

User study for the general public

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1 The Riksbank's user study within the framework of the e-krona project

The Riksbank is investigating the possibility of issuing a digital complement to cash, known as the e-krona. To investigate attitudes, behaviour and driving forces in the area of payments, we have conducted a user study. The study was divided into two sub-studies, one aimed at the general public and one aimed at retailers. This report describes the results of the study aimed at the general public, which is to say private individuals.

Several central banks are exploring the design of central bank digital currency

An increasing number of central banks are exploring the possibility of issuing central bank digital currencies (CBDCs). One key question is how such central bank currencies should be designed to meet the needs of the public.

The Riksbank has therefore conducted a user survey with the aim of identifying situations, known as user cases, in which a Swedish central bank digital currency (e-krona) could resolve problems or difficulties that private individuals and companies face on the payment market today. The study has been divided into two sub-studies. The first study focused on private individuals and was conducted in autumn 2022. The second study was conducted in spring 2023 and targeted retailers, companies and trade associations in the retail sector. This report describes the results of the first sub-study.

User study to give the Riksbank a better understanding of potential users of e-krona

Since 2017, the Riksbank has investigated the scope for issuing central bank digital currency, known as the e-krona. The work has mainly focused on testing different technical solutions.¹ In parallel with this, the Riksbank has analysed various legal aspects such as data protection, financial confidentiality and the kind of asset the e-krona could be.

But the design of the e-krona should not be based solely on what is technically or legally possible, but also on the needs it can meet for potential users. In this study, we identify these needs by examining the problems faced by the public when it comes to payments. The study was based on three questions:

- *How does the public feel that payments work today?*
- *What problems related to payments does the public consider exist today?*
- *What attributes needs to be considered when designing an e-krona?*

¹ See the e-krona pilot reports on the Riksbank's website: [E-krona reports | Sveriges Riksbank](#)

The study as a whole was aimed at both the general public (mostly payers) and companies in the retail trade (mostly payees). This report describes the work and results of the part of the study focused on the public.

The rest of the report is structured as follows: Section 1 presents the results of the study and summarises the insights, Section 2 presents conclusions and Section 3 describes the methodology and selection of participants for the study.

1 Results

The study shows that the public thinks that payments work well. There is a wide range of payment services to use. In order for people to want to try new services, it is important that they feel safe. For example, trust in a service can be created by a recognisable identification method or brand. Many respondents mention that they use so many different services that their finances have become spread out and therefore they need to get a better overview of their finances. Those who have prepared for a crisis situation have done so by acquiring additional payment and identification solutions and not primarily by having cash available because they are unsure whether the shops will accept cash.

Seven insights into how the general public consider payments are working

The results of the study are presented in the form of seven insights; see Table 1. The insights describe how the general public experiences payments today, the challenges they face and what they think is working well. The following sections describe each insight in more detail.

Tabell 1. Insights

	Insight
1	Better control of finances
2	Security and trust key factors for a new payment service
3	It is important to be able to adjust banking and payment services to customers' own needs
4	Flexibility is expected
5	It is difficult for the public to imagine a crisis affecting their ability to pay
6	Cash, anonymity and privacy
7	Great similarities in behaviour among participants in the study

1.1 Better control of finances

Being economically aware means using more services but lacking an overview of your finances

Today, it is common for private individuals to have more than one bank and to use several private financial services. The public deliberately seeks out different actors to get the best terms for their needs. This means that their private finances become spread out and that many people feel they need an overview of their finances gathered from all the services they use.

“I use Excel to create a better overall view. There's nothing today that's better than Excel.”

At present, receipts are saved in several locations, both physically and digitally, and it is difficult to gain a complete overview. To solve these challenges, some people create their own systems such as manual spreadsheets and physical archiving. Klarna and Kivra are examples of services that many feel facilitate the handling of payments and receipts but there is a demand for services that include all or more parts of their personal finances. Among other things, they hope that more shops will join Kivra or similar services.

“ICA provides receipts for Kivra. It feels good to have these digitally, but it would be better if everything was gathered in one place.”

