



Study on Digital Wallet Features

March 2023



Photo by Nathan Dumlao on Unsplash

Table of Contents

Executive summary	4
Objectives, scope and methodology	9
Research objectives	9
Methodology, selected target groups and geographical scope	10
Analysed digital wallet features	12
Target groups: perception, understanding and use of digital wallets	17
General population	17
Tech-savvy	20
Merchants	22
Underbanked	28
Evaluation of possible functions in a digital wallet	37
Standalone and integrated solution	37
Peer-to-peer (P2P) payments	40
Payments via QR code	48
Offline payments	62
Transaction history with option for limited data	66
Budget management	72
Conditional payments	80
Merchant dashboard and pay-out management	88
Annex – country-specific summaries	95

Executive summary

Purpose

This report assesses euro area citizens' perceptions concerning concrete examples of digital wallet features, as depicted in short, animated videos. This report aims to provide the European Central Bank (ECB) with a deeper understanding of digital payment preferences in the euro area, in order to support designing potential features of a possible digital euro.¹

To this end, focus group sessions were carried out in all euro area countries from December 2022 to January 2023, involving a total of 321 participants. Given the qualitative nature of the study, these results may not be representative of the population as a whole. The findings are descriptive and any efforts to quantify them have been avoided. Participants were subdivided into different target groups – general population, tech-savvy, underbanked, and merchants – based on their digital affinity and role in the payment process.

¹ In March 2022 the 'Study on New Digital Payment Methods' was published as part of the digital euro project. It aimed to explore key features driving the adoption of a new digital means of payment.

Key Findings

Target groups

Overall, most participants showed openness to trying some of the digital wallet features presented. Younger people were more likely to show willingness to adopt, or to at least try out, the digital wallet, while older respondents were slightly more wary. However, uptake of the digital wallet also appeared to depend on how it was introduced and the role local commercial banks played in the process.

The underbanked category was the only target group that felt uncomfortable with the idea of adopting a new digital payment solution. The willingness of merchants to adopt a new payment solution was firmly linked to customer demand and costs.

Functionalities

(See the section on Analysed digital wallet features for background information on the presented functionalities).

Functionalities most highly valued for pan euro area reach

Budget management and peer-to-peer (P2P) payments.

Budget management

The budget management tools included in the digital wallet were perceived to be useful and relatively advanced by most participants, despite some similar features also being offered by other payment providers. Currently available payment solutions with budget management tools are not always accepted at every merchant. In contrast, providing the digital wallet were accepted across Euro area, users would not be required to make payments outside their budget.

P2P payments

The money transfer functionalities were seen as must-have tools for a digital wallet, with high interest in using them. Payment requests, on the other hand, were judged to be relatively innovative by some participants. These features, in combination with the pan-euro area reach and real-time capability, were seen as adding value. Some underbanked participants recognised the advantages of these tools but still did not consider the benefits to be applicable to themselves.

Functionalities appreciated and currently not widely available

Offline payments and QR codes.

Offline payments

The general population perceived offline payments to be the most innovative digital wallet feature with its use in specific situations, e.g. in areas without internet coverage, when mobile data isn't available, or when using flight mode. Despite this, most participants expected they would not use offline payments very often. The greater degree of privacy offered by offline payments was especially appreciated but it also raised concerns about potential misuse, i.e. for tax evasion. The underbanked considered this tool to be possibly closer to fulfilling their needs. Nevertheless, they felt that the offline payments functionality only offered limited utility to them because they would still tend to prefer using cash when offline.

QR code payments

Not all participants across the general population, tech savvy and merchants categories were acquainted with using QR codes for payments. Most participants considered this functionality to be useful in certain situations, e.g. self-service locations, payment of bills, online purchases. However, QR codes were also perceived to be slower than other payment solutions, e.g. contactless payments. While the payer side (general population, tech savvy) and a minority of merchants favoured merchants scanning the QR code, many merchants had privacy concerns and would prefer consumers to scan the merchant's QR-code.



Photo by Saul Sampson on Unsplash

Functionalities generally appreciated

Conditional payments, the merchants' dashboard and pay-out management, and the option for standalone integrated solutions.

Conditional payments

These cover a wide array of different functionalities, of which only payment-on-delivery and pay-per-use were presented to the focus groups. Payment-on-delivery was considered relatively useful by some, while others were satisfied with current guarantees, i.e. refunds for faulty products. Some merchants recognised that paying on delivery might help increase consumer trust but also highlighted concerns, which were echoed by some non-merchant respondents. Pay-per-use was recognisable to participants in use cases at petrol stations, where respondents could envisage using this tool.

Merchant dashboard and pay-out management

The dashboard to monitor payment was positively perceived by merchants, along with the instant-pay-out function, as possible options for improving liquidity. However, receiving many individual payments at the same time would provide less clarity in the budget register. Thus, the aggregated-pay-out tool was judged more appropriate for large merchants and the instant pay-out tool was considered to be better for small merchants.

Standalone and integrated solution

The choice between opening the digital wallet within an existing banking app or using it as a standalone app was appreciated. The choice between these options appeared to be a matter of individual preferences – there were no clearly defined trends among the target groups. Overall, the tech-savvy were more in favour of an integrated solution and some participants in the general population were more likely to prefer the standalone solution.

Lower rated functionality

Transaction history with option for limited data – little interest in increasing privacy in this way, at the expense of usability.

Transaction history with option for limited data

This feature enables the transaction history of payers and payees to only show the transaction number and payment amount and without indicating names. This function was not perceived as being truly private because the transaction details would still be accessible by intermediaries. Moreover, participants felt that inconveniences could derive from not sharing transactions details. Some participants were concerned that frequent use of this feature might negatively impact their credit score.

Overall, the features presented in the digital wallet triggered curiosity among participants and facilitated a lively discussion. Across all countries there was a common understanding that a rapid transformation and digitalisation of payment methods is underway. Against this background, new digital payment options allowing the participants to expand their payment possibilities were generally met with interest.



Photo by David Dvoracek on Unsplash

Objectives, scope, and methodology

Research objectives

The European Central Bank (ECB) commissioned in October 2022 a second round of a qualitative study on new Digital Payment Methods, focusing on digital wallet features. Based on selected features presented in the form of mock-ups (i.e., short sound-free videos depicting the use of the features), the research aims to gather citizens' and retailers' impressions of digital wallet features through focus groups and in-depth interviews. The objectives of the study are to:

- **Analyse citizens' and retailers' awareness, perception and use of existing digital payment methods;**
- **Explore citizens' and retailers' views about the proposed set-up and features of the digital wallet and assess which attributes they value;**
- **Provide the ECB with insights into the motivating and demotivating factors affecting adoption of a new digital wallet across different sub-sets of the population.**

Given the qualitative nature of the study, these results may not be representative of the population as a whole. The findings are therefore descriptive, and any efforts to quantify them are avoided.

Methodology, selected target groups and geographical scope

This section will first describe the target audiences who were separately interviewed in each country: general population, tech-savvy, underbanked and merchants. Subsequently, it will give an overview of the study's geographical scope and methodological approach. The general population, tech-savvy and underbanked had all been residents of the relevant country for over ten years; were above 18 years of age; reflected a mix of genders, levels of educational attainment (primary, secondary or higher), household incomes and employment statuses (employed and unemployed); and had views of the EU and the euro ranging from slightly negative to very positive.

The general population consisted of people using mainly online banking and occasionally mobile banking², while the tech-savvy use the internet every day or almost every day for various activities, on a range of devices. An important characteristic of this target group was regular use of mobile payment apps and other online payment methods.

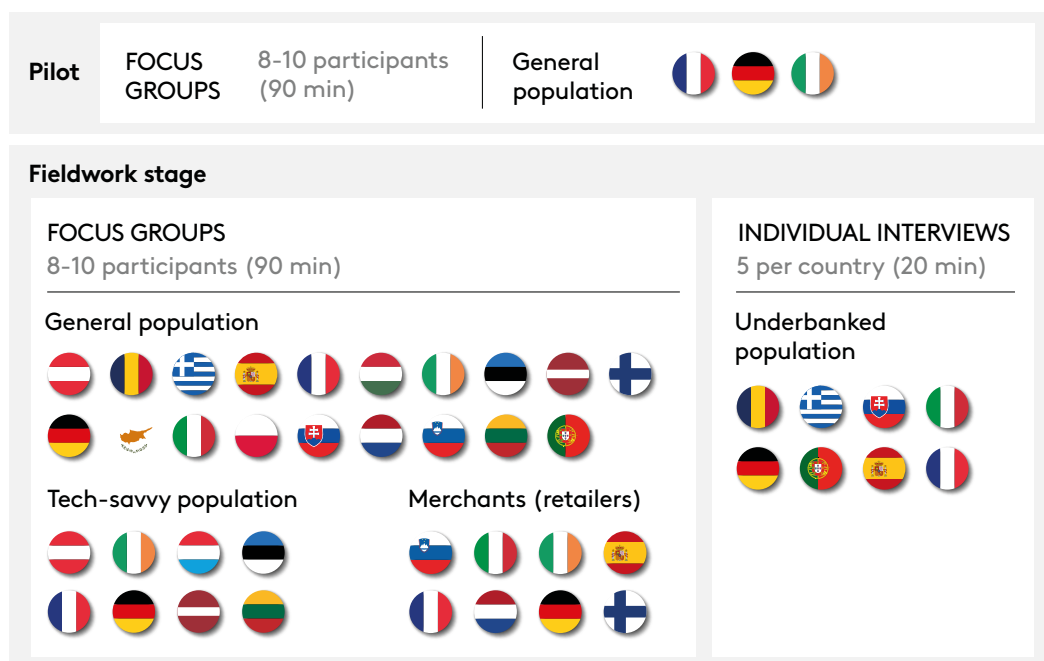
The underbanked groups comprised people who may have a bank account but rarely use debit cards or bank transfers and never use mobile banking, other payment apps or direct debits. People living completely offline were not considered for this study, since it is difficult to hold a conversation about digital wallet features with a respondent who has never seen anything of the sort.

Merchants encompassed people working in the retail sector, in a range of small (fewer than ten employees) and larger (more than ten employees) businesses, using various payment methods including cash, cards, bank cheques, banking apps, mobile apps and other online payment methods. They work in shops operating online, in-store or both, in a mix of rural and urban areas.

The methodological approach was of a qualitative nature and consisted of focus groups and in-depth interviews. Research proceeded in two stages (Figure 1).

² Online banking is defined as an electronic payment system that enables customers of a financial institution to conduct financial transactions through the financial institution's website (i.e. browser application). Mobile banking covers the same functionalities, but is conducted on a financial institution's mobile app.

Figure 1:
Geographical
scope of the
research



First stage: In-person pilot focus groups were conducted with the general population in three Member States – Germany, Ireland and France – to test the content and length of the discussion and the clarity of the visual materials used. The insights obtained from these exchanges were then used to revise the discussion guides, moderators' script and mock-ups shown to participants.

Second stage: In-person focus groups³ were conducted across euro area countries with participants from the target populations described above. During the main stage of the fieldwork, focus groups were held with participants belonging to the general population, the tech-savvy and merchants, lasting 90 minutes. Focus groups with participants belonging to the general population were conducted in all the euro area countries as of 2022⁴, to ensure a comprehensive view of opinions across the euro area. Focus groups with tech-savvy participants were run in Germany, Estonia, Ireland, France, Latvia, Lithuania, Luxembourg and Austria. Focus groups with merchants were held in Germany, Ireland, Spain, France, Italy, the Netherlands, Slovenia and Finland. All focus groups consisted of a discussion with eight to ten participants.⁵ In addition, individual phone interviews of 20 minutes were conducted with participants belonging to the underbanked category. These were performed in Belgium, Germany, Spain, Greece, France, Italy, Portugal and Slovakia, with a total of five interviews per country.

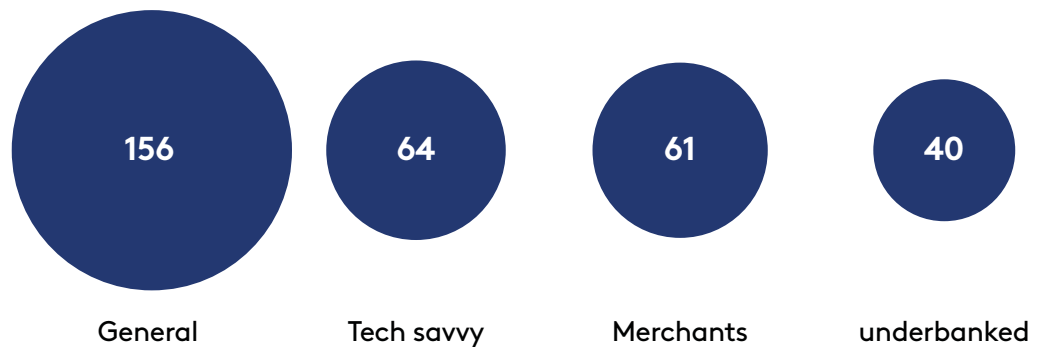
³ Exceptionally, the focus groups in Estonia, as well as the merchant focus group in the Netherlands, were held online.

⁴ Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Austria, Portugal, Slovenia, Slovakia, Finland, Sweden.

⁵ Exceptionally, the merchant focus groups in Slovenia and Finland were conducted with five and six participants respectively.

As shown in Figure 2, focus groups were conducted with 156 participants from the general population, 64 tech-savvy participants, and 61 merchants. In addition, 40 underbanked participants were interviewed.

Figure 2:
Total number of participants per target group



The fieldwork was conducted between December 2022 and January 2023.

Analysed digital wallet features

The focus groups were used to examine participants' understanding, perception and current use of existing digital payment methods, and their reaction to specific digital wallet features. The selection of the features was based on insights gained from the 'Study on New Digital Payment Methods' (March 2022), which was undertaken with a view to supporting digital euro design decisions in the investigation phase and the potential future preparation and development phases. The focus group facilitators described these features (Figure 3) to participants in the different target groups, to explore how they would affect potential adoption of a new payment solution. As well as showing mock-up videos of a character making payments in various situations using the different options, they also provided additional explanations of the circumstances and features used.⁶

⁶ The importance of pan-European or universal acceptance of a payment solution was not further examined in this report, since the first report investigated this issue.























	 General population	 Tech savvy	 Merchants	 Underbanked
Standalone & integrated solution				
Peer-to-peer (P2P) payments				
Purchases using a QR code				
Offline mode				
Transaction history with option for limited data				
Budget management				
Conditional payments				
Dashboard & pay-out management				

Figure 3:

Digital wallet features discussed with each target group

Participants were introduced to the digital wallet in an onboarding process, consisting of a few taps inside a hypothetical mobile banking application. Subsequently, there was a discussion around whether they would prefer to use the digital wallet as a **standalone solution** (i.e. a separate app) or an **integrated solution** (i.e. within the banking app). In both cases, the digital wallet solution can automatically be linked to the user's bank account.

Peer-to-peer (P2P) payments make it possible to instantly send money to anyone within the euro area, with no transfer fees. As shown in the mock-ups, payment transfers are initiated by selecting a person's phone number from the user's contact list and confirming the payment using face recognition. After that, the payer and payee receive instant confirmation of the successful payment. Alternatively,

the payee may send a request that pops up in the recipient's app. The recipient may then decide whether to pay all or part of the amount, or not to pay at all. There is also an option to attach a text message to the pay-back. Again, the payment is confirmed using face recognition and the money is transferred immediately.

The digital wallet may also be used to make **purchases in stores, using a QR code**. There are two ways in which this feature can be used.

- The customer uses their digital wallet to scan the QR code presented by the retailer and confirms the payment using facial recognition.
- The customer uses their digital wallet to display their personal QR code, which the retailer scans to complete the payment. The customer then confirms the transfer with facial recognition.

In **offline mode**, the digital wallet may be used to make payments in stores or P2P transfers without an internet connection. Offline payment is contactless: the user holds their mobile phone next to the payee's phone. To initiate an offline payment, a balance must be set aside for offline use within the digital wallet, allowing the user to spend it in a way similar to taking cash out of a purse.

The **transaction history with option for limited data** feature makes it possible to hide some of the payer's data. Purchases made in this way are reported on a user's activity history or bank statement with only a transaction number and the amount paid – no names or other information are displayed. The payment recipient does not know the payer's name, and even any co-account holders would not know who the payment has been made to. This option can be activated in the digital wallet by switching off the option "Show all details in activity history".

The wallet also offers a funding possibility. Users can preload money from their bank account into their digital wallet, and money is then deducted from their digital wallet balance when they make payments with it. This allows for **budget management**. If they prefer not to fund the wallet, they can link it to their bank account, so that money is deducted directly from the account when they make payments. The digital wallet balance remains at zero. To summarise, the options below are possible.

- **If a user would like to control their spending, they may set a monthly budget for themselves. A certain amount is transferred automatically from their linked bank account to the digital wallet every month, and they use this balance for all their payments. They can also set a minimum limit and receive an alert when their balance falls below it.**
- **A user may choose not to pre-allocate any money to their digital wallet. When they pay, the digital wallet deducts the amount directly from their linked bank account.**

- **A user may choose to always keep a certain balance in their digital wallet. They can set it up so that it is automatically refilled from their linked bank account to the pre-set balance after each payment. This provides a digital nest egg rather than enabling budget management.**

The features presented to the tech-savvy population included **conditional payments**. Two types of conditional payment methods can be used through the digital wallet.

- **Payment on delivery allows a customer to order something online but only execute the payment once the delivery has arrived at their home. If the product does not arrive no payment is made.**
- **With the pay-per-use method, a customer pre-authorises a payment since the final amount of the purchase is unknown in advance (e.g. renting a car). This reduces the risk for merchants, since they are assured that the customer has sufficient funds to pay for the service. If the payee does not confirm and the payer does not provide the corresponding authorisation after a certain period of time, reserved funds are released and the pre-authorisation is cancelled.**

Discussions with merchants looked at current use of digital payments as well as the motivating and demotivating factors affecting acceptance of new payment methods. The focus groups examined whether or not they would accept the two types of **QR-code payment** in their stores, their views on the two types of **conditional payment**, their use of payment **dashboards**, and different methods of **pay-out management**. Pay-out refers to the way in which a merchant's bank or payment service provider transfers customer payments using cards or other electronic payments to their bank account.

This typically happens one or two business days after the payment. There are several options for instant pay-out management.

- An instant pay-out option where each individual payment made with the digital wallet is credited instantly to the merchant's bank account. The pay-out for other accepted payment methods is handled as per current practice (i.e. grouped and paid one or two days after, or later, depending on the agreement with the payment acceptance provider).
- An aggregated pay-out in which all digital wallet payments on a given day are aggregated by payment service provider and transferred to the merchant as one single pay-out at the end of that day. The pay-out for other accepted payment methods is handled as per current practice and transferred separately to the merchant.
- A comprehensive aggregated pay-out, where all payments made with all payment instruments are grouped into a single daily pay-out.

