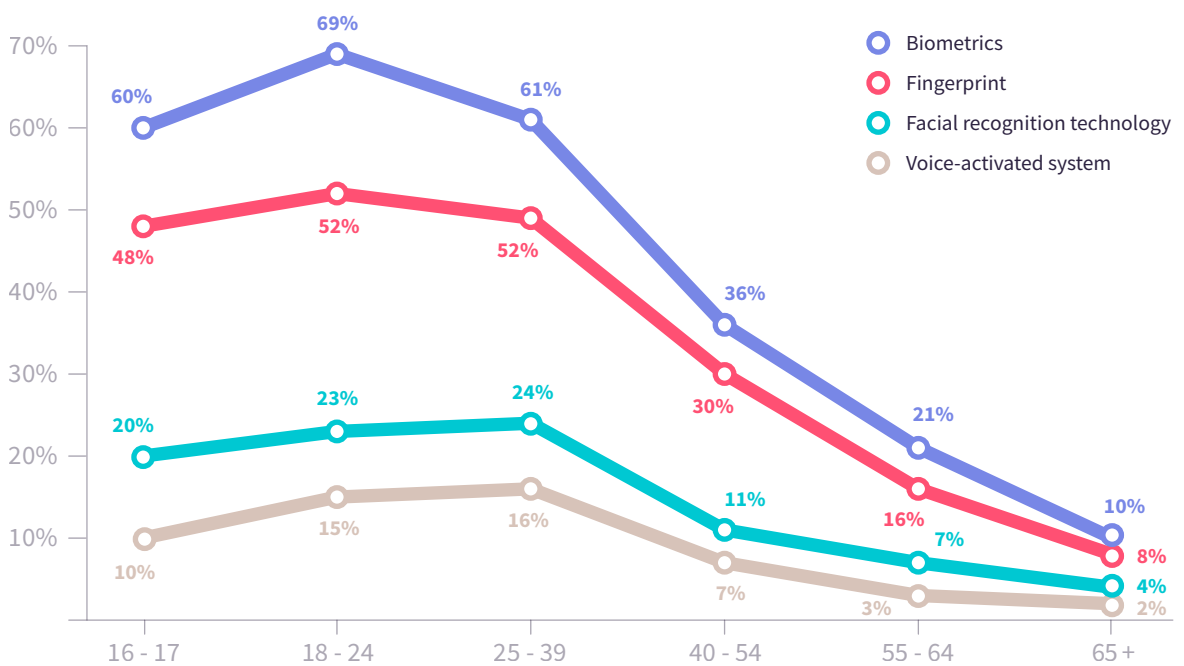
Consumers under 40 lead the way when it comes to adoption of biometric authentication, driven by their familiarity with using their smartphones to pay.

Although 3D Secure 2.0 is mandated for all eCommerce in Europe from September, the use of biometrics for payment authentication is already reasonably popular, especially with consumers under the age of 40. Overall, 48% of consumers have used biometric verification to make a payment online, with consumers in the UK (54%) leading the way in this area.

Perhaps unsurprisingly, the current adoption rate of online payments using biometrics is highest for 18-24-year-olds (69%). This demographic is comprised of mobile natives with the disposable income to conduct a reasonable amount of online shopping.

The adoption rate also exceeds 60% for consumers in the 25-39 age bracket (61%) and for 16-17-year-olds (60%), and then falls significantly for every age group over 40. Thirty six percent of 40-54-year-olds have used biometrics to verify online payments, falling further to 21% of 55-64-year-olds and finally 10% of over 65-year-olds.

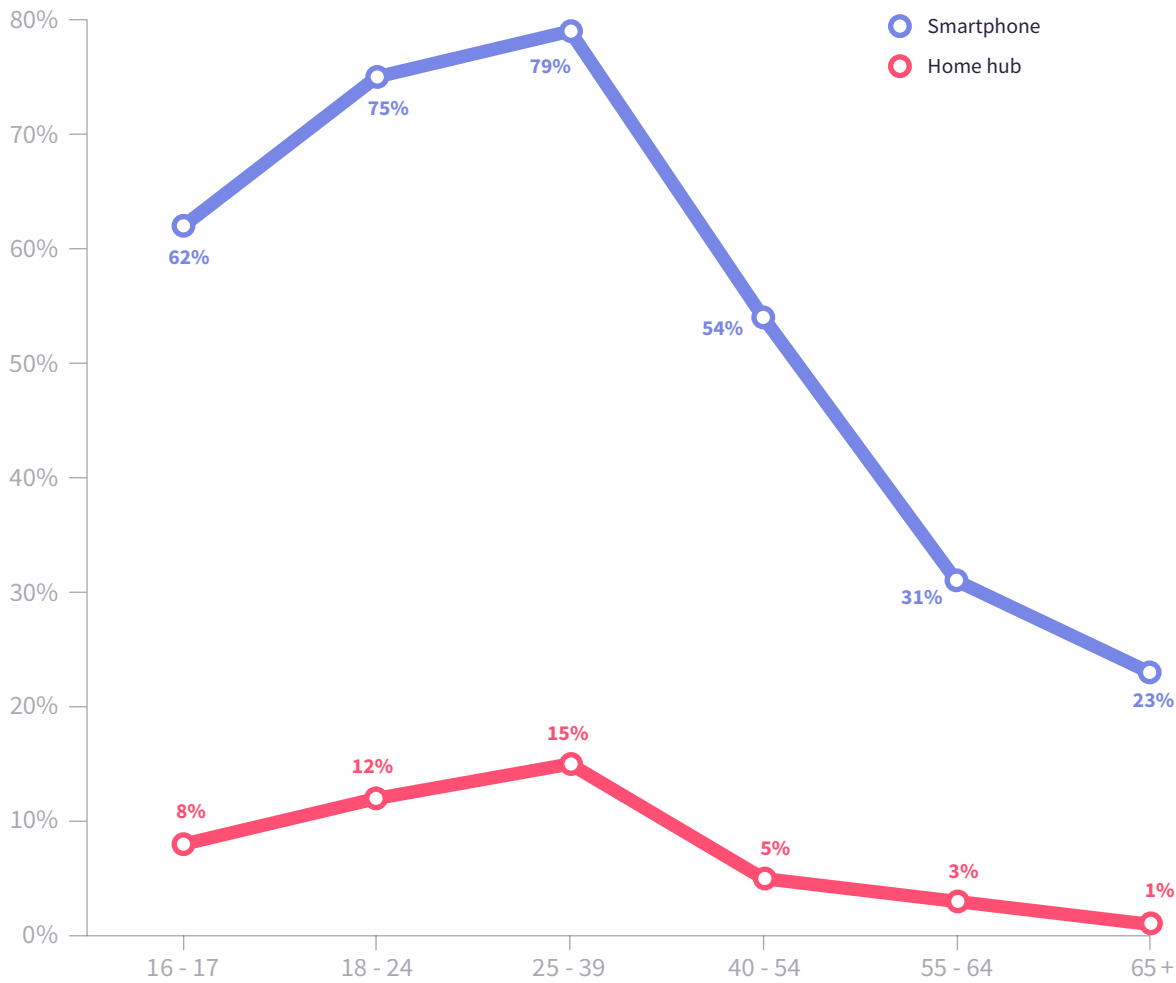
Question: Do you use any of the following to confirm your identity when you are purchasing goods and/or services online?