In order to gain better control over their private finances, members of the public are looking for the possibility to categorise, evaluate and follow trends, thus learning more about their own purchasing behaviour. Among other things, this is to improve planning and control of their expenditure. There are currently some functions that allow transactions to be categorised, but these are not considered broad enough. More content in digital transaction data, such as shop name instead of company name, location and time, and receipts for the product or service would be perceived as creating value.

1.2 Security and trust are key factors for a new payment service

Factors that can create security and trust

Many respondents are well aware of the benefits of having relationships with several different banks. However, even if the search for better terms and new services leads to several banks being used, customers often keep their traditional banks for their primary finances. This shows that customers have confidence in their banks. They are also aware that the banks are under the supervision of Finansinspektionen (the Swedish financial supervisory authority) and that their capital is protected by the deposit guarantee up to a certain amount. Trust in the major banks is reinforced by their size in the market and their long existence.

When a brand known to the public is behind a new payment service, it strengthens trust in the service. If this is combined with a well-known identification method and many people are using the service, good conditions are created for more people to test it. Many of the interviewees relate the use of Swish² and BankID to security because these are services you connect to through your bank. The fact that the appearance of the application is the same regardless of who you are paying creates a sense of security. However, reliance on a single digital identification solution is seen as a vulnerability. Swish is mentioned as a service that many people waited to start using because they initially did not think they needed it. Many people choose to wait to see what everybody else is doing and only feel safe enough to try using a service themselves when they start to feel they are one of the only ones not using it. At that point, a need has also arisen because the service has reached so many users that the alternatives are seen as troublesome, for example using online banking for a bank transfer between private individuals.

In other words, most people are pushed to try new services when a wide range of people around them have already tried the service and recommend it.

“When it’s something I don’t recognise, I feel zero trust.”

For e-commerce, there are strategies for how customers choose to pay. On websites that a customer visits often, it is common to pay directly in connection with the purchase. On websites that are rarely used or when buying from abroad, BNPL (Buy now, pay later) functions are used to a greater extent. Customers are unwilling to pay in advance in case there is a problem with delivery. They also see the benefit of having another party deal with the case if a company does not deliver what is expected. Klarna is an example of a payment service provider that provides security and convenience for such purchases and offers several payment options suitable for different buying contexts. PayPal is also used in the same way but to a greater extent when buying from abroad.

“I always use Klarna if I’m shopping on a site I don’t know or that feels uncertain.”

1.3 It is important to be able to adjust banking and payment services to customers’ own needs

Freedom of choice and security are important

The ability to adjust banking and payment services is vital for the individual user to feel secure and have control. Being able to take their own decisions over their own money and how it is used is important for people to feel they have freedom of choice.

People use the security features available on the account or card offered by the commercial bank or card issuer. These are mainly different barriers linked to debit cards

² Swish application enables transactions restricted to bank customers with Bankid in Sweden; the application enables instant payments account to account by connection via phone number.

or credit cards that limit the amount, payment situation (online or shop), payment type (contactless etc.) and geographical location. Various insurance contracts against loss or fraud are also used.

Distributing money across different accounts provides a sense of security. For example, when receiving salary payments, many people move part of the sum from their current account to another bank account that is not linked to a means of payment. This allows risks to be spread and exposure to be reduced in the event of a crime.

“You can always be skimmed or whatever, so I try to protect myself by not having more than SEK 2,000-3,000 on my card.”

In addition to transaction and savings accounts, it is common to have a credit card as a backup. The ability to adjust one’s own credit limit (i.e. to reduce the limit based on the assigned credit) is perceived as positive.

1.4 Flexibility is expected

A service that is not considered flexible is abandoned

The Swedish payment market is seen as well functioning and the public considers that payments today work smoothly. This applies to payments to both companies and private individuals. There is a large selection of services for individuals to use and flexibility is something they expect if they are to continue to use a payment service.

Although there is a large variation in behaviour and preferences when it comes to payments, the overall pattern is that the trend is moving toward what, in various situations, can be perceived as smoother, faster and most accessible.

One example of this is that payment services that work on mobile phones are being used more and more often. In comparison with cash and Swish, contactless payment services via RFID, such as Apple Pay, Google Pay and Samsung Pay, can offer faster processing and clearer digital information. In shops, card payments continue to be the most common method of payment. More and more people are choosing to add their cards to their mobile phones to make card payments through services such as Apple Pay. At present, people are using their mobile phones to handle both payments and other personal financial tasks to a greater extent. Behaviour and habits associated with mobile phones have relegated wallets or card holders to a secondary place in everyday life, with functions such as holding debit cards, credit cards, membership cards, ID cards, customer club cards and so on having moved into mobile phones.