Interviews with the underbanked consisted of uncovering the barriers that prevent them from partaking further in the banking system and ascertaining their view on instant P2P payment transfers and offline payments.

The insights gathered from the discussions with participants representing the general population, the tech-savvy, merchants and the underbanked are presented in detail in the rest of this report.



Photo by CardMapr.nl on Unsplash



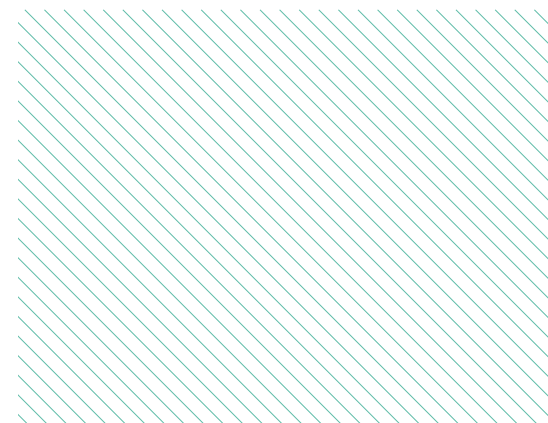
Photo by Clay Banks on Unsplash

Target groups: perception, understanding, & use of digital wallets

General population

The general population had a relatively good knowledge of existing digital payment methods. The findings of these focus groups confirmed that digital payment methods are widespread among the general public, despite differences between age groups in some countries. Participants in some countries were particularly likely to report using digital payment methods regularly, regardless of their age. The most mentioned digital payment methods were PayPal (mentioned in 12 groups out of 19), Revolut and Apple Pay (both cited in ten countries), and Google Wallet (three countries). Other digital payment instruments appeared to be widely used locally, including Payconiq (Belgium, Luxembourg and the Netherlands), Klarna (Germany and Austria), Paylib and Lydia (France), Satispay (Italy), Bizum (Spain), MobilePay (Finland), MB WAY (Portugal), and MBills (Slovenia). Local banks' banking apps were another common type of digital payment method.

Overall, and with the notable exception of one country, the focus groups were relatively curious about the features presented in the digital wallet. However, most felt that the various tools were already offered in a similar form by other payment instruments, with offline payments representing the only true innovation. Respondents who are more accustomed to digital payment methods generally saw the usefulness of the digital wallet in its pan-euro area reach and in some specific situations (e.g. when paying offline).





For travelling I find this useful but locally, what we have is enough.

General population focus group, age 41-64, female, Malta

Respondents who are less familiar with current digital payment methods tended to have a neutral to slightly positive response to the presented features. The way in which a new payment solution is introduced, the role of local commercial banks, and any potential incentives will be key factors influencing their decision whether or not to adopt the digital wallet.

Being less technology-driven than the tech-savvy group, respondents in the general population group were more likely to picture the digital wallet as something closely resembling their current physical wallet. They welcomed features such as the option to store multiple banking cards or bank accounts, loyalty cards, means of identification and documents in it.



The purpose of a digital wallet is to replace a real wallet.

General population focus group, age 18-40, male, France



There must be some kind of bonus, because one thing is that you can make a payment [in the Digital Wallet], but another is that I have my whole life there. I have automatic payments, some pension fund money is coming, everything is in there. It's more convenient for me to get everything done in one place than to have to mess around with ten different apps. The less apps there are in my phone, the easier it is to live.

General population focus group, age 41-64, male, Estonia

Younger participants, who were generally more at ease with digital payment solutions, were quicker to grasp the functioning of the digital wallet. This was particularly striking in countries where attitudes towards digital payments differed the most between age groups.

“

I think things may be going a bit too fast for some people in terms of banking apps for instance. Young people have no difficulty in adopting new ways of doing things, but I notice that the older generation are not as keen on changing their habits.

General population focus group,
age 18-40, female, Belgium

Consequently, an understanding of the payment methods currently available in the market may correlate to a greater willingness to adopt the digital wallet. The older population seems more reluctant to embrace new digital payment methods, while the younger cohort is generally more curious. In many cases, older respondents seemed to accept the necessity of eventually adopting a payment solution of this kind. Some older respondents seemed to have a particularly negative attitude towards mobile apps. They frequently asked whether the digital wallet would also be accessible via a PC or laptop. It would therefore be helpful to introduce a browser version to support adoption across all age groups.

“

I will use it because it will be easier [than other digital payment methods] and I have to move forward with the times.

General population focus group,
age 65+, male, Austria



Photo by CardMapr.nl on Unsplash

Tech-savvy

Awareness of digital payment methods among the tech-savvy was high. Most focus group participants reported using multiple digital payment methods at the same time. The digital payment solution mentioned most frequently across all countries was PayPal, which was cited in almost every group. Apple Pay, Revolut and Google Wallet were cited in at least a quarter of groups. Other solutions emerged as being more widely used at country level, particularly Payconiq (Luxembourg), Lydia and Paylib (France) and Klarna (Germany and Austria). Many participants also mentioned using a banking app associated with their own bank account.

Most tech-savvies embraced digital payment solutions and were relatively positive about adopting payment methods as alternatives to cash. Some even highlighted the positive implications of expanding digital transactions to the detriment of cash, particularly in relation to policing illegal activity.

The tech-savvy groups displayed a positive attitude towards the presented payment features, although they did not perceive them as very innovative compared with existing solutions. In particular, those who would like to diversify the range of payment methods they use had a relatively open attitude towards adopting these features in the future.

Being more knowledgeable about digital payment methods than the other groups, the tech-savvy were quite quick to grasp the features of the digital wallet and were able to get more involved in the discussions. They often directly compared the digital wallet's features with those offered by other payment instruments, usually in order to highlight innovative aspects of the presented features or of other payment solutions or to underline the lack of need for a new payment method.



If I wanted to order something from the US, it would not be possible with the digital wallet you are presenting, because it only allows for payments in Europe. PayPal is more advanced.

Tech-savvy focus group, age 18-40, female, Latvia

When drawing comparisons with existing payment methods they also discussed ways and circumstances in which the features could be improved or made more relevant for specific user groups (e.g. small merchants or people with less advanced digital skills). Their greater awareness of digital payment methods may also explain the greater trust they placed in the digital wallet compared with other respondent groups. The tech-savvy were comparatively unconcerned about the degree of privacy and security guaranteed by the digital wallet. Only a few questioned whether it would entail a further loss of privacy and control over their finances: this was of particular concern to some tech-savvy participants in Germany and, to a smaller extent, in Austria. Some of these participants mentioned they were worried about the decline of cash, due to the perceived loss of privacy and financial control this would entail. Older participants in Germany were particularly likely to hold this view. Some of them also scrutinised features of the digital wallet, such as the use of facial recognition to authorise a payment, as potential security risks.

When discussing their potential use of the digital wallet, the tech-savvy mostly focused on whether adopting another payment method would represent added value compared with what they currently use.

Four types of attitudes were identified.

- A “curious to adopt” attitude, characterised by an overall openness and curiosity towards the digital wallet and its potential. In Estonia, Lithuania and Austria, the tech-savvy particularly appreciated the possibility of further diversifying their digital wallet portfolios and valued any new feature that would allow them to expand their payment possibilities. For many of these participants, diversification of payment methods represented added value in itself.
- A “wait and see” attitude in Ireland, France, Latvia and Luxembourg. While keeping a generally open mind towards adopting the digital wallet in the future, these respondents were more critical about its features and felt they would need to identify clear added value in order to fully embrace it. A key requirement for some “wait and see” participants, particularly in Latvia, was that the digital wallet should not be too dependent on a single banking app, in case they decided to stop using that app.
- A “beneficial for others” attitude, where the tech-savvy could see the benefits of the digital wallet for some user groups but not necessarily for themselves. For example, the tech-savvy in Estonia saw particular benefits for small businesses unwilling to invest in more expensive digital payment solutions. In Lithuania, respondents thought the digital wallet had potential as a simpler and more accessible payment method for people with low or average digital skills.



For business customers, it would essentially be a payment acceptance solution for which they might not have to pay a service fee.

Tech-savvy focus group, age 18-40, male, Estonia

- A straightforward rejection of the digital wallet by a minority of participants. The tech-savvy in Germany were more likely to display such an attitude, particularly in the older age groups. This stance was often motivated by concern about the risks of launching a new digital payment method. Less often, respondents fully rejected the digital wallet because they believe that the digital payment market is already saturated and a new digital wallet could not possibly introduce any innovative features.



This idea would have been new 10 years ago, but the digital wallet doesn't have anything innovative or useful.

Tech-savvy focus group, age 41-64, male, Germany

Merchants

Merchants across the euro area showed widespread awareness and use of electronic payments in their daily activities and viewed them positively. Merchants generally accept several kinds of digital payments, including debit cards, credit cards, PayPal and other digital wallets. While mobile payments have become the norm in some countries, merchants in other countries reported that a major share of their customers still rely on debit cards. They mentioned advantages of electronic payments including a faster payment process, reduced time at the check-out (which benefits both retailers and customers), and the low cost of point-of-sale payments, along with fewer charges for cash handling.



In the Nordic countries we have developed these digital solutions for years and are used to them. Making payments with MobilePay is part of daily life.

Merchants focus group, age 41-64, male, Finland



A lot of people use their phones because there is no payment limit. When using a card I think the limit is now €50, beyond which you have to enter a PIN.

Merchants focus group, age 41-64, female, Ireland

However, not all countries are perceived to be at the same stage in their digitalisation process, with merchants in Germany noting that electronic payment methods sometimes do not work in stores, and that the internet connection is usually poor.



Germany is so far behind in digitalisation.

Merchants focus group, age 41-64, female, Germany

“

I've personally had a lot of situations where I wanted to show my digital PAYBACK card but couldn't open it, because there was no internet in the grocery store.

Merchants focus group, age 18-40, male, Germany

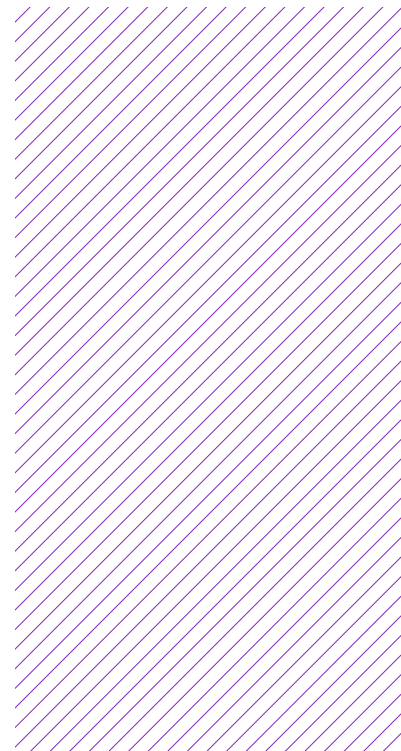
The extent of the use of mobile payment apps, and therefore merchants' familiarity with them, shaped their perception of these tools and the features presented in the digital wallet. Retailers whose customers frequently use mobile payments were generally more enthusiastic about the digital wallet and its opportunities. Across all countries, merchants were open to adopting a new digital wallet payment method if there was demand from the customer side. They indicated that they had already implemented various digital payment options in order to reach a larger client base. They were also willing to implement the digital wallet if it simplified their payment system. Meanwhile, some were interested in the greater sense of security offered by the new digital wallet.

“

I think for me it would be a security thing. There is so much scamming going on with banks and everything. You are kind of wary. You just feel this is the safest thing we could use.

Merchants focus group, age 41-64, female, Ireland

When asked what factors would encourage them to adopt a new payment acceptance solution, merchants' main concern in all countries was remaining competitive and attractive to their customers and maintaining their brand image.





If other merchants said they've implemented something and that most people are paying that way, I'd immediately start the process of implementing it. In addition, if a customer asked for it one day, I would do the same. Therefore, competition is definitely a factor. If you see they are implementing something, you cannot be lagging behind; you need to move along with them. But I'd probably get rid of some other means of payment then, I don't want to have too many.

Merchants focus group, age 41-64, female, Slovenia



More specifically, the merchants indicated that their use of a new digital payment method would depend on a number of factors, such as:

- the extent to which their customers wish to use it
- the ease of use
- the size of the investment required to set it up
- the associated fee
- the merchant's own technological knowledge
- the simplicity (and therefore speed) of the transaction procedures while remaining secure

The issue of high fees for digital payment methods was mentioned many times and was also considered a critical factor. Many merchants complained about the cost of solutions from large, international providers, while also referencing increasing concentration of the payments market. However, they continue to offer them to accommodate their customers. Merchants in Italy and Slovenia indicated that despite seeing the potential of the digital wallet, they would use it only if it came with low fees. Participants in Slovenia also emphasised the financial and time investment associated with setting up new payment methods and said they would implement new options only if these were frequently requested by clients.

The size of investment mainly related to the need to purchase additional devices, with merchants in Finland stating they would be more likely to adopt new payment methods if they did not require any new devices. Consequently, two payment acceptance options were presented to the merchants: via their existing terminal or via their smartphones. Many merchants in the Netherlands had reservations about using their private phones as an acceptance device for electronic payments, preferring to use their existing terminals. On the other hand, some felt that accepting payments with a mobile device added smoothness and reliability to the purchase processes. Even merchants who preferred to use the most common and widespread payment methods, i.e. debit and credit cards, did not rule out using a payment acceptance solution on a mobile device.



If you accept payments via your mobile device, it is handy since you have it always with you. In my case, it doesn't matter much because I have a physical store, but for someone selling in the street markets, you take out the mobile and that's it, it's much more convenient.

Merchants focus group, age 18-40, female, Spain

Investigating and installing a new payment method requires a significant time commitment, which smaller businesses do not always have the financial and human resources for. Some merchants said they would probably be late adopters of new payment methods, implementing them only once they were required by their customers.



A new payment method means more paperwork!

Merchants focus group, age 41-64, male, France

“

It's a lot of work with the legal teams. There are many disputes about blocked payments because there are problems between the individual's account and the company, and issues with international payments from clients on the other side of the world. Changing payment methods is not recommended for small structures. You have to look at what it means in terms of resources: a person has to be in charge of that mission.

Merchants focus group, age 18-40, female, France

“

In the past it was 100% cash, then cards started, now it is 80% cards and 20% cash.

Merchants focus group, age 18-40, male, Spain

“

People used to not tap [their card] for 20 cents because it was coins but now nobody cares any more for what it is. They tap [their card] for everything.

Merchants focus group, age 18-40, male, Ireland

Merchants across all countries understood that a rapid transformation and digitalisation of payment methods is underway, and that the role of digital systems in payment methods has grown as a result. Even in low value transactions, merchants have noted a decrease in the use of cash for payment, accelerated particularly by the Covid-19 pandemic (ES, IE, SI). This trend is more pronounced among younger customers. Merchants are open to these changes and willing to adapt to them in order to accommodate their customers.

Merchants highlighted difficulties among the older generation in following the trend. They are often unfamiliar with digital payments and sometimes fail to comply with certain security authentication mechanisms, resulting in failed transfers, confusion and delays. A new online payment method would be attractive if it were simple to use and clearly explained to users before being introduced.



With the older population or those that are less tech savvy, we often have a problem because they're not aware of these security authentication mechanisms. That's not a problem with other means of payment.

Merchants focus group, age 41-64, female, Slovenia

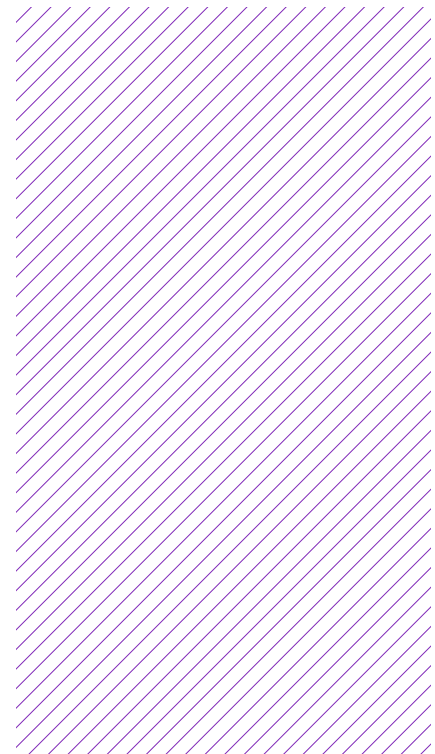
A few merchants, especially in Germany and France, expressed dissatisfaction with existing online payment methods. They generally feel less protected in the event of possible disputes with clients. They were also unhappy with the payment fees charged, as well as the long waiting times needed to receive money from payments made through credit cards.



When you have a dispute with a customer who is acting in bad faith, [one particular company] debits you anyway. The money goes back to the customer, but the product is no longer there.

Merchants focus group, age 41-64, male, France

While merchants held positive views about some aspects of the presented digital wallet features, some suggestions for improvement emerged. As such, limiting the currency of the digital wallet to the euro was perceived as rather restrictive in countries where customers frequently use non-euro accounts to purchase products, such as Ireland, Finland, or Slovenia. Moreover, the added value of the digital wallet was not always clear, especially in Ireland and the Netherlands, where merchants were not initially enthusiastic about the digital wallet, as they were happy with the methods they already used. However, they recognised the rapid technological advancements in recent years, and remained open to the possibility of adopting this new method if it became a standard among customers.



Underbanked

Although participants were aware of the existence of digital banking systems, awareness and knowledge of digital wallets were generally low. Most participants had never downloaded, tried or used a mobile banking app. When paying with debit cards, the underbanked usually prefer to use PIN codes rather than contactless payment. They tend to carry out all transactions, including payment of regular bills (water, electricity, rent, etc.), using cash. In all countries, the study identified multiple and often related barriers to fully participating in the banking system. These barriers can be defined as technical, emotional, and financial.

“

I am very satisfied with using cash everywhere. I don't need digital transactions. It is just more of a mess.

Underbanked in-depth interview, age 41-64, female, Greece

“

Too technological for me.

Underbanked in-depth interview, age 41-64, female, Italy

A technological gap is the main barrier to entering the banking system and using smart banking tools. The underbanked are separated from the rest of the population by a large digital divide and a general feeling of fear and uneasiness with technology (i.e. computers, smartphones and apps), in particular for banking purposes. Participants said the “digital world” felt distant and intangible for them. For example, some people in this group may not even have internet at home and instead use public libraries to go online. Due to their lack of confidence in being able to deal with the technology, they also felt apprehensive about installing a dedicated app and doubted their ability to manage it. They mentioned being afraid of making a mistake, accidentally sending money to the wrong account, or having their money stolen as a result of clicking on the wrong button.