One interpretation of this data is that younger consumers are intrinsically more comfortable with the concept of sharing their biometric data and the validity of biometric authentication when making payments. However, what is more likely is that their stronger propensity to shop using their smart devices is exposing the benefits of biometric authentication to these groups.

This hypothesis is borne out by the correlation between use of biometrics for payment authentication and the percentage of consumers that shop using their smartphone. Three quarters of 18-24-year-olds (75%) and a higher percentage of 25-39-year-olds (79%) shop online using their smartphone, followed by 62% of 16-17-year-olds. This figure falls to 54% of 40-54-year-olds, 31% of 55-64-year-olds, and 23% of over 65s.

Question: What technology do you use to shop online?



In addition, when comparing different methods of biometric authentication, a consistent pattern emerges across every age group of consumers. Fingerprint technology is the most familiar method of biometric authentication (38%), followed by facial recognition technology (17%).

Adoption of voice-activated authentication (11%) is significantly lower than both fingerprint and facial recognition technology. This reflects the gap between the percentage of consumers that currently make online payments using a smartphone and the percentage that make payments on a Smart Home device.

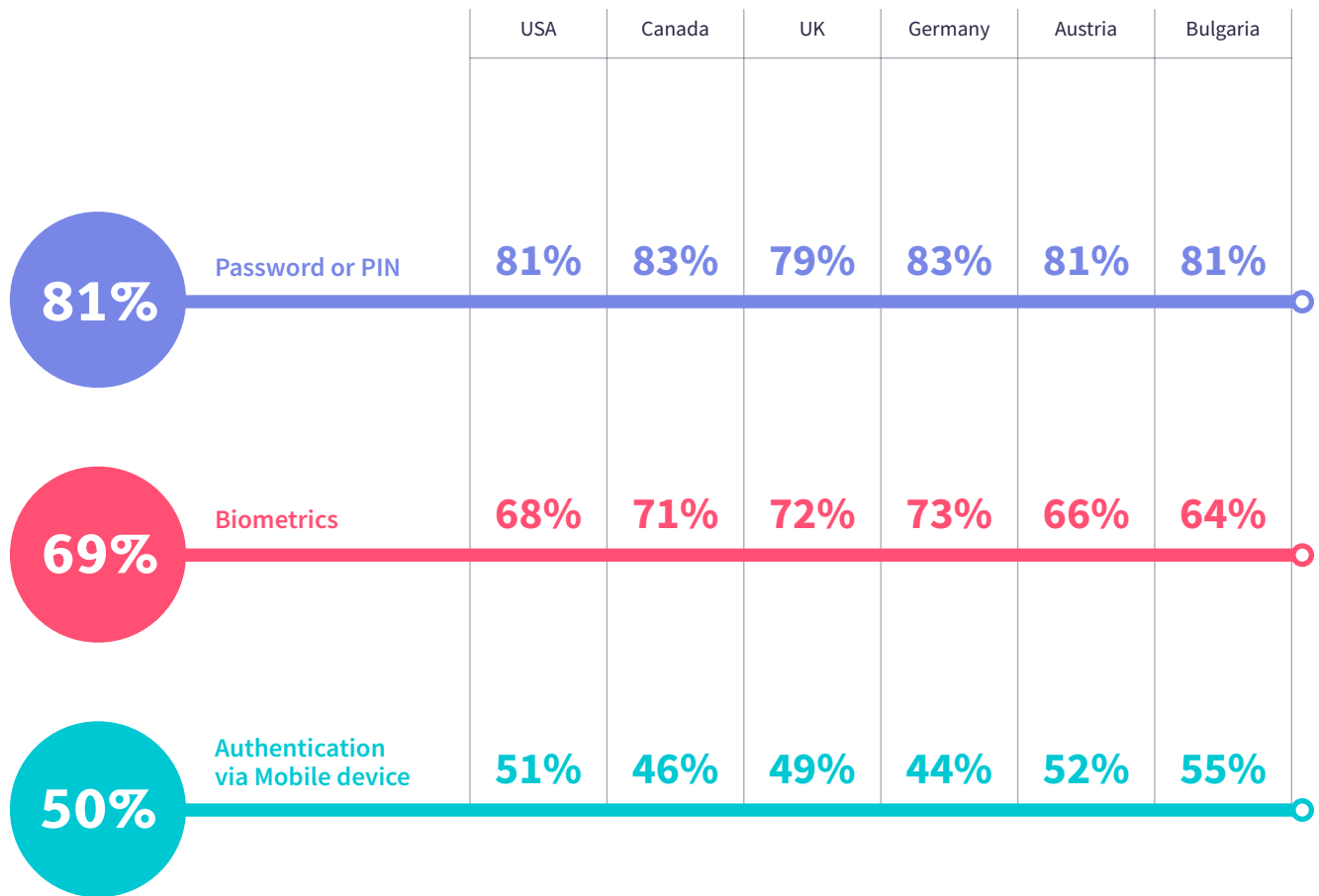
Biometrics as well as, but not instead of passwords

Consumers are yet to be convinced of the security benefits of replacing passwords with biometric authentication, and this may hinder adoption, even if they make payments more convenient.

The introduction of a two-of-three factor authentication process is intended to limit the need for passwords and promote more frictionless verification methods. However, our data suggests that establishing enough consumer trust to move away from a password-centric authentication will be a drawn-out process for payment services providers and online businesses. Passwords will remain the security preference of consumers in the short-to-medium term; biometrics will only serve as a supplementary layer to consumers' payments security habits.

When consumers were asked which two authentication factors they would feel most comfortable using when making a payment, a password (what you know) was the overwhelmingly the most popular choice with consumers from every country surveyed. Over four out of every five consumers (81%) remain most convinced by entering a password or pin. 69% selected biometrics (what you are) as a preferred authentication method, and 50% said that they felt comfortable confirming a payment via a mobile device message (what you have).

Question: A new regulation is being introduced to reduce fraud and make online payments more secure. Which TWO of these security measures would you feel most comfortable using?



This reluctance to move away from passwords isn't because consumers don't appreciate the convenience that biometrics brings to the checkout. 61% of consumers agreed that using biometrics is a much quicker and more efficient way of paying for goods or services, and 57% agreed that being able to verify a payment using biometric technology would make shopping on their smartphone more convenient than traditional desktop eCommerce. 65% agreed that automated payments would mean less time at the checkout which would make the shopping experience more enjoyable.