“

I am not a fan of these banking apps and smartphones. I'm afraid of doing something wrong and losing my money or of hackers stealing my money. When I have everything in cash, I know exactly what I own.

Underbanked in-depth interview, age 41-64, male, Germany

This group therefore did not feel comfortable with using digital tools and even less with ongoing digitalisation and the speed of technological development. Their barrier to using banking apps is as much emotional as it is technical. They did not feel it would be a worthwhile investment to learn how to use digital banking services, as their knowledge would soon become obsolete and they would not be prepared to keep up to date.

“

Even if I decided to learn how to use those things, they evolve so quickly... there are changes, updates... and I'd be lost again; and I don't have children who can help me with these things.

Underbanked in-depth interview,
age 65+, female, Belgium

Some of the underbanked group said they owned a smartphone, but used it only for making and receiving calls, using social apps such as Facebook and WhatsApp, and playing games. They were able to use simple, straightforward apps that do not pose a danger to their finances and where making a mistake would not imply serious consequences. In contrast, the possibility of using a banking app was considered remote or even impossible, due to the critical link with the person's finances.

“

Mobile phones are for making and receiving calls. I don't even send messages, or anything else. I can't even write the names on the 'thing'; I have the numbers in my head.

Underbanked in-depth interview,
age 41-64, male, Portugal

General mistrust of the banking system was another important factor. Participants in this group were openly sceptical about the banking system: there was a general feeling of being powerless and a fear of being “cheated” by a system that is too large and complex for them to control and understand. They were critical of the banking business model, feeling that these institutions make profits by taking their clients’ money. In addition, the sovereign debt crisis and subsequent bank runs and capital controls had an impact on some participants. The inability to withdraw their own deposits was still fresh in their mind and contributed significantly to a negative perception of the banking system.

“

I don't trust banks; I don't trust people working for banks. I sometimes use my debit cards only because today you can't live with just cash.

Underbanked in-depth interview, age 41-64, male, Italy

“

No, basically the bank is going to win, logically. They give you simplicity, but they impoverish you while they fill their wallets, their business works that way: nothing is free... So, no, not even if it were a big or an international renowned bank, it doesn't interest me.

Underbanked in-depth interview, age 41-64, male, Spain

“

When we had capital controls in Greece, I could not withdraw my money from the bank. I was really upset as it is my money, and I should be in control of it, not the bank. After this incident, I don't trust banks.

Underbanked in-depth interview, age 18-40, male, Greece

This general mistrust also raised doubts about the security of digital payment methods. Apps and mobile payments were perceived as less secure compared with computers, with a fear of potential underlying threats (such as hacking or cloning). Participants were generally concerned about protecting their privacy and feared their data could be stolen if they were kept in an unsafe location. Their concerns about security extended to the physical device itself, i.e. the theft of their mobile phone. Participants expressed fears of thieves gaining access to their bank account after stealing their phone.

“

I like to go with cash; it's different. Imagine that they steal your mobile, or an iPad or a computer. If they access or hack it, they can empty your account, right?

Underbanked in-depth interview,
age 41-64, male, Spain

An underlying uncertainty around “intangible” tools was evident among many participants. This group saw cash as more secure because it is tangible, and found that it allowed them to better control their budget and transactions. Participants expressed concerns about how easy it could be to divert large sums of money from their accounts, compared with the difficulty of stealing a large amount of cash. A common theme was a lack of need to use bank accounts and banking tools, due to limited financial resources and/or a limited need to exchange funds within their inner circle. Members of this group are usually low-income earners who consider a bank account an unnecessary additional cost and use cash for their daily needs.

“

I used to, but currently I don't have a bank account. I reached a level where I even had two credit cards, but then when the crisis occurred I thought it wasn't worth it for the amounts I dealt with. Now I don't have many expenses. I use cash for everything and I always get paid in cash in my job.

Underbanked in-depth interview,
age 41-64, male, Portugal

This group reported making all (or almost all) transactions in cash, driven by a reluctance to change their habits: they preferred to conduct payments in the same way they always had. Participants usually completed financial transactions in person at the bank, only withdrawing the amount of cash needed for a specific purpose or to last the month. While acknowledging that the younger generation may benefit from using a digital wallet, they considered themselves too old and set in their ways to adopt different payment habits. They perceived using cash as safer and did not see any need for change. Some participants mentioned that family members who have a bank account occasionally help them to make a payment or manage their finances, but they did not feel the need to join a bank themselves. Some even considered using a debit card challenging, and they reported that they are usually supported by relatives or friends when there is a need to use payment methods other than cash. This group did not want to feel pushed by the banking system into using “self-service tools” (e.g. completing financial transactions on their own, withdrawing money from ATMs, or using home banking to make payments).

“

It doesn't go with me, I prefer the ancient ways because my father never wanted cards and always had cash and I've gotten used to how my father did it.

Underbanked in-depth interview,
age 41-64, male, Spain

“

I am retired and do not have the opportunity to move around in these services. I don't have that need. I have a son, a daughter, a wife, and they cover it for me if I need anything.

Underbanked in-depth interview,
age 65+, male, Slovakia

This suggests that some of the underbanked continue to rely on cash out of convenience. However, many banks already impose fees for providing services that customers can perform online themselves, which also creates a financial incentive to learn how to use digital tools. Participants acknowledged society's gradual move away from cash and recognised that they would eventually need to deal with digital payments.

“

With time, yes of course, we all get there eventually. I consider myself older now because I've lived in a different time, but I see that young people prefer other things.

Underbanked in-depth interview, age 41-64, male, Spain

In some countries, cash is seen as a “smart way” to obtain discounts, since merchants tend to view cash payments favourably. This may be due to the (sometimes high) fees charged by banks and other digital payment providers, and some participants speculated that retailers may desire to understate their revenues and evade taxes.

“

If you pay by cash, you get better deals.

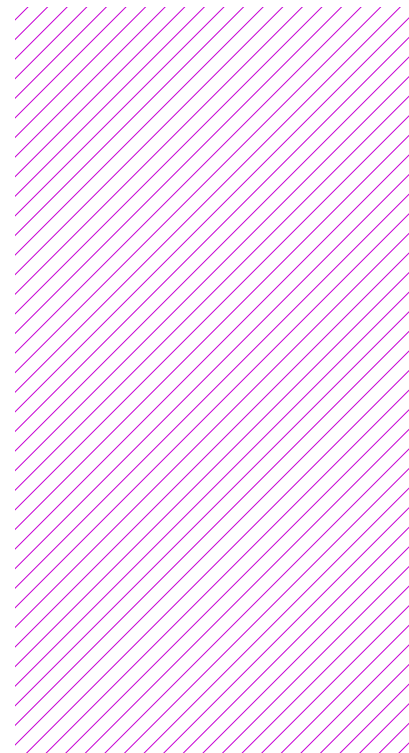
Underbanked in-depth interview, age 41-64, male, Italy

In some instances, the underbanked reported having valued personal relationships with the staff of local banks, so they preferred to visit their branch instead of making a transfer online.

“

I consider myself fortunate to still have personal contact with people at my bank. In most cases banks don't want you on their premises anymore; you have to do everything by yourself, using machines. I don't want that.

Underbanked in-depth interview, age 65+, female, Belgium



Potential use of a digital wallet

Some underbanked participants were in principle open to the idea of using more “advanced” tools, for reasons such as convenience, financial incentives and wider social pressures. One participant noted that a digital wallet would eliminate the need to make trips to the ATM or a bank branch to withdraw money. Another said they would be more likely to use a digital wallet if it offered them some benefits or rewards, such as saving money on transactions. Some noted that most bills, salaries, and payments are now exclusively conducted by bank transfer and recognised that digital payments would soon become the norm.



If only we had something like an ATM at home! It would be a good idea to have one, that way you wouldn't have to go to the bank, but I don't know if that exists.

Underbanked in-depth interview, age 41-64, male, Spain



I think sooner or later I probably will have a bank account. I can't let my parents do that for the rest of my life and I don't think any company will be willing to give me my salary in cash.

Underbanked in-depth interview, age 18-40, female, Germany

However, due to insecurity and uneasiness about the use of digital banking tools, as well as the perceived lack of need, this group generally expressed resistance to using the digital wallet. They considered the quantity and nature of the challenges involved in starting to use a banking app disproportionately high compared with continuing to pay with cash.



I will use digital banking only when I have no other choice.

Underbanked in-depth interview, age 41-64, female, Greece

Some more forward-looking participants could imagine having a digital wallet but would not use it for large sums of money, to limit their losses in the event of any problems. Participants also appreciated the privacy offered by cash payments, which they would not get with any digital payment method.

“

I wouldn't use it for large amounts of money. I am not sure if my money would be safe. I don't trust e-banking and banking apps in general.

Underbanked in-depth interview, age 41-64, female, Greece

“

I can already do everything we've talked about with cash. Plus, I have more control over my payments and nobody knows what I spend my money on.

Underbanked in-depth interview, age 41-64, male, Germany



Photo by Clay Banks on Unsplash



Photo by Blake Wisz on Unsplash

Evaluation of possible functionalities in a digital wallet

Standalone and integrated solution

The digital wallet can either be used within a user's commercial banking app (i.e. integrated solution) or downloaded as a separate app (i.e. standalone solution) on their phone.

General population

Participants saw the benefits of using the digital wallet as both a standalone and an integrated solution.

They perceived the integrated option as practical, because having more payment solutions makes it easier to lose control of spending. Some also felt that using the wallet inside their banking app would allow them to rely on their local bank for help.

In contrast, others appreciated the standalone solution because they would use the banking app and digital wallet for distinct purposes. Some thought that by keeping the digital wallet as a standalone app they could use it to group together bank accounts and other types of accounts (e.g. shop loyalty cards).

Interestingly, some participants in the general population group had difficulty understanding that both the integrated and standalone solutions would be operated by banks. While the role of the bank was obvious to them in the integrated solution, they were uncertain how it would look in the standalone solution. This raised various concerns, such as whether they would receive support in the event of issues like needing to retract a payment, or whether third parties would be able to track their balance. However, some favoured the standalone solution based on this misunderstanding, since they expected an integrated solution to be slow and cumbersome to use and a separate tool to be faster and smoother.



I like the potential seamlessness of having everything in one wallet, including investments, and multiple bank accounts. That sort of end-to-end is appealing to me.

General population focus group, age 41-64, male, Malta



I prefer a separate app because it is faster this way, there is no need to make a time-consuming connection with the banking app.

General population focus group, age 41-64, female, Austria

Tech-savvy

Regarding the standalone option, some tech-savvy respondents, who already tend to use multiple payment tools simultaneously, observed that the risk of losing control over one's finances increases with the number of digital payment tools being used.

On the other hand, some participants, including older tech-savvy users in Germany, displayed a clear preference for using different payment apps to buy different types of products, and therefore favoured using the digital wallet as a standalone app. These participants would opt to use their banking app for more important expenses and the digital wallet for more trivial transactions.

The tech-savvy groups suggested introducing an option to link multiple bank accounts to the digital wallet. This would be particularly relevant for users in France and Luxembourg, where people tend to hold accounts with multiple banks.

Underbanked

Many of the underbanked felt the "journey" to full use of a banking app would currently be "too long and too far", requiring a steep learning curve. Among those with a bank account, many would prefer to use a payment card since they would otherwise need to purchase a smartphone, learn how to use the device and its apps, including navigating the validation system (pin codes, facial recognition, etc.), and stay up to date with technological changes.



Photo by Clay Banks on Unsplash

Peer-to-peer (P2P) payments

The digital wallet may be used to transfer money instantly to other people within the euro area, without fees. Two options were presented to the participants: Firstly, the user selects the payee's phone number from their list of contacts, confirming the payment via face recognition. Secondly, a user may also request a payment from someone in their contact list, who is instantly notified of this. The receiver may choose to pay the full amount or only a share of it and attach a message to the payment.

General population

Participants in the general population focus groups found the two possibilities for sending money to friends and family user-friendly. They saw these P2P payments as a must-have tool, particularly because they are already offered by most payment apps currently in circulation. However, they felt the digital wallet's successful implementation of this basic function in combination with its pan-euro area reach made it more attractive than some payment solutions currently available in the market.



P2P payments between banks exists but it is difficult to set up. It would be more convenient this way.

General population focus group, age 41-64, female, Lithuania

General population participants were less familiar with the function of sending or receiving payment requests, despite it being available through other payment apps (e.g. Payconiq). Respondents in some countries particularly appreciated this feature, considering it a useful instrument to remind people of recurring payments (e.g. bills, loans or fees).



If I could pay utility bills quickly from a digital wallet, then that would be convenient. The utility manager would send requests or bills to it, and I'd just need to refill the wallet and accept payments each month.

General population focus group, age 41-64, female, Latvia

The possibility of using a telephone number to send money differentiates this feature from other payment instruments in circulation in most countries and was considered generally practical, since it is faster and easier than using an International Bank Account Number (IBAN) for a normal credit transfer.



It can be used to pay for lunch with colleagues from another department – you take just the phone number, so it's quicker.

General population focus group, age 41-64, female, Lithuania

However, many respondents across different countries scrutinised the idea of using a phone number to process monetary transactions, fearing they would be more exposed to security risks. Others worried about receiving unwanted payment requests or accidentally sending money to people listed in their phone contacts. To avoid this, one participant in Portugal suggested an option to filter the numbers that are allowed to send transaction requests (e.g. closest friends and family). Many found the idea of using a phone number more practical compared with the status quo, which usually requires the use of IBANs.



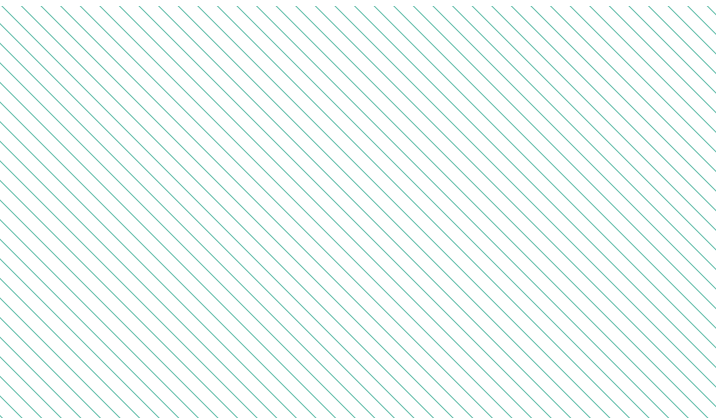
I would be afraid to receive notifications from people I don't know or to accept a request by mistake.

General population focus group,
age 41-64, male, Luxembourg



What if I change my phone number? How do they know what my number is? What makes my number connected to that account? How does that link work? Is there no other way to get the other party's ID? I suppose you need to provide a little more of a guarantee than the phone number to whoever sends you money. It seems to me to be too little secure. A phone number is not really traceable to me.

General population focus group,
age 41-64, female, Belgium



Besides the possibility of sending transactions via a phone number, the general population appreciated a few other features, considering them more innovative than what is currently offered by other payment instruments. For example, they saw the possibility of sending messages through the app interface as a way to protect against fraud.

“

It's convenient to be able to type a message if you wonder whether a scammer sent the request.

General population focus group, age 18-40, female, Lithuania

“

I really like the option of adding a message, which makes things easier to understand and communicate.

General population focus group, age 18-40, female, Austria

Among the features which were less appreciated, and that generated some criticism among the general public, was the possibility of using face ID to consent to the transaction (FI, DE, LT). This was seen as relatively less safe than other authentication methods.

“

I think there should be other multiple options, not just Face ID. I do not like taking photos of myself. There should be a variety of choices.

General population focus group, age 41-64, female, Lithuania

Participants in some countries assumed that the payment recipient would also need to be a digital wallet user, which they felt would be a drawback.

Tech-savvy

Most tech-savvy respondents were already used to sending money to their peers via other digital payment apps, and therefore had a wealth of experience to benchmark the two presented options. Some felt that current payment options, such as PayPal, Revolut and Payconiq, offered very similar functions.

Despite this, the tech-savvy generally displayed a keen interest in both ways of processing transactions. Respondents in all ten countries praised these features, and generally defined them as “convenient” and “fast”. In some countries, like Ireland and Austria, these functions were seen as relatively advanced compared with the options participants were accustomed to in other payment apps (e.g. no need to share a link and a clearer view of the balance).



I find it easier than [another product], because [in that product] you have to send a link, for example via [a messaging service], if you're requesting.

Tech-savvy focus group, age 18-40, female, Ireland

In other countries, the tech-savvy seemed to be well accustomed to both features, as they are already offered with existing payment methods and have been embraced by the tech-savvy population. These participants felt the digital wallet would need to be free, universally accepted across the euro area (as a minimum), and include some innovative tools in order to be adopted.



If it is for free and it works, I would use it

Tech-savvy focus group, age 41-64, male, Austria



Person-to-person payments are really easy and fast if the payer and payee both use Swedbank. Problems appear when you have different banks. If everyone had the digital wallet then it would work, but currently most people use Revolut.

Tech-savvy focus group, age 18-40, female, Latvia

In order to gauge the innovative potential of the digital wallet, tech-savvy respondents shared ideas for potential add-ons that would improve the usability of the two functions and make the digital wallet stand out from existing solutions.

Dividing payments in a customised way

While Austrian respondents proposed a function that simply divides the amount into equal parts, participants in other countries suggested introducing groups, which would allow a unique transaction to be processed with several people at the same time. These groups could be pre-set, enabling users to send money to their established social groups (e.g. friends and family members) more easily. Similar functions are already available on other payment instruments, such as Revolut.



I immediately send an invoice on Revolut for the entire company's lunch and allocate different sums to everybody.

Tech-savvy focus group, age 41-64, female, Lithuania

Sending money to someone nearby via contactless or QR-code technology

Participants mentioned this as a way of avoiding asking the other person for their phone number, which the tech-savvy frequently questioned. Some respondents in Austria said they would prefer to use their email address, while others in Estonia were curious about the fact that no mobile ID⁷ would be involved in the procedure.

⁷ Most Estonians have an ID card with an electronic certificate that links the card to a certain person. This person can use the card to certify themselves in digital transactions and to perform legally valid operations (e.g. a bank transfer or signing a contract). Mobile ID is a secure, digitised version of the ID card that is carried in a smartphone app. It can be used to verify identity in online transactions using a mobile phone.

Cancelling payments within a limited time span after processing them

This was proposed as a way of giving the user time to change their mind or correct potential mistakes.