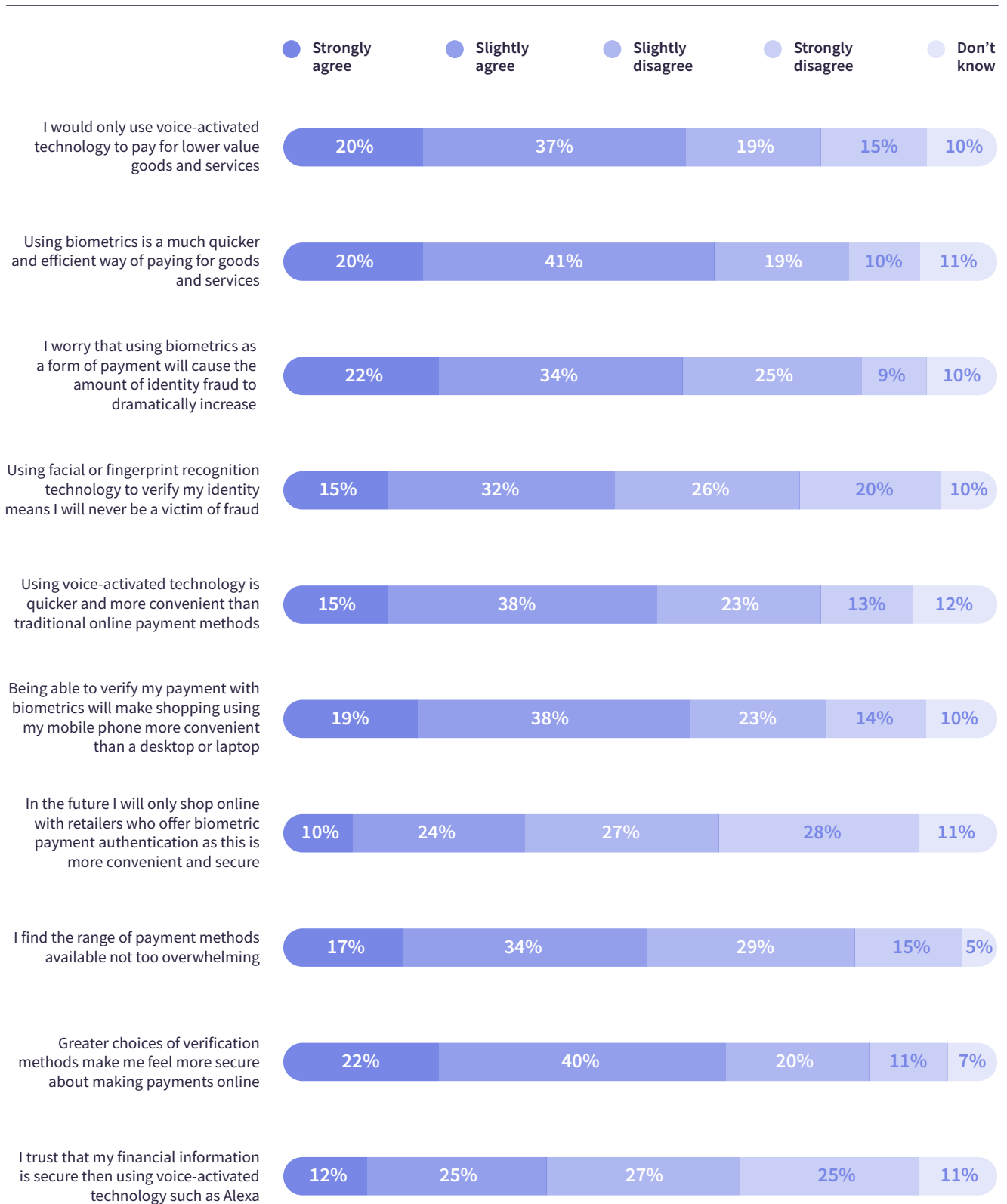
61%

of consumers agree that using biometrics is a much quicker and more efficient way of paying for goods or services than traditional online payment methods



57%

of consumers agree that being able to verify a payment using biometric technology will make shopping on their smartphone more convenient than traditional desktop eCommerce

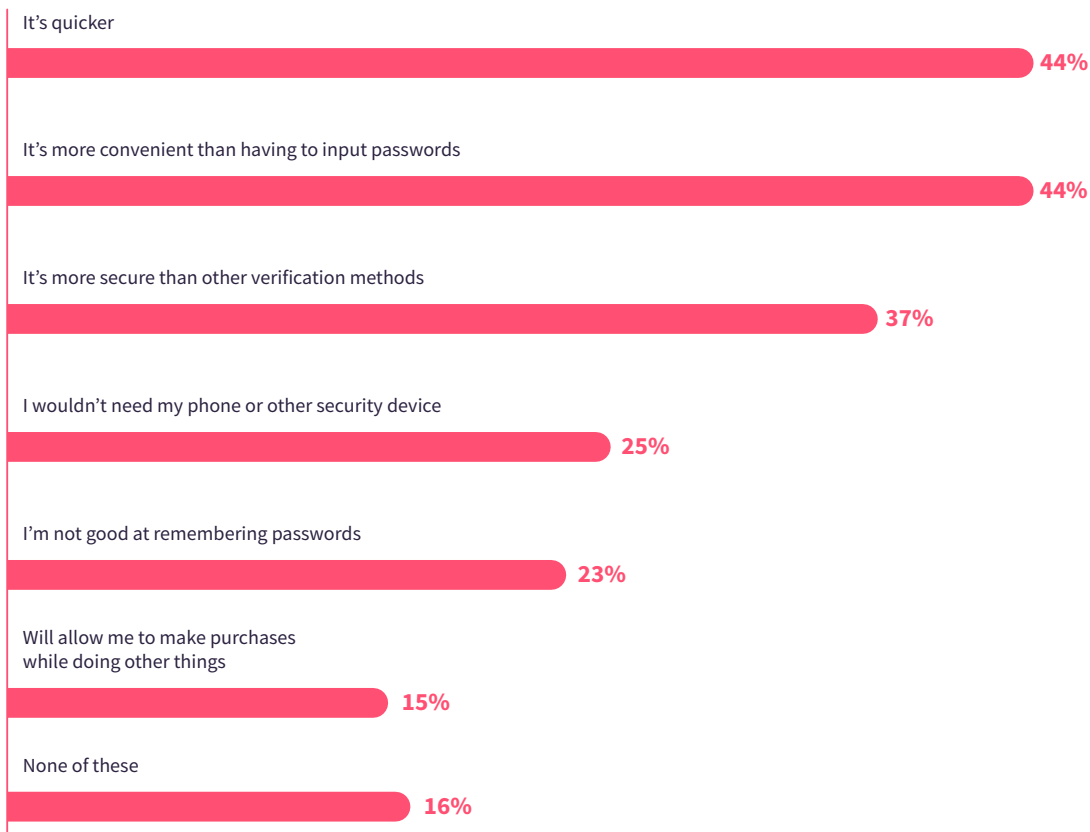


This sentiment was echoed when consumers were asked to identify the potential benefits of biometric payments. More consumers identified speed (44%) and convenience (44%) as a benefit for authenticating online payments.

And consumers do appreciate having more authentication options available to them. 62% of consumers agree that a greater choice of verification methods make them feel more secure about making a payment online.

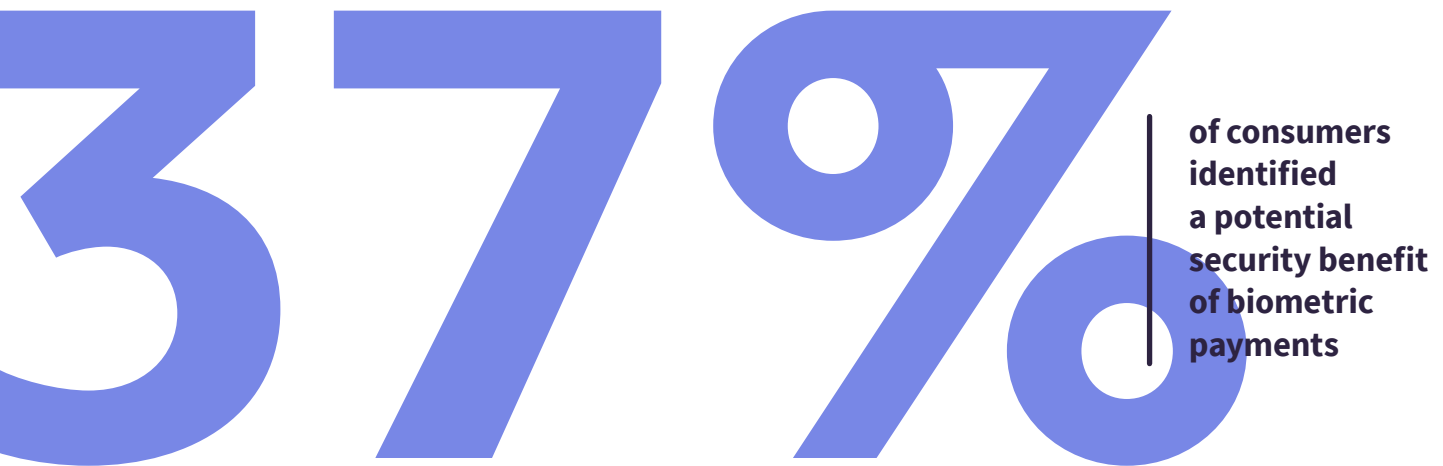
However, despite seemingly appreciating the convenience benefits of biometric payment authentication, consumers appear resilient in their refusal to abandon passwords, due to a perceived compromise in security.