On Revolut, when you make a payment to a friend, if you made a mistake, you can cancel it within 24 hours, and it's nice to be able to change your mind. I've done it before and cancelled my payment within 15 minutes.

Tech-savvy focus group, age 18-40, female, France

Study on Payment Methods and Digital Wallet

Instant payment transfers
(peer-to-peer (P2P))

Overall, participants saw the money transaction features included in the digital wallet as baseline features for any digital payment app.

“

This feature is already there in the existing banking apps right now. It's not going to make it (i.e., the digital wallet) attractive. However, its absence would definitely be a big disadvantage. It's like a basic thing.

Tech-savvy focus group,
age 41-64, male, Estonia

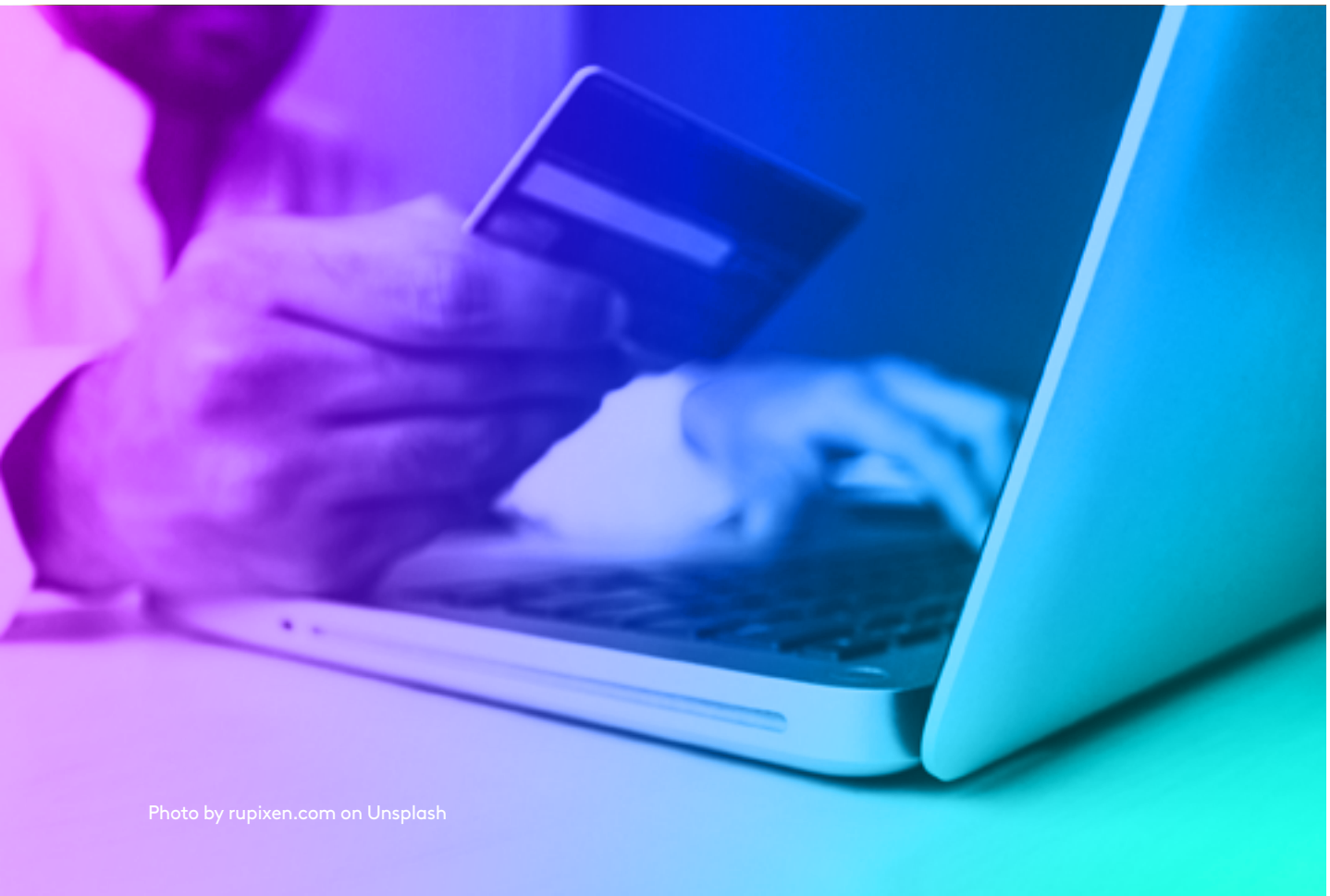


Photo by rupixen.com on Unsplash

Underbanked

To an extent, participants acknowledged that the possibility to transfer money within their inner circle could be interesting. However, in general they did not feel the need to use this feature, primarily because they have a “simple” lifestyle and cash suits their needs and those of their inner circle.



If someone owes me money, it would be nice if the money appeared immediately. Or if it works internationally, if I’m in another country and I have a problem, I can call a friend, ask him to send me that amount, and the money will arrive immediately.

Underbanked in-depth interview, age 41-64, female, Slovakia



My friends only use cash, so there is no point in downloading this digital wallet.

Underbanked in-depth interview, age 41-64, female, Greece

The underbanked saw the advantage of not having to go to a bank branch to make or receive payments and thereby saving considerable time. They also appreciated the ability to pay in situations where cash may not be accepted. However, those benefits would not convince them to adopt the digital wallet.

Underbanked people found the P2P payment possibilities unsettling due to multiple factors: the knowledge gap they would have to fill (Belgium); fear of losing control of the transaction and not knowing “where the money has gone” (Belgium); and fear of mistakes and system failures (Portugal). Some were also afraid the transaction could have hidden costs.

Payments via QR-code

The digital wallet can be used for payment in shops, with the use of a QR code. This can be done either through the customer using their digital wallet to scan a QR code presented by the merchant, or the customer showing their personal QR code to the merchant, who scans it. In both cases, the payment is confirmed by the customer using facial recognition.

General population

Most respondents in the general population were familiar with using a QR code. Their wider use during the pandemic (e.g. in restaurants and bars) made it easier for participants, even those with limited digital skills, to imagine themselves using them to process payments. Some popular digital payment apps (e.g. Payconiq in Belgium, Luxembourg and the Netherlands), already offer the option of scanning a QR code as a means of payment. However, most participants considered payment via QR code slow compared with contactless payments, for instance via debit card. The feature was still relatively popular, since most participants saw it as useful in specific situations (e.g. self-service locations, payment of bills and online purchases).



I'm used to paying the Tari [a tax] in this way, and nearly all of the restaurants have their QR codes for menus.

General population focus group,
age 41-64, male, Italy



QR codes started to appear everywhere during the COVID-19 pandemic. Restaurants and bars were the first to use them, but now you see them everywhere. It has become quite 'normal' to use them; I even use them to pay friends. For example, when I pay to use the tennis court, the person who booked the court generates a QR code via his banking app and we all pay him by scanning the code. It's so easy, and you don't have to carry cash anymore.

General population focus group,
age 41-64, male, Belgium



There are so many digital payment solutions available today. Why start using something more complicated?

General population focus group,
age 18-40, male, Finland

While participants considered customer-presented QR codes a good user experience, they mostly rejected merchant-presented QR codes. They perceived the greater complexity, which derives from having to scan the code as cumbersome and less secure, and most said they would not use it. This complexity presented more of a barrier for older respondents in some focus groups.



Imagine being in a supermarket where everything needs to go so quickly, and everyone has to scan [the merchant's] QR code, accept the payment, do facial recognition, confirm the purchase...

General population focus group, age 41-64, male, Spain

Participants in some countries said they had the impression that QR codes are generally less safe than other payment methods. This derived mainly from the suspicion that they could be more easily hacked or cloned. However, in countries where participants are relatively more familiar with QR codes, they seemed less afraid of using this payment method than others: they actually perceived QR codes as safer.



QR codes are attractive for me when I have to enter information related to a payment and I don't want to disclose anything from my side.

General population focus group,, 50-65, female, Austria

One issue raised was how to tip in restaurants, if the QR code is printed on the bill. Some participants highlighted this as a limitation of this type of payment method. One participant in Slovenia suggested there should be an option to add a tip to the bill via the app interface. It is interesting to note that in Lithuania, some participants stated that they already use QR codes to leave tips at restaurants.



But how can I handle tips with this [the QR code]? Will the waiter have to generate a new QR code for the bill including my tip? That would be too complicated.

General population focus group, age 36-49, male, Austria

Similar to P2P payments, some respondents considered the presence of face ID technology as unsecure.

Tech-savvy

The tech-savvy in all ten countries were familiar with QR codes and could easily understand how this function would work. However, they saw QR-code payments as relatively cumbersome compared with other payment methods, especially contactless payments.

Participants were more sceptical about the function of scanning the merchant's QR code than the possibility of generating a personal QR code that is scanned by the merchant, because it was considered slightly more complicated. Participants in some countries feared that this function might not be easily accessible to people with limited digital skills. Overall, the tech-savvy in every country saw QR-code payments as a potentially useful alternative to more traditional payment solutions, but not as their preferred option for daily payments where speed is important (e.g. in supermarkets).

“

It looks more time-consuming and difficult than just taking out your [contactless] card and beeping it.

Tech-savvy focus group, age 18-40, female, Latvia

“

I don't see the advantage of using a QR code in a store compared with other methods. I think it would be more useful for invoices.

Tech-savvy focus group, age 18-40, female, Luxembourg

In some countries, participants could think of multiple situations in which such a function would be useful. While some doubted that QR codes will spread further in the future given their limited use until now, others, having observed their current use in specific situations (e.g. public transport and tourist attractions in Latvia), were more optimistic. The tech-savvy envisaged QR codes being potentially useful in online shops, vendor-free and self-service locations, public transport and car parks, and when making invoice payments. With regard to self-service, some mentioned that QR codes could be useful in places where customers already make payments on machines, such as IKEA in Austria. In these cases, switching from a card to QR-code payments would not represent a big change and could run quite smoothly, as the customer would scan all their items before also scanning a code for payment. The option of paying for public transport with a QR code was also considered interesting but would only work in areas where free, fast Wi-Fi is available, as in some areas of the Netherlands. It could be an interesting option for travellers, who would simply scan the code with their phone to buy a ticket shortly after entering a bus, tram, or metro. Another possibility could be to have QR codes displayed at stations, with a different code for each type of ticket, allowing travellers to scan and purchase the ticket they need before boarding. Respondents also mentioned the possibility of a QR code being provided on utility bills, ready to be scanned. Participants in Slovenia said this was already common practice in their country.



I see more advantages for small local producers selling their products through self-service, for example.

Tech-savvy focus group, age 41-64, female, Luxembourg

Besides their relatively complex nature, some of the mentioned limitations of QR-code payments were linked to the use of static QR codes, which would not allow the seller or buyer to edit the desired transaction amount in certain situations. For instance, a static QR code printed on a restaurant bill would not allow the customer to add money for a tip.



Will it [the tip] already be included in the QR code on the bill? I am sceptical that this will work out.

Tech-savvy focus group, age 41-64, female, Austria

Some participants expressed a specific concern that allowing payment via facial recognition, as shown on the animation, would be less practical and safe than using fingerprint recognition. The tech-savvy in France appeared less concerned about this, noting that facial recognition would be an easier method of authentication compared with what is currently available. One participant in this country even suggested raising the spending limit for a single purchase, deeming the payment authentication sufficiently safe.



It would be nice if there was no upper limit [for contactless payment]. In France, the limit is €50 and then you need to enter a PIN, but since it's safe, raising it to €300 wouldn't be bad.

Tech-savvy focus group, age 18-40, female, France



Personally, I have turned off facial recognition. I use fingerprint reading, but if it [face recognition] is already supported by big companies, let's say Apple and Google, then I guess it is safe. I feel like maybe, somehow, it's easier to cheat with face recognition. I don't know, maybe by using a photo or something. Fingerprint seems more secure. But that's my personal preference.

Tech-savvy focus group, age 41-64, male, Estonia

Participants in Germany and Ireland expressed fears about privacy and payment security, but more in relation to the use of QR codes in general than facial recognition. They also felt QR codes to be less reliable and more imperfect than other digital payment options, given that the scanning does not always work smoothly, depending on screen brightness or other variables. To address this, some participants made suggestions such as automatically increasing screen brightness when displaying a QR code in the digital wallet.



Sometimes if the scanner is scuffed or dimly lit, you cannot pay. An alternative payment method would be needed in such a case.

Tech-savvy focus group, age 41-64, female, Lithuania



The screen needs to be brighter, especially during daytime in strong sunlight. The QR code could be invisible. There should be an automatic additional brightness function or a button that would quickly increase screen brightness.

Tech-savvy focus group, age 41-65, female, Lithuania

In some participants' view, QR codes would be a useful alternative for sellers, who wouldn't need to invest money in a payment terminal. However, for most tech-savvy respondents across the ten countries, the utility of this payment method for consumers remains limited to specific situations.



It seems to me that paying with a QR code makes a big difference for the seller, not the buyer. The seller doesn't have to think about which bank to sign a payment terminal contract with, and which terminal to use. It also gives an advantage to all kinds of small businesses, and at fairs and small shops where you don't want to organise any big payment solutions by yourself. The same is true for temporary tiny pop-up shops.

Tech-savvy focus group, age 18-40, female, Estonia

Merchants

Merchants were generally open to using QR codes for payment if their customers were to demand such an option. Some key advantages are elaborated below.



The price should be much better for us.

Merchants focus group, age 41-64, female, Italy



Why not, yes, the new generation wants it.

Merchants focus group, age 18-40, female, France

The impression of QR-code payments offering increased security was particularly strong among merchants in Spain and Slovenia, particularly in the case of payments linked to facial or fingerprint recognition. This is partly because they perceive that contactless payments for small amounts carry a higher risk of fraud, as they do not require any verification or identification from the customer. Merchants in Spain complained that the current lack of security can cause them problems after a fraudulent sale, as they may be asked to provide further information about the sale to the bank, or even have the revenue withdrawn from their account. Merchants in Germany appreciated the possibility of obtaining immediate feedback on whether the customer is solvent and therefore actually able to pay due owing to the real-time capability. On the other hand, merchants in Italy felt that contactless payments would be more secure than QR codes, as they are more commonly used.



If a card has been stolen and the genuine cardholder has reported it, the bank asks you for the receipt to see how it has been charged. If you don't provide it, they take it out of your account and in the end, you have lost a sale and a product.

Merchants focus group, age 18-40, female, Spain



Right now, you process payments with cards and you don't know if they belong to the person there. You don't ask if it's their card or not. You usually don't check if the card is theirs.

Merchants focus group, age 41-64, female, Spain



Contactless payments are better [than QR-code payments]. They are smarter, faster and more modern.

Merchants focus group, age 18-40, female, Italy

Some merchants in Finland and the Netherlands mentioned customers having more sense of control over their budget as a benefit, since they see and validate a certain amount. There were several suggestions for additional features, such as enabling customers to add their store loyalty cards to their QR code or allowing them to pay in instalments through the QR code, which could motivate them to continue buying products despite the rising cost of living. Payments via QR code could also give merchants more oversight of their merchandise through a link to the current stock of products.



Customers could choose a number of instalments in their digital wallet. I sell some goods that are over €200. People might buy such products more frequently if they could pay this in four instalments, for example. That would be a great system.

Merchants focus group, age 18-40, female, Slovenia



It would make sense to link the data to stocks, but this might take too much time and cost too much.

Merchants focus group, age 41-64, male, Italy

Since the payment would be completed in real time, some merchants also appreciated the guarantee that a customer would not be able to leave without paying.



It's a guarantee of payment (unlike a cheque).

Merchants focus group, age 41-64, male, France

However, there was also scepticism, since most of the merchants consulted were unfamiliar with this new method of payment. There are a few exceptions, such as the widespread payment of invoices using QR codes in Slovenia, and the occasional inclusion of QR codes on receipts in fast-food chains in Spain and Finland to facilitate the payment process.

Due to their very limited experience with this payment method, merchants expressed doubts in several areas, including:

- **difficulties with the instant reading of the QR code;**
- **ease of use;**
- **the speed of payments;**
- **investment costs;**
- **the authentication methods proposed.**

Issues with reading QR codes were a considerable source of concern: some participants had experienced these in other contexts, such as attempting to read a QR code to access a restaurant menu or scanning a ticket for an event.



I think it will depend a lot on the mobile phone we use. I've experienced that sometimes the problem is not with the QR code, but with the mobile.

Merchants focus group, age 18-40, female, Spain



Sometimes [the QR code] gets blocked. The mobile needs to be at full brightness in order to scan the QR code, or it doesn't work properly and you have to try again, losing time.

Merchants focus group, age 41-64, male, Italy

In terms of ease of use, many merchants were worried about the number of steps involved in the QR-code payment process, and thought this might extend the time at check-out rather than shorten it. They would welcome more information explaining the benefits from a simplicity perspective, especially compared with the ease of existing options such as contactless debit card or mobile phone payments. Some remarked that they had encountered situations in which even current digital payment methods didn't work properly.



Contactless is faster right now because the process has been perfected. With a QR code, you have to do a minimum of two steps – reading and identification – so no one can beat contactless right now.

Merchants focus group, age 18-40, male, Spain



When there are a lot of customers to serve, it has to be quick. I can't monopolise the cash register, as clients complain about everything!

Merchants focus group, age 41-64, female, France

“

You get used to everything, but it all takes a little longer. Now it's just a question of tapping a card or a phone and you're done. Looking for an app will take longer.

Merchants focus group, age 18-40, male, Netherlands

“

Contactless is what we are used to already so why complicate it all?

Merchants focus group, age 18-40, male, Ireland

Merchants also had questions about the investment needed to install technology such as QR code-reading devices as well as smartphones, since some reported that certain mobile devices have difficulties scanning QR codes. A number said they have found their current cash register systems do not work for QR payments, and recognised they would likely need to invest in an iPad or other tools. Such a high level of investment was particularly feared by owners of small shops. The costs of such devices should therefore be kept to a minimum to encourage take-up, as this aspect was particularly discouraging to retailers. Some also saw the time required to implement the necessary technology as a deterrent, as it may require considerable effort to install and manage. Integrating it with current accounting systems also seemed difficult and would require further investigation on the merchant's part.

“

But if I have to have the laser trigger now ... It means I need another device, and I need to make one more investment.

Merchants focus group, age 41-64, male, Spain

“

Implementing new technology is a lot of work. We dealt with PayPal for almost a year because there was an error on their side, which we could not fix. It is not a simple process. When we started including QR codes on invoices, it took almost half a year until all the codes worked all the time.

Merchants focus group, age 41-64, female, Slovenia

“

You would need an iPad connected to the cash register: that would mean changing our cash registers!

Merchants focus group, age 18-40, female, France

“

We can all do it if we download an app on our own phones, but then how do we get the information for accounting?

Merchants focus group, age 41-64, male, France

Merchants also provided recommendations on how the digital wallet should be displayed on the customer's phone, suggesting that the account balance should not appear prominently upon payment since openly displaying a high sum may present a security risk.

Some merchants in Germany and Slovenia also highlighted the need to keep offering payment options that do not rely on smartphones, since a low or dead phone battery could result in a customer being unable to pay. Several merchants in Finland made a similar point, referring to the lower temperatures in the country that can cause phones to run out of battery faster.

“

The only disadvantage I see is that my phone is often without battery.

Merchants focus group, age 41-64, female, Slovenia

“

One thing to remember in Finland is that it gets really cold sometimes – -10°C. Smartphones quickly lose power when the weather is very cold, and then you cannot make any payments.

Merchants focus group, age 41-64, male, Finland

On another note, focus group participants did not always perceive facial recognition as a reliable way of authenticating customers, as they said it does not provide a satisfactory level of precision. There were concerns that it might malfunction and slow down the payment process, and some merchants suggested alternative authentication and verification methods such as fingerprints or a PIN code. Ideally, they would prefer to let customers choose between various verification methods. On the other hand, some were happy with face ID verification, as they thought it seemed easier than remembering a code or password or using fingerprints. There were additional questions about the customer's ability to see what is being paid, the need to generate a new QR code for each transaction, and generation of receipts.

““

Facial recognition is not always reliable. If the phone gets stolen, it's a big problem. I have "opened" my friend's smartphone many times with my face – even though we don't really look alike.

Merchants focus group, age 18-40, female, Finland

““

It makes me wonder about all the information being transmitted, particularly in personal transactions, since QR codes can contain a lot of information.

Merchants focus group, age 41-64, male, Finland

““

It [facial recognition] has its limits: you need light and the application may not recognise you.

Merchants focus group, age 18-40, female, France

““

If someone gets access to another person's QR code and wallet, they might try to dig out all kinds of data for marketing or other reasons. As a consumer, I'm not sure I would be ready to share all that information.

Merchants focus group, age 41-64, male, Finland

Of the two QR-code payment methods explored in the study, most participants preferred the option of the customer scanning a QR code produced by the merchant. They were concerned about security and data privacy when a customer shows a personal code containing their details.

““

Personally, I wouldn't do this. If they scanned it, yes, but me scanning it seems very invasive.

Merchants focus group, age 18-40, female, Slovenia

“

It could feel like they're giving more data if we're the ones scanning their phones, even though they're really not.

Merchants focus group, age 41-64, female, Slovenia

However, some merchants expressed a clear preference for the second method, i.e. the merchant scanning a customer's QR code. They felt that merchants would be more experienced at reading QR codes, which would speed up the payment process. In addition, they considered it a more natural evolution of current payment methods where a customer's role is more passive (i.e. providing their bank card) compared with the retailer's function (i.e. charging the card).

Overall, while retailers in most countries said they had not observed any demand from end-customers for a payment method involving QR codes, they expected this to change in the future in view of technological advancement and higher pressure for digitalisation. Merchants in Slovenia were particularly positive about the QR-code payments. They expected customers to welcome this development and adapt quickly to the new method, with advantages for both retailers and customers.





Photo by Christiann Koepke on Unsplash

Offline payments

Offline mode in the digital wallet enables users to make payments in a shop or P2P transfers without being connected to the internet. To use this function, they must assign a balance for offline use, which they can spend when disconnected from the internet. They can make contactless payments by holding their phone next to the payee's phone.

General population

The possibility of paying offline was considered the most innovative of the presented payment features. None of the participants recalled having used this option via other payment methods. In every country, most participants acknowledged the convenience of this function for situations where they do not have access to the internet (e.g. in areas without internet coverage, when running out of data, or when using in-flight mode). However, most also noted that those situations are rather limited, so thought they would rarely use this option. Participants considered this feature the most similar to cash and frequently drew comparisons between the two methods of payment. In Malta, for instance, some observed that this feature would prevent them from accumulating small coins in their wallet: instead those small sums would be accumulated in their account balance.



I do not always carry cash, so if there is an issue with the internet then I can use this feature.

General population focus group, age 41-64, female, Luxembourg



You can pay with your mobile on a flight even if you have no connection – that's cool.

General population focus group, age 18-41, female, Italy



I could pay the plumber with this feature, as he does not carry a payment acceptance device.

General population focus group, age 41-64, male, Greece



Imagine you pay with a €50 banknote, and then you get the small change and it's in your physical pocket. With this tool you can do the same, for instance receiving €19.24 as if it was in your physical wallet, but without having lots of coins in your pocket. They're just there, digitally.

General population focus group, age 41-64, male, Malta

Some respondents thought this tool represented added value for its greater level of privacy. However, this aspect was also a concern for some. Many participants wondered whether it would facilitate tax evasion and money laundering, activities that online payments would normally help to counter.

However, even in circumstances where there is no internet access, some respondents would choose to use cash over the digital wallet. Attitudes tended to differ by age in some countries, with younger age groups more willing to give up cash and older ones less willing to do so. Some participants across all age groups even expressed the hope that offline payments would help to completely replace cash.

“

I really like the idea! Also, in the future cash will practically disappear, so it seems great – but not for tomorrow, in a while.

General population focus group, age 18-40, male, Spain

Reluctance to abandon cash in favour of the digital wallet for offline purposes was in some cases linked to the fear of losing the money stored, because in contrast to cash, it is still a non-tangible representation of value. Also, like a physical wallet, a smartphone could be lost or stolen and the money would be gone. Some participants observed that, if they ran out of battery, they would not be able to pay. Others, particularly in the older age group, simply found the offline feature too complicated compared with cash.

“

What happens if I lose my phone? Do I lose the money? [Moderator: Yes, but realistically, how often does that happen?] To me it happens often. I've already lost it three times.

General population focus group, age 65+, female, Cyprus

A number of respondents in the general population were curious about the specific operation of this feature. They wondered what technology it would employ (e.g. Bluetooth, money stored on the chip), what amounts they would be able to transfer offline (a doubt expressed in virtually every country), and how to avoid contribution to tax evasion (Estonia).

“

Does this work via Bluetooth? You just need to put the phones close together and they communicate?

General population focus group, age 41-64, female, Italy

Underbanked

This group perceived offline payments as being the closest method to cash, and therefore somewhat relevant for them. Despite this, overall they did not see any particular advantage to using such a method. In general, there was an underlying fear related to the “non-tangible” aspect of the transactions. They worried about losing control of their expenses or losing the mobile phone they use to make payments.



There's too great a risk of forgetting about it. If the money is in your wallet, you can see it. This is digital; it's in a separate part of your smartphone.

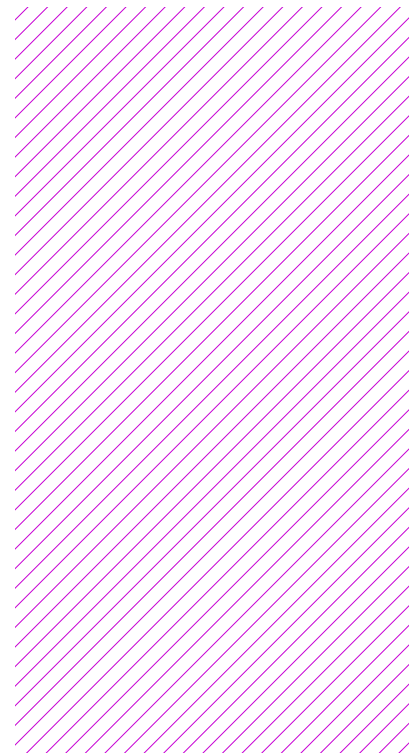
Underbanked in-depth interview,
age 41-64, female, Belgium



I like the idea that it works offline, but I still can't see an advantage for me.

Underbanked in-depth interview,
age 18-40, male, Germany

In some cases, offline payment was reported as a potentially interesting feature for younger users making small payments (€10-€20) in the event of limited internet connection. It was seen as safer than the online alternative, as participants had less fear of their personal information being hacked or being a victim of fraud. In other cases, participants expressed interest in the convenience and utility of the feature, perceiving it as useful in situations where people do not carry cash, to make small transactions and/or to ask for small discounts (e.g. in dealings with plumbers or handymen, or in restaurants).



Transaction history with option for limited data

The digital wallet offers users the possibility of not showing all their data when making a payment, keeping some transaction details hidden. Payments made using this function appear on the transaction history only with a transaction number and the amount paid. This keeps the consumer's name hidden from the payment recipient, and any account co-owners would not know to whom the payment was made.

General population

The general population did not particularly appreciate the option of hiding details in the transaction history, and most struggled to identify situations in which they would use it. Some considered the increased level of privacy of little advantage compared with the inconvenience of losing key information in the transaction history (only the amount of the transaction and a random reference would appear). They also did not consider the feature fully private, as the transaction would remain visible to any intermediary (i.e. banks). Generally only a small number of participants were interested in the feature as a way of increasing their privacy, while many considered hiding transaction details suspicious.



I will not be able to track what I have paid and to whom.

General population focus group, age 41-64, female, Luxembourg

Participants tried to imagine situations in which they would use the option of paying with limited details. The most frequently cited example was buying a present for someone (e.g. a partner) with whom they shared a bank account.



It's a good option for buying a gift for your husband: we have a joint account currently, and my husband knows who I bought it from and the amount.

General population focus group, age 41-64, female, France

Some appreciated the possibility of hiding their details from the receiver in specific circumstances, for example, when making purchases from non-trusted vendors (e.g. suspicious shops, flea markets or online shops), with whom they would not feel confident sharing their details. Others envisaged using the tool when making anonymous donations (e.g. to charities or political parties).

However, reactions were generally not very positive. Many respondents did not seem interested in having a greater degree of privacy, and some associated this desire with suspicious or illicit activities. Some participants worried that not showing all the details of transfers might have consequences for their mortgage applications, although one group member thought that not listing certain details might improve his access to loans.

“

Interesting, but from whom do I want to hide my payments? There could be situations when I would use this feature, such as buying something from a flea market.

General population focus group, age 18-40, male, Finland

“

Perhaps for charitable purposes, when donating money. Using such a wallet would introduce a greater sense of security.

General population focus group, age 18-40, female, Latvia

“

I would be afraid that someone would abuse it. After all, we have already experienced all kinds of things here with election campaigns and financing of political parties through seemingly anonymous donations.

General population focus group, age 41-64, male, Slovakia

The few participants interested in increasing their privacy were generally underwhelmed by this function, since it does not provide complete anonymity. They felt that any digital transaction would be easily traceable, and considered cash the only way to ensure complete privacy. In electronic payments the perceived privacy is generally very low or even non-existent. Only a small number of participants in some countries welcomed this function as a step forward in protecting their data, and some even wanted it to be enabled by default.

“

I think it's a good thing. Why do they need to know my name?

General population focus group, age 18-40, female, Cyprus

Tech-savvy

The tech-savvy's reactions to this specific feature were relatively more negative compared with other features of the digital wallet. Not many respondents seemed interested in disguising their name in the transaction history, either because concern about privacy – as previously reported – is relatively low in this group, or because they felt that simply not displaying their name would not necessarily entail a greater level of privacy (i.e. the transaction can still be traced). At the same time, many of the tech-savvy thought that not showing key information on the transaction history and bank statements would be inconvenient in practice.



This is like hiding something from myself!

Tech-savvy focus group, age 18-40, female, Latvia

In some countries, tech-savvy respondents appeared relatively more interested in increasing the degree of privacy offered by the digital wallet. Some saw the benefit of limiting the details displayed when making transactions to untrusted receivers, such as unknown or suspicious vendors. Others envisaged using it when buying presents, particularly if they shared an account with the recipient, although some observed that this situation would be quite rare. In Latvia, some tech-savvy participants suggested also introducing an option to hide details of past transactions, so that online statements could be edited a posteriori according to need. In Austria, some respondents thought the possibility of limiting the information shared was a positive development, even if it only applies to the payer's name.



Too much data is gathered in general, so I like the idea of limiting this

Tech-savvy focus group, age 41-64, male, Austria



It could be useful when you buy something while on vacation abroad and you do not really know your surroundings.

Tech-savvy focus group, age 41-64, male, Lithuania

In contrast, tech-savvy participants in Germany, despite being relatively more concerned about data protection than in other countries, were not impressed by this feature. Like a majority of respondents in every country, they tended to focus on its practical disadvantages, which they felt would in most cases offset its limited advantages. While it is possible to track transactions, participants generally do not believe in any privacy promises. They are well aware that electronic payments are usually recorded somewhere, making them trackable.

“

I am pretty sure the authorities will just pretend to have a reason to disclose my transaction details whenever they feel like doing so. This function is like a fake, when someone can come and just investigate the details.

Tech-savvy focus group, age 41-64, male, Germany

Many of the tech-savvy in every country felt it would be very inconvenient from the perspective of tracking their own expenditure not to see names on their transaction history.

“

I want to know where money or expenses are coming from.

Tech-savvy focus group, age 18-40, female, France

“

How can I prove the transaction if its details are hidden?

Tech-savvy focus group, age 18-40, female, Luxembourg

“

If I make five different purchases it will be complicated to know which is which.

Tech-savvy focus group, age 41-64, male, Austria

The tech-savvy in Luxembourg and Estonia seemed particularly uninterested in disguising their data and also focused their criticism on the inconvenience of not listing the recipient's name in the transaction history. In Luxembourg, participants imagined this would cause issues in the event of a dispute, while in Estonia some observed that omitting the payee's name on bank statements would make it more difficult for people to obtain bank loans, since it might hamper banks in the creation of credit ratings. This concern was not echoed by participants in Ireland, where some thought hiding certain expenditures from their bank would help them obtain a mortgage.

“

If I have a lot of private transactions, won't the bank question this? Maybe money laundering is going on if there are so many secret payments?

Tech-savvy focus group, age 18-40, male, Estonia

In Estonia, some also observed that it would be quite cumbersome to keep turning the function on and off. Some participants in Ireland said that if they had to set the function manually, they might easily forget to turn it off.



Photo by Jonas Leupe on Unsplash

Budget management

Users have the option to preload money from their bank account into the digital wallet. Alternatively, they can use the wallet without a balance, with payment money being deducted directly from their bank account. If they wish, users can set and manage a budget. The options below are possible.

Option one

If a user wishes to control their spending, they can automatically set aside a certain amount from their linked bank account each month and use this balance for all payments in their digital wallet. They can also set a minimum limit and receive an alert when their balance falls below it.

Option two

A user may choose not to pre-allocate any money to their digital wallet. When they pay, their digital wallet will deduct the amount needed directly from their linked bank account.

Option three

A user may decide to always keep a certain balance in their digital wallet. This provides a nest egg rather than serving a direct budget management purpose. In this case, the user may set up the digital wallet so that it is automatically refilled from their linked bank account to the pre-set balance after each payment.

General population

Participants thought the budget management feature was useful, although they had different judgements depending on their attitude to financial management. Despite seeming slightly less keen to use it than the tech-savvy, they appreciated the possibility to manage their budget, with younger people being more excited than the older generation.

In every country, the most popular option for budget control was the top-up feature (option one). Respondents found it an attractive, practical budget control tool, allowing people to monitor their spending patterns and adapt their behaviour if needed. Those who like to separate their expenses into different categories (e.g. food, clothes and leisure) saw it as a way of centralising all their spending for each category in one place. Many participants said they would value the ability to gain a clear overview of their spending and felt the tool would be helpful in preventing overspending and teaching people how to manage their funds, especially in the current climate of rising costs. They also thought it would be very useful to receive an alert once a certain limit is reached.



If you get a notification by the 15th of the month that you're almost at your limit, that'll be a sort of wake-up call. The good thing is that you can set your own limits and adapt them if necessary.

General population focus group,
age 18-40, male, Belgium



It's similar to having a prepaid card to control your spending; you can't spend more than what is available.

General population focus group,
age 41-64, female, Luxembourg



When you know you have on it the money you will need for the day, you feel safer.

General population focus group,
age 18-40, female, Cyprus



It helps to keep track of money and spending.

General population focus group,
age 41-64, female, Malta



It's a way to keep some money under control; a kind of virtual piggy bank.

General population focus group,
age 18-40, female, Italy

Those who valued budget management tended to find this tool relatively advanced compared with similar tools offered by other apps. Some participants mentioned that they had already adopted a system of budget allocation to help them in this respect.

“

I want to be in control, and this helps me to remain in control of my spending.

General population focus group,
age 41-64, female, Austria

“

It is good for controlling your expenses and your budget.

General population focus group,
age 41-64, female, Cyprus

“

Normally it is not possible to do that with your personal bank account. If it is possible to set it up that way, I would like it.

General population focus group,
age 41-64, male, Germany

“

Finally, I would be able to know how much money I spend every month.

General population focus group,
age 18-40, male, Greece

“

I already do this in the Millennium application. I have an x for the house, water, electricity and the rest is to be set aside. Then I have an x for expenses, dinner out, etc.

General population focus group,
age 18-40, male, Portugal

“

It's good if you want to divide the money that you're going to use each month. So if I only have €200 for leisure and I put it in the wallet, I can make sure that I don't spend more than that.

General population focus group,
age 18-40, female, Spain

However, a drawback of currently available budget management tools is that the associated payment solutions are not usually accepted everywhere. Consumers might need to fall back on an alternative payment solution, whose expenditures would not be captured by the budget management tool. In contrast, the digital wallet, with its pan-euro area acceptance, would allow all transactions to be captured in the allocated budget, which participants considered a major advantage.

However, others felt that managing their budget would be difficult with a mobile phone and would prefer to use a laptop for this purpose. Several older participants found the feature quite complex and argued that they would prefer simpler tools. A few respondents saw it as unnecessary for responsible adults who know how to spend their money wisely. Meanwhile, those who were not familiar with budget management struggled to understand the concept.



I would sometimes use my bank account to pay. Personally I feel that it's difficult to manage your budget through a mobile phone. I prefer to use my laptop and my online banking service, because there's a bigger screen and it's easier to see the numbers. So, if it's only app-based, I would not find it interesting for budget management.

General population focus group, age 18-40, male, Finland



It's a weird feeling to restrict myself to a specific budget I've set. I don't like the idea.

General population focus group, age 41-64, female, Germany

Consequently, the top-up feature was preferred over the option of an automatic refill up to a certain amount (option three), or automatically withdrawing money from the bank account (option two). Only participants in Finland preferred the automatic withdrawal option. In other countries, some considered it risky as it could result in them losing control over their spending. They said that if they used this option, they would need reassurance that their spending would not go beyond a certain sum. As a result, many respondents appreciated the alert function or proposed introducing a spending limit.