Question: What do you see as the benefits of using biometrics to confirm payments for goods and services online?

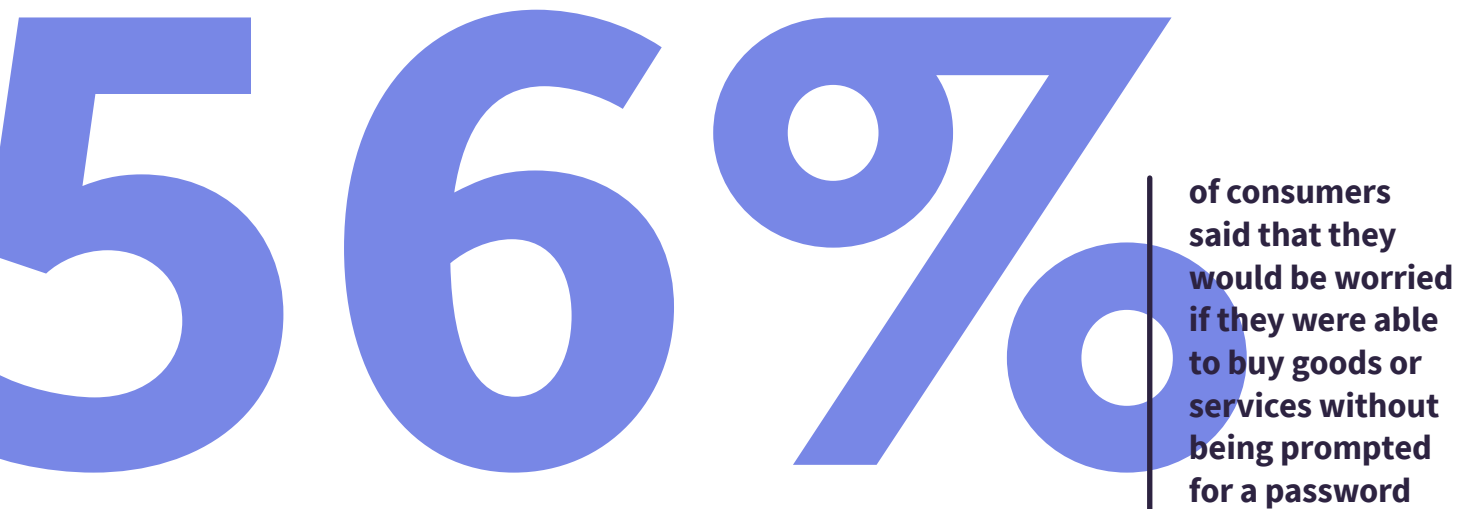


Two thirds (66%) of consumers said that they would be worried if they were able to buy goods or services without being prompted for a password. Only 37% of consumers identified a potential security benefit of biometric payments, and 56% said that using biometrics as a form of payment authentication would lead to a dramatic increase in identity fraud.

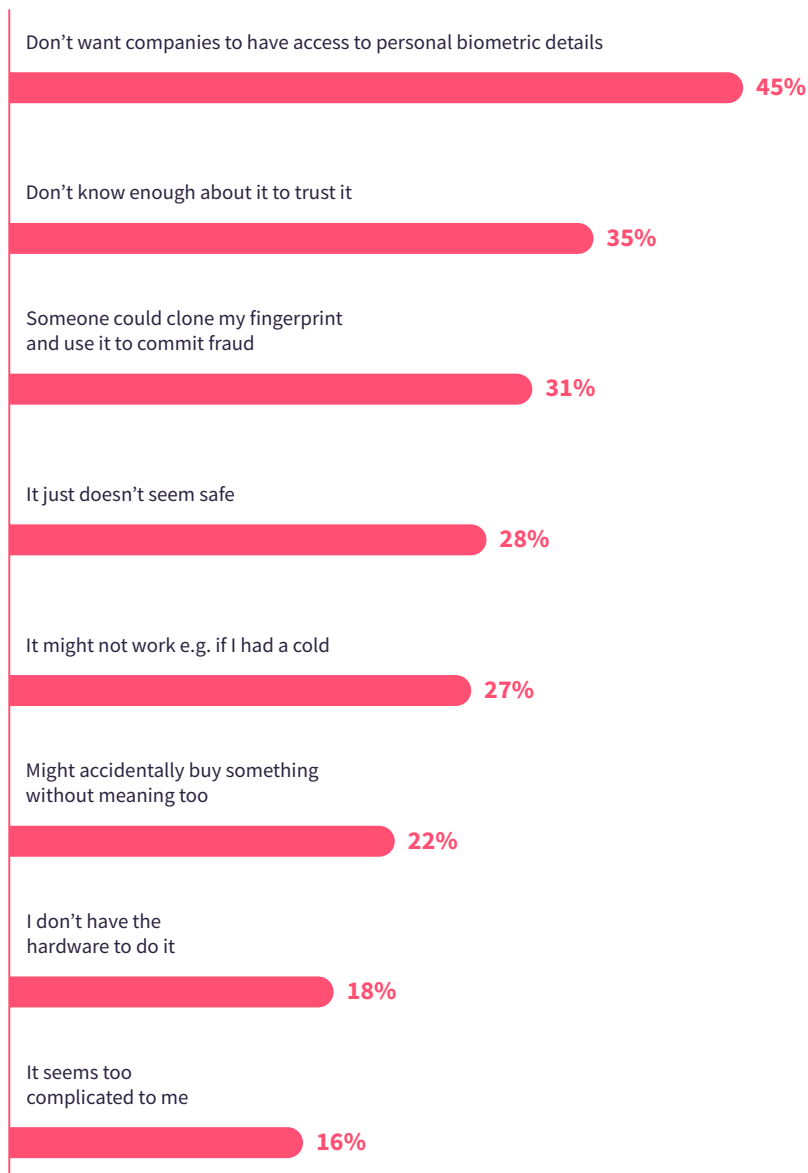
Consumers who stated that they wouldn't use biometrics for verifying payments, even in conjunction with passwords, confirmed this theory.



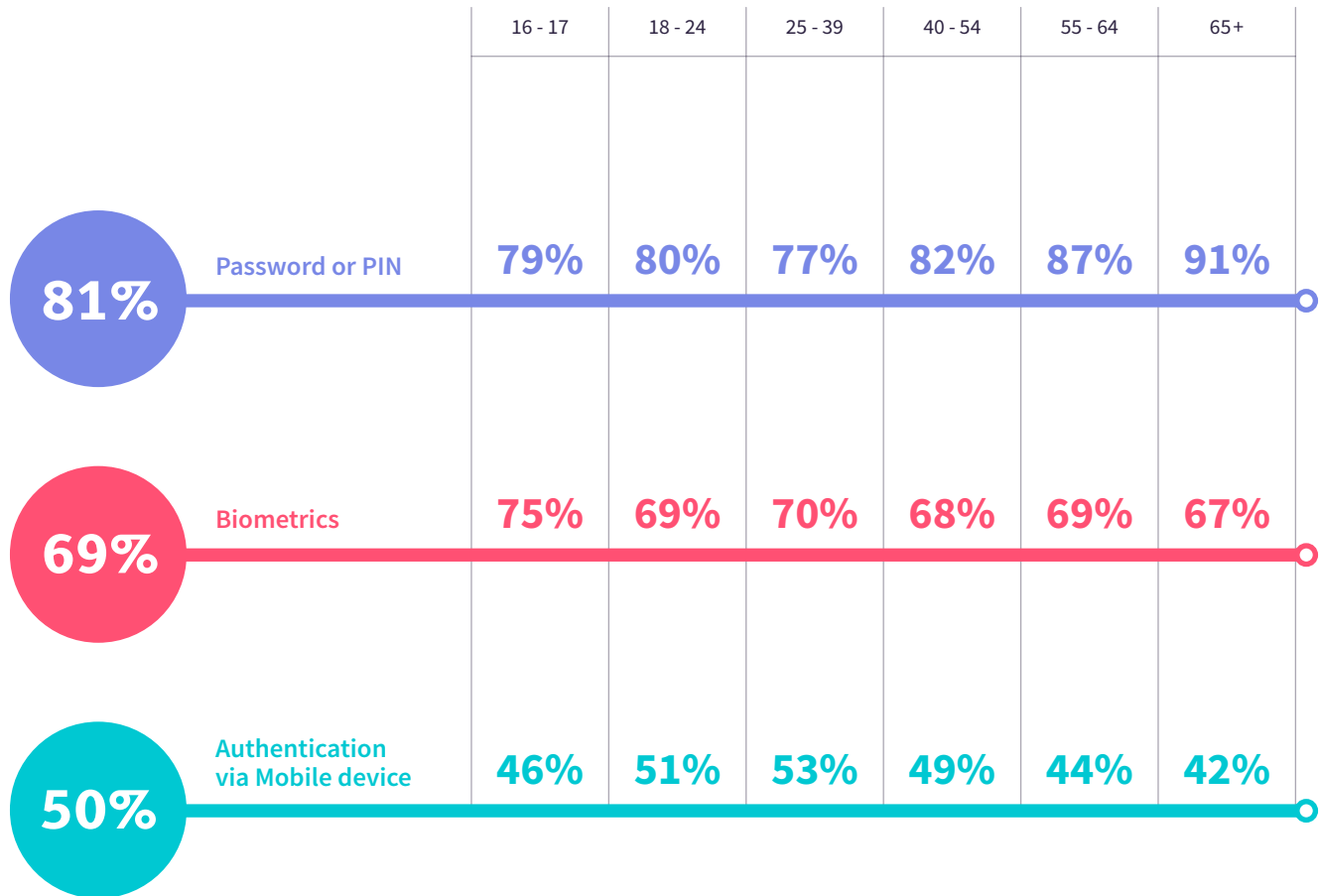
When asked why they would not feel comfortable using biometrics as a method of payment authentication, a lack of trust was identified as the primary reason consumers wished to avoid them. 45% of those consumers stated that they don't want companies having access to their personal biometric details, and 35% said that they didn't know enough about biometrics to trust them. 31% were concerned that their fingerprint could easily be cloned and used to commit fraud, and 28% said that it just didn't seem safe.



Question: Why would you not feel as comfortable using biometric data such as your voice or fingerprint to authorise payments for goods and services online?




Question: A new regulation is being introduced to reduce fraud and make online payments more secure. Which TWO of these security measures would you feel most comfortable using?



One significant difference the research revealed was in the attitudes towards passwords and biometric verification of different age demographics. The percentage of each demographic under the age of 40 that was in favour of entering passwords was 80% or under, with 25-39-year-olds (77%) being the lowest. In contrast, consumers aged 55-64 (87%) and over the age of 65 (91%) were overwhelmingly those most in favour of password authentication.

There was also greater preference of biometric authentication by younger generations, led by 16-17-year-olds (75%). Only 63% of 16-17-year-olds said that being able to make a payment for goods or services without being prompted for a password would concern them, compared to 71% of consumers over the age of over 65s.

For payments service providers and online businesses, particularly those that have a mobile first strategy or are planning to do so, overcoming this hurdle is critical to providing the optimum customer journey at the checkout.



Adoption of biometric verification will accelerate as consumers become more familiar with the technology, but this research strongly suggests that consumers are not ready to put their trust in them entirely at this point. Despite the friction passwords generate in the payments process they still appear engrained in the minds of consumers as the most effective means of keeping their financial details secure; removing passwords from the authentication process for the purpose of providing a better experience isn't a trade-off that they are prepared to make yet. They also are also sceptical about sharing their personal biometric details for fear this data could be illegally shared or copied.

Consumers have been conditioned by hearing for decades that passwords are the most reliable way of keeping their financial data safe; unlearning that mantra is going to take time, especially for consumers that have been making online payments using passwords for 20 years or more. Initially, therefore, it is not beyond the realms of possibility that cart abandonment will increase if passwords are removed entirely from payment authentication, despite the consumer experience being improved.

As 3D Secure 2.0 continues to be rolled out throughout 2019 and beyond, the increased familiarity consumers will have with verifying their mCommerce payments using fingerprint and facial recognition technology will no doubt shift the perception that biometrics don't offer the same protection as passwords. But the speed of adoption may be dependent on educating consumers about the security benefits of biometric technology, as there is currently a distinct lack of appreciation. Until this is achieved biometrics only ever be considered a supplementary authentication layer to passwords, rather than their replacement.



Voice-activated technology: the future of eCommerce?

A second area where biometrics is beginning to influence online payments is voice-activated technology.

100 million users worldwide now have some form of voice-activated Smart Home technology such as Google Home or Amazon Alexa, meaning that consumers are adopting the hardware that will enable them to shop online, pay bills, and make person-to-person transactions using voice command alone.

Also now available in the market is Internet of Things (IoT) enabled technology such as smart televisions and fridges, which have the potential to push this trend even further.

But with these technologies still new to consumers, and as password authentication is still very much the central pillar to financial data security for the majority of consumers, current appetite for these new methods of online commerce are debatable.

Consumers were asked whether they do already feel comfortable using this technology to make payments online, and if so which types of goods and services are they happy to purchase this way. We also asked which smart devices consumers felt most comfortable using to make online purchases.

An issue of trust, particularly in Germany and Austria

Despite acknowledging the experience benefits of voice-activated payments, the overwhelming majority of consumers don't believe their financial data remains secure.

As with fingerprint and facial recognition technology, trust will play a huge role in consumer attitudes to voice-activated payments. If consumers don't believe that their financial details are protected, then they will avoid this method of commerce, regardless of any convenience benefits.