I want to pay for things and not have to think about funding before doing so!

General population focus group, age 41-64, male, Portugal

Most participants were not interested in setting up an automatic refill (option three) to provide a nest egg. They considered it impractical as it could give users the false impression that funds were magically appearing in their account. This could present a risk of overspending as they may lose track of the actual balance available in their bank account. Some participants noted that this top-up function could even lead to more spending, as a wallet that is always full could encourage more consumption than budgeting. In some countries, this opinion was more prevalent among older participants

who appeared more aware of budgeting challenges. One participant mentioned that it could be anxiety-inducing, as users may find it harder to keep track of their bank balance when constantly using digital money. The few participants interested in this option typically included people that either feared the prospect of finding themselves without money or liked to always have funds available in case of unforeseen circumstances.



When young people spend too much, it is no help whatsoever if the wallet is automatically refilled.

General population focus group,
age 18-40, male, Austria



It is almost described here as a fairy tale ... Money dropped into your bank account as if by magic. This can be really dangerous for people who don't know how to manage money.

General population focus group,
age 18-40, female, Belgium



I want it always full for anything that might come up.

General population focus group,
age 41-64, male, Cyprus



If you have €500 and you spend €20, it goes back up to €500 and finally you'll end up spending over €1,000 because you'll lose track of your expenditure.

General population focus group,
age 18-40, male, Malta

Participants suggested various improvements, highlighting the widespread interest in this function.

Proposed features included:

- introducing an easy and fast way to change the spending limit;
- providing the top-up feature on a physical card in order to make it more “tangible”;
- having the possibility to change the frequency of the top-up, e.g. for it to take place on a daily or weekly basis;
- providing the budget management functions through a laptop instead of a mobile device;
- providing a visual overview, e.g. through charts or graphs, of spending, to monitor where users' expenses go;
- offering the possibility to add an account for a child and teach them budget management through the digital wallet.



It could be a useful tool to manage a budget for children.

General population focus group,
age 41-64, male, Luxembourg

Tech-savvy

Reactions to the budget management functions were generally positive, making these tools some of the most appreciated by tech-savvy participants across the ten countries. They were considered a helpful way of keeping track of expenses, which most tech-savvy respondents seemed to find important. Specific opinions about the budget management function varied, depending on the respondents' personal attitude towards budget management.

While budget management tools are already integrated in some banking and payment apps used by the tech-savvy, participants saw the proposed functions as somewhat more advanced, in particular due to the wide acceptance of the digital wallet. Some suggested offering the possibility to categorise the items they spend money on, and later providing access to visual data comparing their spending on different types of products over time.

The tech-savvy most favoured the top-up feature (option one) and the option to automatically withdraw money from the linked bank account (option two). Which of these a participant preferred depended on their individual preferences for budget control. Those who liked to have tight control over their expenses (or their children's) tended to choose the top-up option. Those who preferred automatic withdrawal suggested they would still like to have some control over their expenses through an alert function. Some said they would like to choose for each transaction whether the sum should be taken from the pre-loaded budget or automatically debited from their bank account. The function of an automatic refill from their bank account so that a specified balance is maintained (option three) faced criticism from some of the tech-savvy, who felt that their spending would be more difficult to control if no money appeared to "leave" their digital wallet.



The warning about approaching the limit is convenient.

Tech-savvy focus group, age 41-64, female, Lithuania



I would use it to separate the money I spend on leisure activities from my bank account to know more easily how much I can spend to treat myself.

Tech-savvy focus group, age 65+, female, Luxembourg



The best option would be to have the choice between option one and two each time you make a transaction: whether you want to use the amount available in the digital wallet or simply use it as a means of payment without debiting the money inside.

Tech-savvy focus group, age 41-64, male, Luxembourg

“

I wouldn't want the balance to refill automatically. A lot of people are living week to week. The cost of living is rising and it's too easy to just spend.

Tech-savvy focus group, age 65+, female, Ireland

Only a few of the tech-savvy in Germany and Austria rejected the budget management tools entirely. While younger participants from those countries appreciated it, some older participants considered cash the best payment method if they want to have strict control over their expenditure.

“

In my peer group many friends use functions like that. For me it's completely fine to manage my budget digitally.

Tech-savvy focus group, age 18-40, female, Germany

“

When I have it in cash, I can touch it and literally see when I spend it and there is less in my wallet than before.

Tech-savvy focus group, age 41-64, male, Germany





Photo by naipo.de on Unsplash

Conditional payments

The digital wallet can be used to make two kinds of conditional payments: payment on delivery and pay-per-use. With payment on delivery, when a customer places an online order, the payment can be programmed to take place only once the item's delivery has been confirmed by the delivery service. With pay-per-use, a customer pre-authorises a payment since the final amount of the purchase is unknown in advance (e.g. renting a car). This reduces the risk for merchants since they are assured that the customer has sufficient funds to pay for the service. If the payee does not confirm and the payer does not provide the corresponding authorisation after a certain period of time, reserved funds are released and the pre-authorisation is cancelled.

Tech-savvy

Tech-savvy participants had very different reactions to payment on delivery and pay-per-use. While the first caught their attention and most could relate it to practical payment situations, the second left them more confused and questioning its concrete application.

Respondents in most countries saw payment on delivery as a useful tool. In Estonia, some of the tech-savvy seemed familiar with this service, as it is already offered by various e-shops in the country. In general, most of the tech-savvy across the ten countries had a slightly positive opinion of the function.



The delayed payment is good: when you buy on second-hand websites or apps [such as those where users can buy or sell second-hand clothing], it would allow you to be sure you've received the right product.

Tech-savvy focus group, age 18-40, female, France

Despite this, their comments did include some doubts and criticisms. Some participants considered the legal guarantees that are already provided by most vendors in the case of faulty products as sufficient to insure them against fraud, and so did not see the utility of payment on delivery. In fact, they saw the current legal guarantees or a merchant's refund guarantee as even safer, since they allow the consumer to take their time to check the product and ask for a refund if the item does not match their expectations.



So, for example I have ordered an iPhone. The courier delivers my package, scans something and my money is taken. Then I open the package and there is a brick inside.

Tech-savvy focus group, age 41-64, male, Latvia

Some also expressed concern that the payment on delivery function would only work with big or medium-sized sellers, while it would be more difficult for smaller sellers to consent to the use of such a function. Particularly in Lithuania, there was a view that this function would be unattractive for most sellers and would only benefit consumers. Some respondents in this country also feared the disputes that might arise between seller and buyer around the product delivery.



It will be very inconvenient for the seller if the payment is uncertain.

Tech-savvy focus group, age 18-40, female, Lithuania



Certain businesses might not survive if they only get paid when they deliver.

Tech-savvy focus group, age 65+, male, Ireland

Reactions to the pay-per-use function were significantly more mixed, or even negative, generating a shorter conversation compared with the one around payment on delivery. Participants seemed confused by the functioning and concrete application of this tool, even in countries where similar strategies have already been put in place. In the Baltic States and France, for example, multiple respondents claimed that pay-per-use options are already available at petrol stations. Both here and even more so in countries where these options do not exist, or are less known, most respondents struggled to see where the pay-per-use function would be useful, except for at petrol stations or when renting a car, for example.



It could be useful, but very rarely.

Tech-savvy focus group, age 18-40, male, Latvia

In France, the tech-savvy noted some drawbacks of pay-per-use systems, namely that the total amount initially debited from their account stays blocked for a prolonged time and shifts their balance to negative, which hinders them from processing other transactions. To avoid this, they would like only the money used to be debited and the other funds to be unblocked as quickly as possible.



With pay-per-use, there are some petrol stations that take the maximum possible amount and only give it back after quite a long time. And it's annoying because if you need the money right away, you go negative for a day. If it could put on hold only the money used, it would not be bad.

Tech-savvy focus group, age 18-40, female, France

Merchants

Merchants had different perceptions of payment on delivery across the different countries. Merchants in Finland and online merchants in the Netherlands, took a positive view of this feature. In contrast, Dutch offline and hybrid merchants were somewhat more hesitant, expressing worry about the risk of customer fraud. Merchants from several other countries were particularly unenthusiastic, feeling that they would be left unprotected in the event of problems with the delivery process.

Those who took a positive view of this feature generally felt that it could result in less work when managing payments for products that get lost and do not reach the client. They also noted that it could help detect mistakes in warehouse accounts in the event of a product not being sent despite being purchased, which would make the system easier to use. In addition, they thought it could help prevent identity theft, since a criminal would no longer be able to use someone else's details to order an item to an address where they could pick it up without paying. Ultimately, they believed customers might have increased confidence that they would receive a product purchased online if they were able to pay on delivery, which would boost their trust in online stores. Since bad experiences with delivery of products are often a barrier to shopping online, offering payment on delivery may encourage those who would otherwise not be open to it.



In a way it would also be the seller's guarantee. If the client orders something and there is a mistake in the warehouse, it is always complicated and time-consuming to sort it out and return the money to the customer. It would be fair play to both parties to pay on delivery.

Merchants focus group, age 41-64, female, Finland



It would stop cheaters, such as if someone steals your identity and orders an item for themselves, with the invoice going somewhere else. And then you are in trouble with the payment, as the customer claims never to have ordered anything.

Merchants focus group, age 41-64, male, Finland



I feel it would offer a better service to clients if payment took place on delivery.

Merchants focus group, age 41-64, female, Finland



The positive side could be the increased consumer confidence, which would mean you could get more business. Today when confronting a bigger player like Zalando, everything is sorted out in the end, but it takes time and effort to find out where the product really is.

Merchants focus group, age 41-64, male, Finland



I think customers will be happy with it. I find it an interesting idea to pay only after receipt.

Merchants focus group, age 41-64, male, Netherlands

Although the merchants consulted in Spain agreed that payment on delivery may encourage some customers to place increased trust in online shopping, they argued that few people are wary of online shopping nowadays, and that the advantages therefore do not outweigh the risks. They felt information should be provided to merchants about their rights and the protective measures in place to prevent customers abusing the system.

While fully online merchants welcomed the payment on delivery feature, offline and hybrid merchants in the Netherlands were more hesitant, expressing concerns about the risk of customers falsely claiming that a product has not arrived in order to avoid payment – a concern also shared by French merchants.

In general, a number of merchants were less open to using this feature and had more questions about it. In particular, they felt that while it offers more protection to the buyer, it exposes the seller to greater risk in terms of payment being withheld until delivery, potential costs generated by incidents during the delivery process, or the buyer backing out of the purchase while the products are being delivered, leaving the merchant to cover the courier costs. Merchants in Finland also expressed concerns about postage costs if an item is delivered but has not been paid for. On this note, merchants in Slovenia said they are often faced with customers who do not pick up their orders from the post office, generating extra costs for the retailer. Merchants in Germany did not like the idea of sending products to customers without the assurance that they were solvent or that the delivery process would run smoothly. They also argued that involving the delivery service in the payment process could be complicated and may lead to extra costs and longer delivery times as packages could not be left with neighbours. This, in turn, would delay payment being made. If a mistake is made by the delivery service, this would create considerable

work for the retailers in finding the product and getting paid. For this reason, some merchants in the Netherlands proposed a system closer to that offered by Klarna, where the payment is released to the merchant once the product is processed by the postal service.

“

People regularly say that they didn't get [their package], but then I see that it was delivered. I see people trying to get their products for free. Customers are just playing tricks. Then you have to consult with the shipping company and that takes time.

Merchants focus group, age 41-64, female, Netherlands

“

But what about the delivery cost? Who pays for it? It would be fair for the client to pay for it one-way. Then it would not be at the seller's risk if the client doesn't pick up the purchase.

Merchants focus group, age 41-64, female, Finland

“

You are left without goods and money, at least for a while.

Merchants focus group, aged 41-64, female, Slovenia

“

When Amazon delivers, they leave it at the door, or in the lobby or reception or whatever. How would you confirm that it's been delivered to the correct address?

Merchants focus group, age 41-64, male, Ireland

The majority of merchants had not previously heard of the pay-per-use function, and therefore had difficulty understanding how it could be applied to their businesses. However, Finnish merchants mentioned that a pay-per-use function was already being used in their country for services such as hotel stays or buying petrol and they were therefore familiar with the concept. Along with most of the merchants in France and Spain, they had a positive reaction to this feature.



Well, there is already a system when you buy petrol in Finland, where there is a “hold” on a certain sum. It is corrected once you have finished filling your tank.

Merchants focus group, 41-64, male, Finland

Merchants found that it would make the payment process smoother and give them more security. A key advantage they mentioned was that since it facilitates the management of automatic payments, it also encourages customer loyalty in businesses operating on a subscription model. Some merchants also noted that this payment method may reduce uncertainty in their businesses, as a certain amount of revenue would always be guaranteed.



It feels like a safer option. All actions that increase confidence in payments are great for business.

Merchants focus group, age 41-64, male, Finland

However, merchants saw these benefits as specific to a certain type of business, and did not perceive the pay-per-use function as an interesting option for walk-in businesses. Given their lack of experience with such a feature, Dutch merchants said its attractiveness would depend on the market and specific field. Merchants in Germany, Ireland and Slovenia did not fully understand its advantages, and said they would require more information and a detailed explanation of the process in order to avoid confusion. Those in Germany were especially concerned about the need to store customers' personal data, which may require special data protection conditions.



At what point do you pre-approve it? Say I go to the petrol station, am I pre-approving it that day or is it pre-approved before that?

Merchants focus group, age 41-64, male, Ireland



Photo by Christiann Koepke on Unsplash

Merchant dashboard and pay-out management

In the merchant focus groups, several options for pay-out management using the digital wallet were presented.

- An instant pay-out option where each individual payment made with the digital wallet is credited instantly to the merchant's bank account. Simultaneously, the pay-out for other accepted payment methods is handled as per current practice (i.e. grouped and paid one or two days after, or later, depending on the agreement with the payment acceptance provider).
- An aggregated pay-out in which all digital wallet payments from one day are aggregated by the payment service provider and transferred to the merchant as a single pay-out at the end of that day. The pay-out for other accepted payment methods is handled as per current practice and transferred separately to the merchant.
- A comprehensive aggregated pay-out whereby all payments with all payment instruments are grouped into a single daily pay-out.

Use of web/mobile dashboard to monitor payments

Most of the merchants valued having a clear record of their sales to ensure optimal management of their accounts and were already using a dashboard for this purpose, supplied by their payment service providers. Some merchants were not familiar with the use of dashboards and kept track of their sales and revenue through other methods.

Those using the dashboard service provided by their bank (Spain) expressed a high level of satisfaction with it, explaining that they could easily see the transaction totals, with earnings being transferred to their account in a timely manner. Similarly, merchants relying on dashboards from other providers or creating their own spreadsheets for this purpose were satisfied with the systems they currently use and the level of granularity provided by the data, including daily transactions, profits, sales by categories, stock, etc. They said they were therefore unlikely to switch to a new provider in the future. However, a number of merchants showed great interest in a new comprehensive system that would display all their payment actions, despite already actively using dashboards to monitor their cashflow.

“

We don't need a new one; everything is working really well. There is much information [online] if you want to look into it.

Merchants focus group, age 41-64, female, Finland

“

Through the Mollie [a payment service provider] website or the app, we are able to see how things are going.

Merchants focus group, age 41-64, male, Netherlands

“

It's online and very easy to navigate. It depends on the tax programme: we have one that includes accounting so you can see daily profits and so forth. It's a bit difficult to learn to use it really well, but once you master it, you have access to a lot of important data.

Merchants focus group, age 41-64, female, Slovenia

Perceptions of instant pay-out through the digital wallet

Merchants regarded immediacy as the main advantage of instant pay-out, giving them an impression of security and immediate liquidity. They also valued being able to easily spot the link between specific payments and their respective invoices. This option was seen as mainly relevant for smaller businesses, where cashflow and liquidity are greater concerns.

“

The more immediate, the better.

Merchants focus group, age 41-64, male, Spain

“

I think if it was a pretty small business and we wanted to get access to [money] as it comes through, maybe [instant pay-out] would be beneficial.

Merchants focus group, age 41-64, female, Ireland

However, many merchants were concerned about the cost of this option, due to the pricing models they usually have with their payment acceptance providers where they are billed per pay-out. As a result, they usually collect transactions in a batch and initiate the pay-out once per day to reduce costs. They were worried that having every single transaction paid out individually would be very expensive, and saw it as a trade-off between fast receipt of payments versus the costs associated with multiple transfers. Some felt that a system of instant pay-out could be very confusing and result in having too many payments to register, stating that they did not mind receiving their payments one working day later since they could monitor everything through their dashboard anyway. Several merchants also pointed out that they would not have time to track every single transaction if they used an instant pay-out system.

“

The money is transferred directly, like PayPal – yes, not with the credit card delay!

Merchants focus group, age, 41-64, male, France

“

Of course, having the money immediately is much better, but it depends on the cost.

Merchants focus group, age 41-64,
female, Italy

Overall, despite some limited interest in the instant pay-out method, particularly in Spain, Italy, and to a lesser extent the Netherlands, merchants were happy with the pay-out frequencies they receive currently and showed a preference for obtaining more aggregated data.

“

It's just a question of final costs. I mean option A [instant pay-out] is the best one, but it's a trade-off between its price and the others.

Merchants focus group, age 41-64,
female, Italy

“

The option of pay-out for each payment means a lot of lines on the dashboard. To get it once at the end of the day sounds more logical; we have things to do during the day other than watching numbers!

Merchants focus group, age 41-64,
male, France

Perceptions of aggregated pay-out through the digital wallet

Merchants were rather divided, both across and within countries, in their preference for either an aggregated pay-out at the end of each day for payments through the service provider or a comprehensive aggregated pay-out for all payment instruments one or two days later. The majority of merchants found a daily aggregated pay-out the most appropriate for their business needs. This option was most popular because it appeared easier and simpler to use compared with receiving each transaction separately. In addition, merchants thought it would provide timely liquidity without causing confusion.

“

[Instant pay-out] would be total chaos, with way too many payments to register. The second choice would be the most appropriate one.

Merchants focus group, age 41-64, male, Finland

“

Now, I get money from Stripe every two days. But if I could, I would definitely prefer to get it every day, so I have access to the money and a better overview.

Merchants focus group, age 41-64, female, Slovenia

“

I would choose [an aggregated pay-out at the end of each day], because then you quickly have the payments in your bank account. With the other methods you don't get them until later.

Merchants focus group, age 41-64, male, Netherlands

Several merchants said they would appreciate a single daily pay-out of all payments even one to two days later. They stated that they did not mind waiting a day or two to receive their earnings and that their dashboards provided the information they need.