This issue appears to be a factor in the adoption of voice-activated technology. 53% of consumers said that using voice-activated technology to pay for goods or services was quicker and more convenient than using traditional online payment methods, but only 37% said that they felt comfortable that their financial data remained secure when making a payment through a Smart Home device such as Google Home or Amazon Alexa. This factor had a significant impact when consumers were asked the likelihood that they would make payments using voice-activated technology.

of consumers
believed voice-
activated payments
were quicker and
more convenient than
traditional online
payment methods

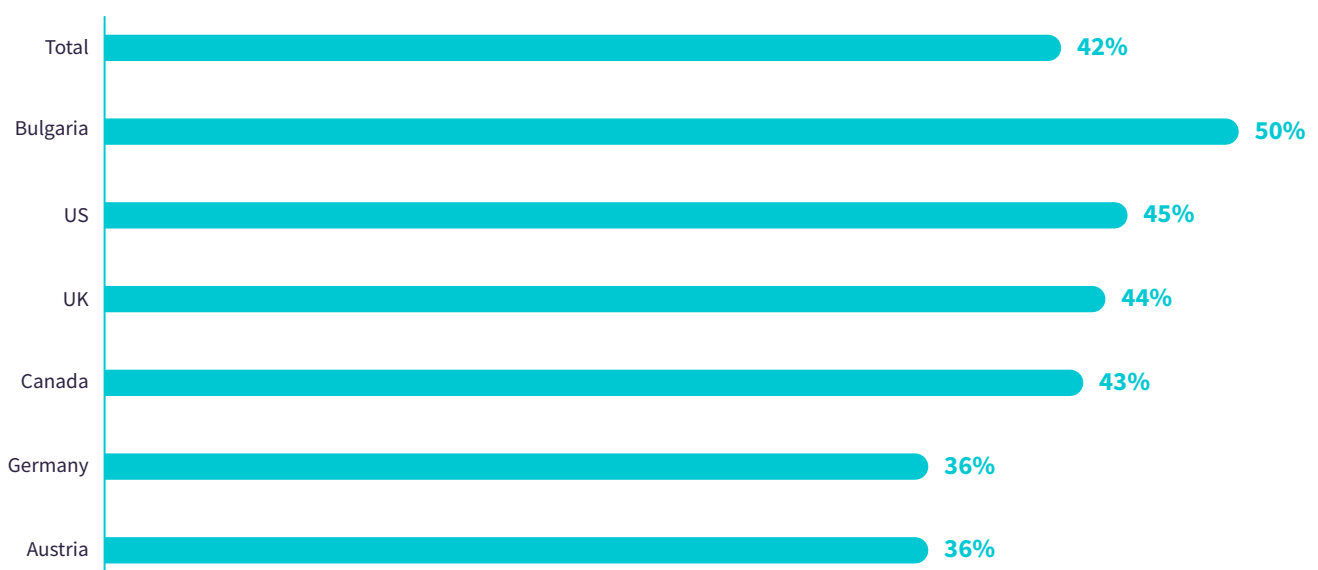
53%

vs 37%

that believed their
financial data
remained secure

How this lack of trust affects consumers' willingness to use voice-activated technology to make payments is also evident when comparing consumers in different countries. *Lost in Transaction: Payment Trends 2018* revealed that fewer consumers in Germany (28%) and Austria (26%) were prepared to accept any risk when making a payment online than consumers in the UK (65%), US (70%), and Canada (64%). This factor impacts the willingness to make payments using a Smart Home device; fewer consumers in Germany (36%) and Austria (36%) have the desire to do this. Consumers in Bulgaria appear most likely to embrace voice-activated payments (50%), followed by the US (44%), UK (43%), and Canada (42%).

Question: How comfortable do you or would you feel using your voice for the purchase of goods or services via voice activated systems such as a Smart Home?



A distinction between ordering and shopping

A clear divide is present when it comes to making payments using voice-activated technology – consumers are in favour of repeated, low-value payments, but not high value, one-off purchases.

A clear pattern emerged when consumers were asked about which types of goods or services they would be comfortable paying for using a voice-activated payments system. Consumers are more content with ordering or re-ordering familiar goods or services, but less prepared to make one-off payments that require comparing goods or suppliers.

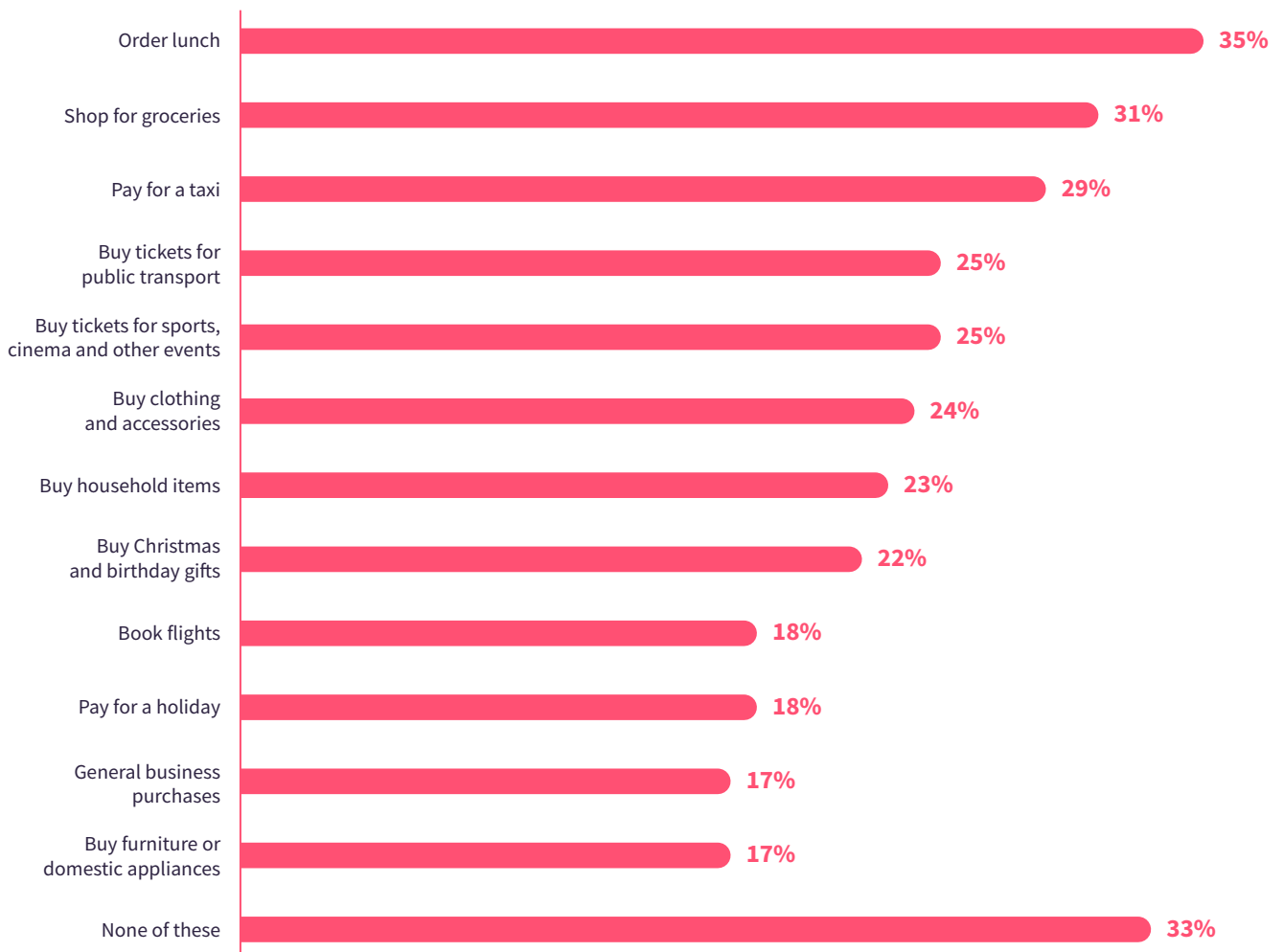
Consumers are most comfortable ordering lunch (35%) and shopping for groceries (31%), ordering a taxi service (29%), and purchasing tickets for transport (25%) or entertainment events (25%). Where a greater degree of selection is required, such as purchasing a birthday or Christmas gift (22%) or buying furniture or home appliances (17%) the appetite for using a voice-activated smart system is much lower.

One reason for this could be that where a 'shopping experience' is required to select the appropriate items using a separate device or a mobile app or browser, the convenience benefit of making the purchase using voice-activated technology is lost.

Another reason may be that consumers feel more secure making voice-activated purchases from trusted suppliers that they shop with regularly, but less confident making single purchases from less familiar suppliers.

A second trend that emerges is that consumers are more comfortable making purchases of lower value. In addition to feeling uncomfortable making payments for furniture using voice recognition technology, consumers are also wary of purchasing other high-value items such as flights (18%), and vacations (18%). Business supplies purchases (17%) were also rejected by most survey respondents.

Question: For which of the following would you be happy to use voice recognition (i.e. no password) to authorise a payment, whether this is on your smartphone or Smart Home device?



Question: Looking at the following examples below, how comfortable do you or would you feel using your voice for the purchase and payment for goods and services via voice-activated systems such a Smart Home?

● Strongly agree
 ● Slightly agree
 ● Slightly disagree
 ● Strongly disagree
 ● Don't know

Sign up for a subscription e.g. Netflix



Make a payment for an entertainment service e.g. a movie



Make a recurring payment e.g. a monthly bill



Make a one-off online purchase or transfer



Order and make payments for groceries with your voice via a smart fridge



Order and make payments with your voice via your car's entertainment system

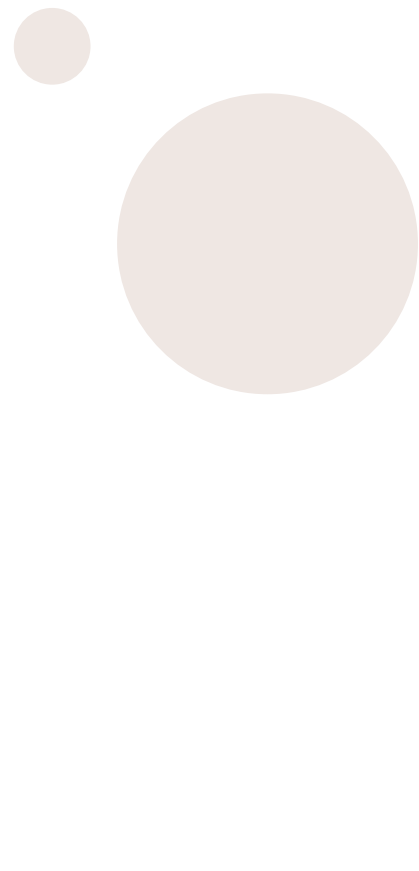


33% of consumers stated that they would not be comfortable making voice-activated payments that didn't include inputting a password for any type of purchase. Again, consumers in Germany were the most reluctant to make payments in this manner, with 40% stating that they would not make any type of payment using this method. Consumers in Bulgaria had the strongest appetite to make payments using voice-activated technology, with only 20% stating that they would not be comfortable making payments for any type of goods or services.

When considering potential smart devices to make a purchase, polarised results tell a similar story. Consumers are most comfortable with the concept of paying for entertainment through their television or Smart Home, either via a subscription service (45%) or a one-time purchase (47%).

But other Internet of Things-enabled objects are less popular. Only 39% of consumers would feel comfortable ordering and paying for groceries via a smart fridge (in *Lost in Transaction: Payment Trends 2018* 33% of consumers said that they would be comfortable allowing their fridge to automatically re-order products for them that were running low). Even fewer consumers (34%) feel comfortable making voice-activated payments through an IoT system located in their vehicle.

So while IoT-enabled devices may play a pivotal role in the payment ecosystem of the future, there is still work to do to get consumer buy-in for making payments via platforms located in household items.



Gen Z: a vision of the future of voice-activated payments?

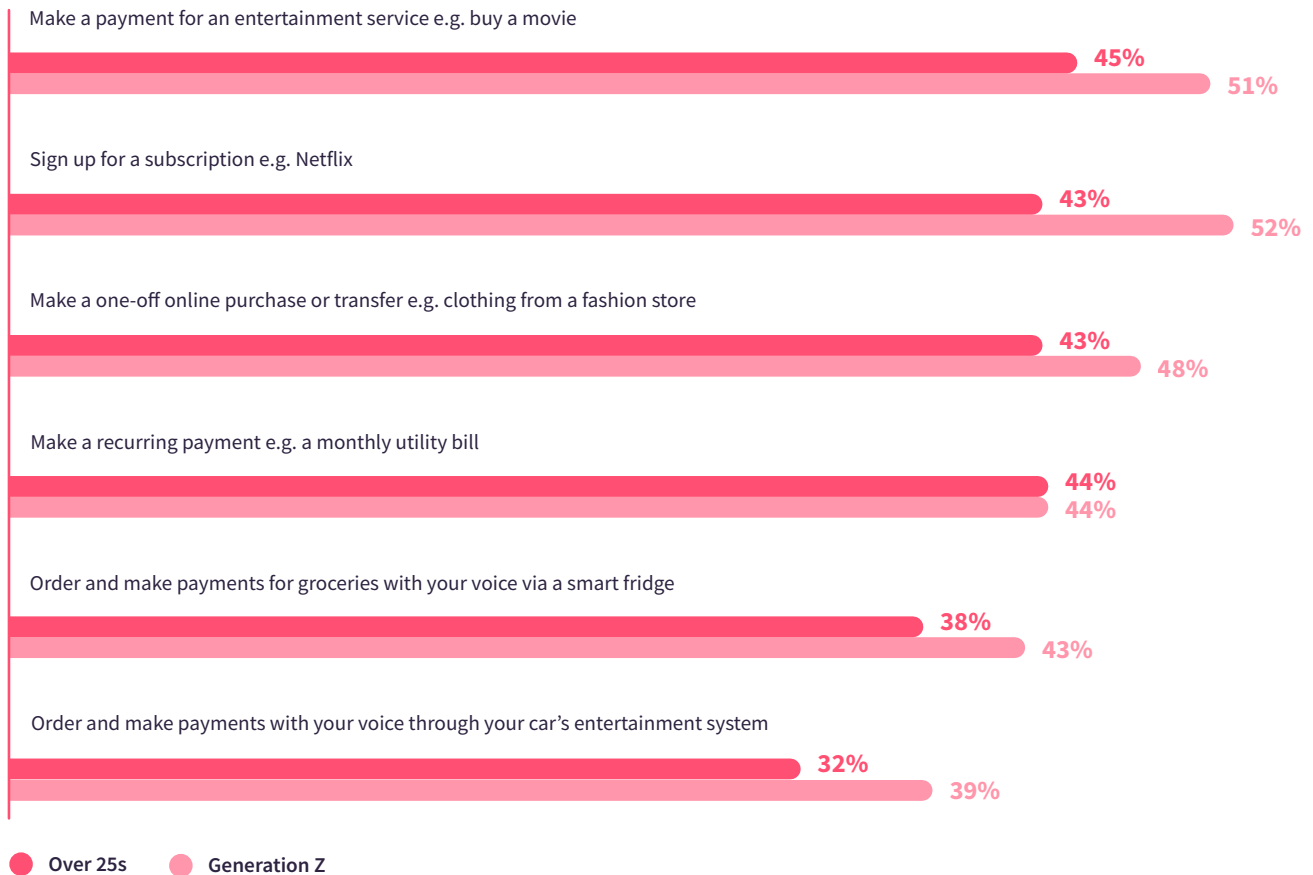
One group of consumers that appears more comfortable with using voice-activated technology is Generation Z. Consumers aged 16-24 are more likely to pay using their voice-activated Smart Home device for a variety of goods and services.