“

At the moment I am already using [an aggregated pay-out after a couple of days]. The payments arrive grouped the next day and that also works fine for the bookkeeper.

Merchants focus group, age 18-40, male, Netherlands

“

I worry what this would entail in terms of accounting. Even now, I try to put transactions in bundles in order to have as few expenses as possible. I have an online store, so I know exactly how much money I am making each day. So I don't see the advantage in getting the money every day.

Merchants focus group, age 41-64, female, Slovenia

Particularly in Ireland, merchants said it was important to avoid complications with any new system, so they would like the pay-out method to align with their current payment administration. This usually meant they preferred a single pay-out after a few days. They felt this would represent the least amount of extra work since it replicates the interval and approach of the systems currently used.

“

As long as the money arrives with you at the same time, it doesn't really matter too much if it takes a day or two.

Merchants focus group, age 18-40, male, Ireland



Photo by Mika Baumeister on Unsplash

Annex – country-specific summaries



Austria

Perceived advantages

Digital payment methods are becoming increasingly common in Austria. Participants saw this as an inevitable development that they would eventually embrace, although many would prefer not to be early adopters. Younger participants were more enthusiastic about a new digital wallet.

Among the tools proposed, P2P payments generated the highest interest. Even though real-time payments are already provided by other payment providers, focus group members saw the possibility of sending messages through the payment interface as a novelty.

Most participants appreciated the budget management function, and praised the possibility of setting up customised individual categories to track their spending. They mentioned the option to receive spending alerts as one of the most innovative features.

Participants recognised offline payments as a unique feature to the digital wallet, although many said they would not use it very often.

Some respondents were interested in payments on delivery.

Participants were generally critical of the transaction history with option for limited data, although some recognised that it would be useful when buying products from untrusted sellers.

Overall, participants were not particularly concerned about security.

Perceived disadvantages

Although Austria is still lacking a main digital payment player, the number of digital payment options already available on the market is quite high. Because of this, many participants feared that a new digital wallet would struggle to be widely adopted unless it was convenient, safe, and equipped with some innovative features.

Some of the features described are similar to other digital payment tools and may not be sufficient to convince participants to adopt the digital wallet.

While some of the additional features interested the participants, others left them relatively unconvinced. This was the case for QR-code payments, which participants felt would be time-consuming and complicated. They also criticised the transaction history with option for limited data, as the disadvantages of hiding one's name from the transaction history would outweigh the potential benefits in terms of privacy.

Regarding data protection and privacy, participants struggled to consider the digital wallet as an alternative to cash, and said it would not provide the same degree of privacy.

Unclear elements

Participants in Austria generally found the pay-per-use feature unappealing, because most of them could not envisage when it would be used. They also questioned the applicability of the transaction history with option for limited data, given the importance of displaying certain details on specific occasions (e.g. when reclaiming a payment).



Belgium

Perceived advantages

Overall, respondents in Belgium considered the digital wallet a useful payment solution that would allow them to transfer money anywhere in the EU without paying any extra fees.

Participants in the focus groups appreciated the classic features offered, such as P2P payments. They also considered QR-code payments a necessary tool to include, even though they would use them rather infrequently.

In addition to the more classic use of payment transfers, Belgian respondents judged the digital wallet a useful tool for budget management, thanks to interesting functions such as the alert when a spending limit has been reached. They said that if they were to consolidate all their payments from different bank accounts in a single app, this would be a useful way to manage their spending.

They considered offline payments a relatively innovative feature, although many felt the poor traceability of offline transactions was a disadvantage rather than an advantage.

Perceived disadvantages

Some judged transfers via telephone number a less secure way of sending and receiving money.

Many thought that the instruments currently available on the market already offer most of the features included in the wallet.

Although respondents took a relatively positive view of the budget management tools, they were concerned that automatically linking the digital wallet to the bank account, and particularly automatically refilling the wallet, might cause users to lose track of their spending.

Unclear elements

Respondents in Belgium questioned whether using a phone number in money transactions, and facial recognition technology to approve transactions and make QR-code payments, would entail a loss of privacy and security. Some would like to be offered different authentication methods to process transactions and approve payments.

Expectations

Belgian respondents would appreciate the option to also pay outside the euro area.

Some participants said they would like the digital wallet to include investment tools. Others thought providing insurance solutions, such as for travel tickets, would be a useful add-on, and mentioned that this feature is already included in other payment apps (e.g. Revolut).

Some mentioned it would be useful to be able to link a prepaid, rechargeable card to the digital wallet, for budget management purposes



Cyprus

Perceived advantages

Participants in Cyprus, particularly in the younger age groups, showed a certain amount of interest in the digital wallet. They saw it as a more effective, secure way to carry out transactions within the euro area, and felt it offered some new functions compared with existing payment apps (e.g. offline payments).

They welcomed the option of making offline payments, seeing them as a useful instrument in situations where there is limited or no internet connection.

They also considered the payment request function relatively innovative and a useful tool for professionals who need to request payments from multiple clients.

Participants praised the budget management tools and considered them useful instruments to control their spending.

Perceived disadvantages

The idea of using the offline function as a substitute for cash was met with scepticism. Participants did not consider storing money on a digital app equivalent to holding it in cash.

With the exception of those interested in increasing their privacy, respondents generally had little interest in the transaction history with option for limited data: although they recognised it as a novelty, they could not imagine using it often.

Some were also concerned that both the offline function and limited transaction history could favour illegal activities such as tax evasion.

They saw QR-code payments as an easy way to pay in specific situations (e.g. in shops without physical vendors), but overall judged them as relatively complex for people with poor IT skills.

Some participants saw the option to integrate the digital wallet in their banking app as inefficient.

Unclear elements

Regarding the standalone solution, respondents in Cyprus asked who would provide IT support if the digital wallet stopped working, or if a user experienced issues with specific functions.

There were various doubts about the feature allowing transaction details to be hidden from bank statements, with some participants asking if they would be able to use their bank statement as proof of payment, and others debating whether this feature should be set up by default or not.

Expectations

Respondents mentioned they would like the possibility to make transfers to individual bank accounts (and not necessarily to digital wallet users), as well as to link multiple bank accounts to the digital wallet.

Some said they would appreciate an option to set up regular payments to company accounts, for example to pay utility bills.



Estonia

Perceived advantages

Respondents in the Estonian focus groups were largely accustomed to using digital payment methods and often compared the digital wallet features with those already offered by other methods of payment. They were generally curious and willing to try out a new digital payment solution that can be used across the euro area without any fees.

Participants saw the possibility of paying offline as the most innovative feature, although felt having to turn it on and off manually would be cumbersome. They thought it would be useful when paying in places with a limited internet connection, such as in rural areas.

Perceived disadvantages

As users of other payment apps, many respondents in Estonia struggled to see the added value of the digital wallet. They did not find its features particularly innovative compared with what is currently available in the market.

Participants questioned the usefulness of some features, such as the transaction history with option for limited data. Some felt the option of processing transactions offline already provided additional privacy, and thought it would be inconvenient to hide key information from their bank statements. They also worried it could reduce their chances of getting house loans.

Most participants considered QR-code payments relatively slow to use, and said they would be unlikely to use them in many situations.

Despite appreciating their usefulness, they felt the budget management features were not particularly innovative, since current banking apps in Estonia are quite advanced in this area.

Unclear elements

When it came to the offline payment tool, participants feared they might lose the money stored if their phone was lost or stolen.

They were curious about how transactions would be made using a telephone number. For instance, they were unsure how the number would be linked to the digital wallet account.

Expectations

Respondents would expect to have a choice between different methods of authentication, not just facial recognition.

As regards transactions, they would like to have the option to send money by other means than a telephone number. A number of participants claimed they would not always have the other person's phone number to hand.



Finland

Perceived advantages

Merchants in Finland were very fond of offline payments, conditional payments, and the presented dashboard and pay-out management methods.

Merchants saw offline payment methods as simple and fast, and particularly appreciated them during the pandemic as they do not require users to touch a device. They thought that this fast payment method would contribute to shorter queues, resulting in happier clients and more business.

They also considered conditional payments very useful. Despite already having dashboards to track their payments, they were eager to hear more about the new option, and said it would be highly attractive if it consolidated all payments received within one information source.

Participants were also very positive about pay-out management. The most attractive alternative was “aggregated pay-out, same day”, as the instant pay-out would cause too many payment entries. Since many credit companies currently pay with a delay of one to two days, merchants said they would be very pleased to receive payments on the same day.

Participants preferred not to load a separate balance onto their digital wallet, and to instead have money deducted directly from their linked bank account each time they make a payment through the digital wallet.

They thought the function of requesting payments represented some added value compared with existing tools.

Perceived disadvantages

Participants were not interested in P2P payments, as Finland already has effective, frequently used systems for payments between friends.

QR-code payments were seen as slow, complicated, and requiring too many steps. In comparison, digital payment methods appeared quicker and simpler to use. Participants also expressed concerns about security issues when scanning a QR code compared with paying by card. Merchants were unhappy that they would potentially need to purchase a new device to scan QR codes.

Participants did not show much interest in the transaction history with option for limited data, indicating that they preferred to use MobilePay when purchasing from new vendors they may not trust. Since most Finnish couples have separate bank accounts, the idea of hiding a gift purchase from a co-account holder was not convincing. Participants said they trust their banks and claimed to have no need to hide their transactions.

Only merchants found offline payments attractive: most participants felt that the kind of small payments associated with this feature could be taken care of by cash. However, the focus groups were held at a time when the Finnish authorities had announced possible electricity blackouts and were consequently recommending carrying extra cash.

Participants were not very enthusiastic about the budget management options. They would prefer to check their budget using a computer rather than a digital wallet or smartphone.

Unclear elements In the case of payment on delivery, respondents questioned who would cover the postage if an item did not reach the customer. They mentioned that a potential solution would be for the customer to pay for one-way postage at the time of purchase.

Expectations Participants mentioned that the option to combine different loyalty or bonus schemes within the digital wallet would bring added value. They felt the digital wallet could represent something modern and new in other countries where digital payment solutions are not as common.



France

Perceived advantages

Participants in France highlighted the potential of the digital wallet as the only tool that would be available everywhere in the euro area. Many felt widespread use would be key to its success, and anticipated it becoming a more permanent payment solution than the ones that are currently available.

Respondents praised the easy process of setting up the digital wallet and said this increased its accessibility. They also noted that the absence of fees improved affordability and said the wallet was easy to use from a security feature perspective, taking a positive view of face ID.

Participants considered other features useful, but only in specific situations. For example, they said they would mostly use offline payments when they did not have an internet connection. Some also noted that offline payments would be inherently more private, which would potentially convince users concerned with privacy to switch to a digital wallet. Similarly, respondents thought QR-code payments would be useful in situations where no cash register or pay points are available, such as at a restaurant table or on a bus.

Some found payments on delivery appealing for their increased consumer protection, but those who do less online shopping considered them less attractive.

Perceived disadvantages

Participants did not consider the features currently offered by the digital wallet sufficiently innovative to trigger its widespread adoption. For example, QR-code payments were already well known and some participants found them tedious to use.

There were concerns that the payment request feature might carry the risk of scams, i.e. receiving unwanted requests from unknown people. Many merchants were strongly opposed to the option of payment on delivery.

Unclear elements

Many participants were unsure whether the money stored in the digital wallet for offline use would be secure or at risk if a user's phone were stolen or lost. This is an important aspect of the offline function, and of the digital wallet in general, that should be clarified.

Expectations

Some respondents would like the digital wallet to include other tools so that it could function as an actual wallet: for example, features that enable documents, vouchers and forms of identification to be stored.

Participants expected to be able to use the digital wallet both as an interface to make safer payments from their bank account and as a virtual wallet where they could preload a balance.

Finally, despite finding the current security and validation measures easy, participants said they would like to be able to validate their payments in several different ways, including but not limited to face ID. Fingerprint recognition was one of the validation procedures mentioned.



Germany

Perceived advantages

Participants liked the idea of being in control of their data. The security of the digital wallet appealed strongly to them and increased their trust in the various features.

German participants tended to have more confidence in features that are already widespread in the market, while they were more uncertain about innovative tools.

In particular, merchants found the idea of receiving money directly and without extra fees very attractive and felt it represented a considerable advantage over existing digital payment methods.

Some respondents found the offline payments feature helpful for situations with no internet connection, or in circumstances where people fear losing their wallets.

Participants were also generally positive about payment requests. They found the use of a telephone number for this purpose convenient and appreciated the option of only sending part of the requested amount. Younger participants were particularly enthusiastic.

Younger focus group members also appreciated the option of loading a fixed monthly budget onto the digital wallet and receiving an alert when the balance falls below a certain threshold.

Perceived disadvantages

Participants in Germany are particularly fond of using cash, and were therefore suspicious of many of the digital wallet features from the perspective of data security and payment tracking. However, younger participants were more open to them.

Some also felt that having an additional app or digital wallet on their phone could be stressful and overwhelming, and preferred the integrated solution.

Some functions appeared more complicated than those already on the market, such as QR-code payments that require significantly more steps than contactless payments via card or cash. Retailer-scanned QR-code payments also sparked data security fears.

Participants did not appreciate the transaction history with option for limited data, feeling it would prevent them from keeping track of their transactions and seeing where they spent their money.

Some considered payment requests rude and preferred to have a direct conversation.

There was a lot of resistance to the conditional payment functions, as participants thought they presented a risk of losing control over their payments.

Most older participants did not understand how the budget management options would be helpful.

Unclear elements

Many participants were suspicious about the presented features being provided free of charge, and thought that instead of payment, the tool's provider would use their data to generate revenues.

Participants wondered how easy it would be to track their transactions and whether someone else could gain access to their digital wallet.

They were unsure what the advantages of some presented functions would be compared with what already exists in the market.

Expectations

Participants would appreciate being able to use the digital wallet outside the euro area.

They valued secure transactions and would welcome back-ups such as buyer protection as an additional function.



Greece

Perceived advantages

Members of the Greek focus groups, particularly the younger cohort, welcomed the digital wallet as a new payment solution that would allow them to pay everywhere in the euro area without incurring extra costs. They particularly appreciated certain features, such as QR-code and offline payments.

QR-code payments were judged easy and quick, especially in certain situations (e.g. petrol stations, restaurants and supermarkets), which differentiates Greece from the general opinion expressed by respondents in other countries.

Respondents found offline payment a distinctive characteristic of the digital wallet and welcomed it. They felt the option of paying offline would help attract new users, since it would allow payments to be processed even in remote areas.

Other tools, such as P2P payments and payment requests, were generally appreciated, particularly by younger participants. The transaction history with option for limited data was generally considered interesting, although less appealing than the other tools mentioned above.

Perceived disadvantages

Respondents in Greece displayed a certain mistrust towards digital transactions, mostly due to the fear of fraud. Older participants were particularly likely to have concerns about digital payment methods.

Despite this, many felt the existence of other digital payment apps would limit adoption of the digital wallet, because they are already quite popular among the younger population in Greece. Various participants expressed the feeling of being overwhelmed by the excessive number of digital payment options.

Some participants feared that the feature allowing transaction details to be hidden would favour illegal activities, particularly tax evasion.

Unclear elements

There was a lack of clarity about whether both the sender and recipient of a transaction would necessarily need to have the digital wallet installed on their phones to process the payment.

When it came to the transaction history with option for limited data, participants would like more information on what would still be disclosed to the bank and other intermediaries.

Expectations

Multiple participants thought the digital wallet would need to include incentives (e.g. reward programs, discounts and offers) in order to convince more people to adopt it.

In contrast, other respondents expressed a desire for a more minimal wallet, which would only allow simple transactions to be processed and would closely resemble cash in terms of its possible uses.

Some participants mentioned they would expect transactions made in international currencies to be automatically converted to euro when using the digital wallet outside the euro area.



Ireland

Perceived advantages

Participants in Ireland were accustomed to using other digital payment methods, particularly Revolut. During the discussion, they often compared the presented digital wallet to Revolut.

While most of the features did not appear particularly innovative compared with those offered by existing payment apps, some stood out as relatively new or more advanced.

Participants generally welcomed offline payments in particular, seeing them as a novel and practical solution.

While the payment request tool is also available as part of other payment instruments (such as Revolut), participants judged it to be better integrated within the digital wallet interface than in the interface of other payment apps.

Perceived disadvantages

Participants largely found the transaction history with option for limited data uninteresting. Unlike in other countries, where respondents feared that disguising their transaction details might affect their chances of obtaining a mortgage from the bank, some participants in Ireland thought it might help them to secure a mortgage. However, in most cases they did not see this as a valid reason to use the feature.

Most respondents could not imagine a situation where they would use the pay-per-use feature and therefore found it rather irrelevant.

They were also not enthusiastic about QR-code payments, considering them quite cumbersome and unnecessary in most circumstances.

Unclear elements

Some feared that, if the digital wallet were too strictly linked to a user's bank account, many people would assume that digital wallet transactions would incur the same fees as bank transactions. Respondents in Ireland felt it would be important to stress that digital wallet payments would not involve any transaction fees.

Expectations

Participants in Ireland would appreciate it if the digital wallet could be used outside the euro area, therefore including transactions within the United Kingdom. Many focus group members felt close to the United Kingdom, having relatives or friends who live there, and therefore regularly processed payments or transactions in pound sterling.

Participants wanted an option to make contactless payments via near-field communication (NFC) technology within the digital wallet.

They said the QR-code function would need to be adapted for restaurant bills by adding an option to leave a tip.

Among those more accustomed to online shopping, there was a certain amount of interest in payment on delivery, which they felt would need to be implemented in a simple and user-friendly way to be effective.



Italy

Perceived advantages

Participants in Italy were familiar with digital wallets and found some of the presented features innovative, such as offline payments and the transaction history with option for limited data. In general, they thought the features seemed easy to use and a smart way to manage everyday expenses. Most of the merchants consulted in Italy do not currently accept digital payment methods, but were open to adopting them, especially if the associated fees are low.

Respondents were quite impressed by offline payments, viewing them as a real novelty.

They were very positive about P2P payments, judging them quicker, easier and more convenient than bank transfers but also more secure than credit cards.

They were also keen on the option to request payments using a contact's telephone number, finding it easier and faster than other methods such as IBAN or email.

Merchants thought retailer-scanned QR-code payments would be useful, judging them more practical, easier and faster than customer-scanned ones. They thought they could become the future of digital payments, although they are not as fast and smooth as NFC payments.

The budget management options were seen as a very flexible tool, with possibilities to suit everyone's needs. Most participants preferred to set a fixed amount in the digital wallet to be used each month, as this would help them keep track of their spending.

Italian merchants generally preferred an instant pay-out option for each individual payment, as they considered being paid immediately a plus.

Perceived disadvantages

Many underbanked participants thought mobile payments would be less secure than transfers made through a computer. Merchants' main barriers to adopting new payment methods were fees, set-up procedures and their own limited technological knowledge.

Although participants were positive about offline payments, they disliked the fact that losing their phone would mean they would lose the balance set aside for offline payments.

Although they saw it as innovative, participants did not find the transaction history with option for limited data useful and claimed they would rather use cash in situations where they would not want their payments to be tracked.

Keeping the digital wallet constantly funded or automatically refilling it seemed too risky, as participants preferred to see how much money they had available to spend.

Unclear elements

Participants would have welcomed a clearer presentation of the factors that differentiate the digital wallet from existing payment solutions.

They were also curious how offline payments would work and what kind of technology would be used to make them happen.

Expectations

Focus group members felt that the digital wallet had potential, on the condition that it would have no fees and become a widespread method of payment that is accepted everywhere.

They also thought it would be very interesting if commercial banks automatically offered a digital wallet for free as part of their services, in addition to regular home banking. It could then become a standard way for everyone to send or receive money, with no need to install other apps.



Latvia

Perceived advantages

Participants in Latvia saw the digital wallet as a useful instrument. They felt that its acceptance across the euro area, coupled with the absence of fees, would make it a good solution for cross-border transactions. However, its success would strictly depend on its capacity to attract new users.

Focus group members found that the wallet would also work well as a tool to manage expenses from different bank accounts.

They felt that offline payments clearly stood out as a radically different feature from those currently offered by other payment providers.

Perceived disadvantages

Some respondents expressed concerns about using face ID as an authentication method, which also reflected wider worries about privacy.

The focus group also discussed their fears that people would abandon cash for the digital wallet.

In terms of the features offered, many respondents felt they were too similar to those available with other payment solutions. As a result, they feared the digital wallet might fail to achieve the widespread adoption it would need in order to replace other payment solutions.

On top of that, participants in Latvia did not welcome some features, like the transaction history with option for limited data and payments via QR code. While they did not really understand the purpose of the former, the latter was considered too time-consuming and difficult to use.

Unclear elements

Participants wondered whether the offline payments feature would turn on automatically when their phone went offline, or whether they would need to set it up beforehand.

Expectations

Respondents would expect to see some additional features in the digital wallet.

Some, for example, mentioned the possibility of adding loyalty cards to it, while others cited contactless payments via NFC technology, mirroring the use of a credit card, among potential add-ons.

Respondents also said they would like to be able to use the digital wallet outside the euro area.

Finally, they would like to have strong security, including fast and secure authentication, and transparency about the use of personal data. This reflects a general concern for security that was relatively common among participants in Latvia.



Lithuania

Perceived advantages

Participants saw the main advantage of the digital wallet as being its pan-euro area reach. This would enable a platform to be established for different commercial bank users, allowing for lower fees and shorter transaction times. They appreciated that the tool would be offered in their language, making it more accessible.

Participants found P2P payments and payment requests very easy, intuitive, and convenient for transactions between clients of different banks.

They also liked the transaction history with an option for limited data, which they thought would be convenient if a customer did not trust a certain store. The tech-savvy also felt it would be useful when buying a gift for someone with whom they share a bank account.

Participants were familiar with QR-code payments for bills and tipping in restaurants and said they would use them if they were offered by merchants.

They viewed payment on delivery as very attractive for customers. Respondents also approved of the option to receive a reminder when approaching a set budget limit.

Perceived disadvantages

Although the digital wallet provides useful features, participants thought it would be difficult to compete with existing solutions that provide additional services such as investing and saving options and cash-back. They also noted that many of the functions depend on batteries, internet access and equipment that can scan QR codes.

Respondents were not keen on the use of face ID for authentication and would like to be able to choose a different method based on their individual preferences. In terms of P2P payments, some expressed concerns about scammers sending fake transfer requests.

They found QR-code payment a long process that could not compete with the use of a contactless card. When using the transaction history with option for limited data, some found it inconvenient not to be able to see where they spent their money.

Payment on delivery was not popular among the merchants, who felt it would put them at a disadvantage.

In budget management, the use of top-ups caused anxiety, as participants felt that constantly using digital money would make it harder to keep track of their balance.

Unclear elements

Participants expressed concerns about a user's ability to manage their digital wallet account if their commercial bank account were to be blocked. They also wondered whether they could access their digital wallet other than through their smartphone, for example using a computer.

Participants were worried about money laundering taking place in the offline mode.

Regarding payment on delivery, it was not clear who would act as arbitrator in the event of a dispute between the seller and buyer.

Expectations

Respondents thought that the digital wallet would encourage more people to engage in digital transactions.

In the event of losing their phone or having it stolen, participants hoped to be able to regain access to the amount set for offline use by using a code.



Luxembourg

Perceived advantages

Participants in Luxembourg felt the possibility of transferring funds in real time to anyone across the euro area was the most positive development introduced by the digital wallet. This would be particularly useful in a small country like Luxembourg, where people are likely to carry out cross-border transactions.

They considered the option to pay offline an innovative feature that would be particularly useful in the event of internet failures.

The budget management tools were appreciated, but some thought they could be further improved by introducing, for example, the possibility to manage expenses for a third person (e.g. a child).

They also found the payment on delivery concept interesting.

Perceived disadvantages

Many respondents thought the digital wallet did not provide enough innovative features.

Some features, such as conditional payments and QR-code payments, were less appreciated, with many participants suspecting they would use them only in very limited situations. In particular, they judged QR-code payments useful when paying invoices but overall saw them as more complicated than other payment methods.

With regard to the transaction history with option for limited data, participants in Luxembourg tended to focus on the inconvenience this would cause, particularly the risk of losing track of their expenditure.

While the P2P features were generally appreciated, some aspects met with little enthusiasm. For example, participants found telephone numbers relatively unsafe as a destination for money transactions. They perceived the payment request feature as being an impersonal way to ask for money.

Unclear elements

The offline feature elicited a certain amount of curiosity among respondents in Luxembourg. Some wondered how exactly this feature would work and whether they would lose the money stored in their phone if it were lost or stolen.

Expectations

Participants had an expectation that the digital wallet would be able to connect to multiple bank accounts. Some mentioned that they personally hold multiple accounts, so this feature would be important for them.

Respondents who were interested in increasing their privacy would consider the transaction history with option for limited data incomplete if it did not also allow the transaction amount to be hidden.



Malta

Perceived advantages

Participants liked some features, such as offline use and budget management options, as they are not currently available in standard banking apps. They also appreciated the fact that the digital wallet could be set up and structured according to their needs.

Respondents found the connection between the digital wallet and their bank account convenient and useful. While linking payments would eliminate the need to transfer funds, a separate app would allow consolidation of financial elements such as multiple bank accounts. They therefore appreciated having a choice between these two options.

Participants welcomed P2P payments, finding them useful for travelling with a group or splitting bills. They also liked the partial payment option, which they considered practical.

Offline payments were seen as convenient, as they resolved concerns about connectivity issues when paying. Although they did not view the transaction history with option for limited data as a necessity, participants felt it could be an attractive option for some.

Lastly, participants liked being able to choose between the different budget management methods presented.

Perceived disadvantages

Participants were not happy about the idea of losing the balance set aside for offline use if they lost their smartphone. There were concerns about privacy when linking the digital wallet to their bank account. They also felt that the transaction history with option for limited data could encourage illicit activity.

Respondents thought the partial payment option, while useful, could create complications if disagreements were to arise about the amount of money that should be transferred.

While the participants would be open to scanning a merchant's QR code to pay, they did not like the idea of having someone else scan their personal QR code. They felt that they would have more control over their account when scanning a QR code themselves, whereas having someone else scan their personal code would leave their account vulnerable.

Unclear elements

Participants wondered whether the digital wallet could be linked to several bank accounts held with different banks. They questioned whether there would be a limit on the offline balance.

Some asked how they could get their money back if they made a transfer to the wrong person. It was also unclear whether the unpaid part of a partial payment would remain as a pending request.

Participants asked whether a receipt would be issued for the product or service purchased when paying with a QR code.

Expectations

Participants in Malta thought that a new digital wallet would need to offer features that are missing in current standard banking apps. Several said they would like the ability to merge all financial elements within one digital wallet, allowing them to better control their finances.

They would also like to be able to select the confirmation method of their choice, instead of having to rely on face ID. They would prefer not to have any limits on the amounts that can be transferred.

Participants, especially the more tech-savvy, expressed the need for back-up payment methods in the event of malfunctions on the digital wallet platform. They also felt that transaction history should be shown in real time, and that there should be an option to set up standing orders and subscriptions.



Netherlands

Perceived advantages

All participants were familiar with online banking apps and found the presented features easy to use. They said they already use P2P payments frequently and expected this to continue. Participants found that the digital wallet could be useful for payment transfers with people who live outside of the Netherlands and/or do not have a Dutch bank account.

Respondents felt the connection between the digital wallet and their bank account would allow easy access to and control of expenditure. They appreciated that it could be used as a separate “money jar” within their bank account.

As a result of the pandemic, QR codes have become more common in the Netherlands. Younger participants saw this as a more interesting payment option. Merchants indicated that they would prefer to use their own codes, rather than scanning a customer’s code.

The option of offline payments appeared very interesting to the participants, who would like to use it in countries that rely heavily on cash payments. They liked having the option to pay when the internet is down. This feature was especially attractive for those who do not often pay in cash and therefore do not usually carry any.

The transaction history with option for limited data was considered useful in certain situations, such as when buying gifts for your partner or making donations to charity. Merchants were interested in payment on delivery, as they felt it might give customers a greater feeling of safety, thereby generating more business.

Perceived disadvantages

Participants felt that the digital wallet’s ease of use could encourage users to spend beyond their means. Although merchants thought that accepting payments through their smartphone could be useful in an emergency, they had concerns about practical and security issues. Payments via QR code were seen as slower and therefore less convenient than card payments.

Participants felt that the automatic refilling of their digital wallet balance could be dangerous in the event of losing their phone, and were concerned about a loss of control.

Although they appreciated offline payments, they were unhappy that losing their smartphone would mean also losing the balance set aside for offline use.

The transaction history with option for limited data met with some reluctance due to associations with criminal activities and the inability of a user to keep track of their spending.

Unclear elements

Participants expressed the need for further clarification about data protection and the security of the digital wallet.

When setting aside a balance for offline use, participants wondered whether another person would be able to access these funds if they got hold of their smartphone. They also asked if they would receive a statement of their offline purchases on their account.

Expectations

Participants hoped that the digital wallet could be used with currencies other than the euro, which would increase its reach and utility. They also thought it would be interesting if the digital wallet offered insured purchases, which would make it a good substitute for a credit card.

When paying with a QR code, participants would like to have a function that would save the receipts of their purchases directly in their digital wallet.



Portugal

Perceived advantages

Participants in Portugal found the presented features intuitive and easy to use. They liked the fact that the digital wallet would be used throughout the euro area and saw this as offering added value compared with existing payment solutions. The ability to pay abroad without paying commission was much appreciated. Respondents also felt that the presented tool was secure, as face ID is required to confirm each payment or transfer.

Focus group members liked having the ability to top up their digital wallet balance, and felt this would help them control their expenditure. They also valued the option where payments are withdrawn directly from their bank account, as it would remove the need to manage various balances.

The absence of fees for P2P payments was highly appreciated. Participants found QR-code payments more secure due to the lack of direct contact, thereby avoiding the risk of bank card cloning, for example. They considered the process easy and convenient.

They found the possibility of offline use very innovative and thought that it could replace cash payments in the future. Underbanked participants mentioned that it could be more convenient than carrying cash. They perceived offline payments as more secure because hackers would not have direct access to their account.

Participants considered the option to hide transaction details useful for situations when they would not want to share their data with the seller, and for buying gifts or making anonymous donations.

Perceived disadvantages

Respondents feared a greater security risk due to the euro area-wide use of the digital wallet. They did not always feel comfortable sharing their phone number for payment transfers, as they felt this presented a risk of hacking and spam.

Participants disliked the fact that they would lose their offline balance if their smartphone were stolen and thought that the offline mode could be used for fraud since no records would be kept.

Regarding the transaction history with option for limited data, participants were not willing to give up oversight over their payments and having a record of their purchases, although they were keen to avoid sharing their data with merchants.

Unclear elements Participants wondered what would happen to the balance set aside for offline use if they decided to buy a new phone. They were unsure whether the balance could be transferred or whether it would be lost. They also questioned how the transaction history with option for limited data would be accepted by regulators, since it significantly reduces users' digital footprint.

Participants wanted to know if they would need to download another application on their smartphone to read the QR code displayed by a merchant.

Expectations Participants found it important to ensure the security of personal data. They would also like to have guarantees or compensation in the event of fraudulent use of their account.

Respondents who have frequent contact with other countries would find the presented digital wallet more useful if it could be used beyond the euro area. They would also like to be able to link several bank accounts to their digital wallet.

While users can make transfers from their bank account to the digital wallet, participants would also like the reverse to be possible, as this would add valuable flexibility when they are low on funds. Similarly, they would value the option to transfer the funds allocated for online use back to their overall digital wallet balance, or to their bank account.

To avoid spam in connection with the payment request feature, participants would like the option of filtering out requests from people who are not in their contact list.



Slovakia

Perceived advantages

Participants in Slovakia generally considered the functions included in the digital wallet practical and necessary. They thought the digital wallet would be particularly useful in processing cross-border transactions.

Respondents felt the absence of fees and the wallet's pan-euro area availability were its biggest strengths. Consequently, the top-rated features in Slovakia were P2P payments, payment requests, and budget management, in that order.

Participants in Slovakia tended to trust the security of the digital wallet more than other payment methods.

Perceived disadvantages

Participants considered some of the presented tools relatively complex to use or set up for an average or unskilled user. For example, they felt the offline payments function, despite being one of the few innovations introduced by the digital wallet, would be relatively difficult to set up. This made it less appealing, particularly to users who are less accustomed to digital payments.

QR-code payments were little appreciated in Slovakia.

The transaction history with option for limited data was not particularly appealing either.

Overall, a number of participants feared the digital wallet might offer too many different features, with the risk of overloading its users.

Unclear elements

A common concern was the accessibility of the digital wallet for older people, who are typically less accustomed to using digital payment tools.

Participants questioned how potential abuse of the transaction history with option for limited data feature (e.g. for illegal activities) would be monitored in digital transactions.

They also wondered whether the digital wallet would be linked to a single smartphone, or whether it could be held on different devices at the same time.

Expectations

Some participants would expect to find some financial incentives in the digital wallet (e.g. cash-back): they thought these would help encourage users to adopt it.

Respondents also expected to be able to retrieve the money they had added the digital wallet for offline use in the event of their smartphone being stolen or lost.



Slovenia

Perceived advantages

Participants perceived the digital wallet as a useful instrument for processing payments across the euro area without incurring any extra costs.

They considered the number of features offered by the digital wallet wide enough to satisfy its users' needs. They welcomed it as an app that brings together features from several payment solutions, and felt that some of its features were relatively innovative (e.g. QR-code payments and offline payments).

Respondents also deemed the interface simple and easy to use.

Perceived disadvantages

Participants acknowledged that similar features are available in existing payment apps. Some feared that the digital wallet would not be accessible to older segments of the population, who may struggle to learn how to use it.

Regarding the offline feature, participants felt that storing money on the phone would increase the risk of losing it.

Some respondents were less trusting of digital technologies, and this mistrust was reflected in their rejection of functions perceived as less safe or private, such as QR-code payments when the code is scanned by the retailer.

Focus group members did not feel the transaction history with option for limited data represented added value.

Unclear elements

Some participants asked whether the digital wallet would also be designed for laptop or tablet use.

Regarding user-scanned QR-code payments, they were not sure whether it would be possible to edit the amount beforehand, for example when leaving tips at a restaurant.

Some asked whether there would be a dedicated account for money destined for offline payments, or whether online and offline payments would be processed from the same account.

Expectations

In Slovenia, as in other countries, participants said they would like the digital wallet to allow them to store documents such as forms of identification, driving licences and health insurance cards.

They also expected the digital wallet to use language that everyone could easily understand.

Some participants suggested introducing a function that would allow users to pay for products in multiple instalments. Those interested in this option mentioned that some credit cards have already started to offer this in order to encourage spending despite the increasing inflation rate.



Spain

Perceived advantages

Respondents in the Spanish focus group saw the digital wallet as a way of simplifying payments by providing a more accessible, free solution that also works offline and can integrate different payment systems (e.g. credit cards and bank accounts).

Merchants would particularly welcome this simplification, since they currently need to use a multitude of payment solutions to meet customer demand, often incurring extra costs.

Participants saw the fact that some features, such as P2P payments, are already available through other payment apps (e.g. Bizum) as an incentive to adopt the digital wallet, since people would already be accustomed to using them. They also mentioned QR codes as an instrument that has become relatively standard in recent years, and that the public would easily embrace.

Budget management is available on existing payment apps and was particularly appreciated by younger and tech-savvy participants. They generally preferred the option of linking their bank account to the digital wallet rather than topping up the balance, as they felt this was more immediate and would provide a complete overview of their spending.

Participants saw the true novelty of the digital wallet as the possibility to pay offline, and they found this appealing.

Perceived disadvantages

Although participants in Spain considered familiarity with digital payment methods an incentive to use the digital wallet, many also noted that this could represent an obstacle, as existing solutions (e.g. Bizum) are already quite advanced and well known.

While some of the population are largely accustomed to payment apps, others are still relatively uninformed. Participants felt that knowledge about digital payment methods would need to be improved first, particularly if users themselves need to set up the digital wallet in their banking app.

Participants had doubts about some elements of the digital wallet. For example, some did not perceive face ID as secure. Others were afraid that money stored in the wallet for offline payments might be lost if the phone were stolen. Payment requests were also not popular: respondents preferred a more personal approach. Merchants generally rejected payment on delivery, as they felt it only protected the buyer while leaving the seller at risk.

Unclear elements

Some participants were unclear whether there would be any guarantees in the event of money loss or fraud.

Regarding the transaction history with option for limited data, some wondered whether it would be possible to retrieve this hidden information when needed (e.g. when making a claim).

Expectations

Some participants expected to be able to upload documents to the digital wallet, like their ID or driving licence. They said this would make the digital wallet a more holistic instrument and increase its appeal.

Others would like to have the possibility to share the wallet with another person, such as their partner or a family member. Among the merchants, some mentioned they would like to have the possibility of adding different currencies to their digital wallet.



Photo by Immo Wegmann on Unsplash