Although consumer appetite for voice-activated payments may not indicate widespread adoption of Smart Home or IoT-enabled commerce in the near term, one indicator that paints a more positive future is the attitude of Generation Z.

As with consumers generally, Generation Z consumers feel most comfortable making voice-activated payments for television entertainment, either via a subscription service (52%) or a one-off purchase (51%).

They also feel more comfortable with the concept of making one-off purchases or money transfers (48%), buying groceries using a smart fridge (43%), and making payments using their vehicle as an eCommerce platform (39%) than the survey average.

Question: Looking at the following examples below, how comfortable do you or would you feel using your voice for the purchase and payment for goods and services via voice activated systems such a Smart Home?



This complements previous findings in this report that Generation Z consumers are less dependent on password authentication in order to feel secure when it comes to their financial data. For these consumers, greater trust in biometric authentication means that they are more open to the frictionless benefits of password-free eCommerce on devices such as Smart Homes, smart fridges, and IoT enabled vehicles.

Conclusion

The evolution of the payments industry is driven by three key factors; technological innovation, regulation, and consumer appetite. In the case of biometric payment authentication replacing passwords, the technology and regulation is in place to usher in a new era for card-not-present transactions.

And so, the adoption of biometric authentication, both fingerprint and facial recognition on mCommerce platforms and voice recognition verification for Smart Home purchases, is dependent on consumers buying into this as not only a more convenient, but also a more secure method of transacting.

The first of these messages has filtered through, but online businesses and payment service providers have more work to do when it comes to educating consumers on the security benefits of biometric verification before they will be prepared to relinquish their dependence on password authentication.

Younger generations that are more familiar and comfortable with technology such as fingerprint recognition are ahead of the curve in this regard; consumers that have spent two decades being told that a password is the vital component keeping their financial details secure online need to be convinced why the situation has changed.

The payments ecosystem is trending towards more frictionless payments generally, for both online and in-person transactions, but this research provides further indication that consumers will not compromise the security of their financial data to do so. As new fintechs and technology giants from outside of the traditional banking and payments sector begin to enter this space, this is the critical factor to bear in mind. Adoption of innovative technology is dependent on winning the argument over financial safety.



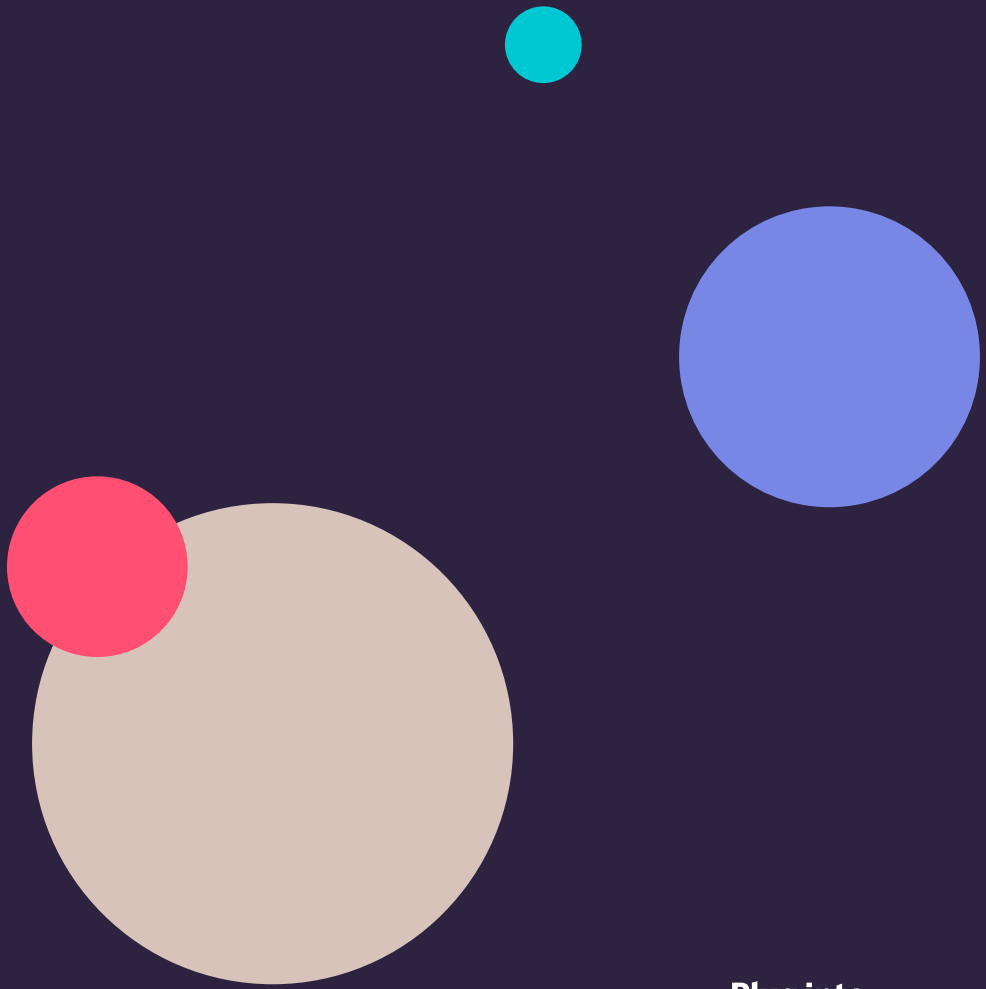
About our survey

This research was conducted by Loudhouse, a London based research agency, in April 2019 in the following regions: USA, Canada, UK, Germany, Austria, and Bulgaria. The aim of this research was to understand how consumers shop and pay for goods and services online, and to also understand their views on new and evolving payment trends. In total, 6197 online interviews were conducted and these were weighted in order to make the findings both nationally and demographically representative.

About Paysafe Group

Paysafe Group (Paysafe) is a leading global provider of end-to-end payment solutions. Its core purpose is to enable businesses and consumers to connect and transact seamlessly through industry-leading capabilities in payment processing, digital wallet, card issuing and online cash solutions. With over 20 years of online payment experience, an annualized transactional volume of over US \$80 billion, and approximately 3,000 employees located in 12+ global locations, Paysafe connects businesses and consumers across 200 payment types in over 40 currencies around the world. Delivered through an integrated platform, Paysafe solutions are geared toward mobile-initiated transactions, real-time analytics and the convergence between brick-and-mortar and online payments.

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