“I use my cell phone for everything. I never even take my card with me any more... Super handy!”

For person to person payments, Swish is the preferred payment method and it is perceived as more secure than carrying a wallet with cards and/or cash. For mobile payments, the speed with which payments can be verified is appreciated. For new services to be used, these need to be equally agile and accessible. Customers also want

to be able to choose between tools and interfaces for payments: mobile phone, card, other chip carrier, QR code or computer.

1.5 It is difficult for the public to imagine a crisis affecting their ability to pay

Preparing for longer disruptions is difficult if you have not experienced them before

The general public is of the opinion that, to some extent, they are prepared for disruptions in the payment system. Many have multiple cards, cash, payment services and more than one digital identification service. Failed payments are mainly linked to occasions when respondents have been abroad and a card has not worked, when card payments have failed to work at checkout or when there have been operational errors at the banks or Swish. In addition to everyday operational disturbances, trying to relate to longer disturbances that affect everyday life is more difficult.

“I don't think anything like that will happen in Sweden and, if it does, I'm sure there's a plan to fix it.”

Some of the population take an interest in emergency preparedness in line with the recommendations of the Swedish Civil Contingencies Agency (MSB) but there is also great confidence in authorities' ability to resolve the situation in the event that the social services we take for granted were to fail. Payments are not the first thing people think of in a crisis. Instead, they focus on keeping their digital devices charged with a power bank and on having access to food and water.

“If such a payment crisis were to happen, I would just go to an ATM and take out some money, right? Or would that be possible?”

Cash is still used as a complement to digital payments in situations where digital means of payment do not work, but few people keep cash at home in the event of a crisis. 'Locking' money in the form of cash for a potential crisis is seen as inflexible. The fact that it is not always possible to pay with cash today also affects people's perception of how cash can be used as an alternative in crisis. It is more common to have multiple digital options for payment than to keep cash at home. The ability to prepare for a crisis is also an economic issue. Obtaining what is recommended is expensive and not everyone can set aside the cash amounts that MSB believes we need to hold in reserve.

1.6 Cash, anonymity and privacy

For many people today, cash serves as an alternative means of payment that is used when digital payments cannot be made. Few people use cash as their primary means of payment in daily life. However, many respondents say that the possibility to pay in

cash is important and that cash is important for groups in society who do not use digital payment services for various reasons.

“It’s very important for society that we keep cash, even though I won’t be using it - but for other people.”

Cash is not used for the purpose of making payments anonymously and neither is anonymity something that people miss in digital payments. Anonymous payments are perceived as insecure and people cannot see the point of anonymity except in criminal activities. Verifying your own and the payee’s identity creates a sense of security, which is important when using a payment service. When making payments to companies, users are aware that data is sold to third parties and this is something many would like to limit. While customers are positive towards being given suggestions for products when making purchases online, they would prefer that this requires some kind of membership so that they can specifically agree to the terms and conditions.

1.7 Great similarities in behaviour among participants in the study

There are very small differences between the participants in the study when we compare how they choose to pay. The decisive factor is what is safest and most convenient in a given payment situation.

Those who use cash more regularly do this as a backup for different situations and would have prioritised paying by card if this had worked safely and smoothly in all situations.

One group of participants in the study were more likely to test new services than others in order to optimise their finances. These people often test new solutions and quickly stop using a service if it fails to give them the desired level of value.

Although the interviewees presently had different levels of preparedness, there were small differences in their payment behaviour in practice. However, people with a high level of preparedness tend to have additional backup options, such as more debit and ID cards. Their approach to crisis preparedness also sets them apart. People with a high level of preparedness are concerned about a potential crisis and see it as beneficial to be prepared with food, water and so on, while the majority of those who give preparedness a low priority do not believe that a crisis will occur. However, the attitude toward finances, payments and cash in crises is the same in both groups, meaning that cash is not a priority.

2 Conclusions

Payments work well but people want better control over their personal finances

The user study shows that the general public feels that payments in Sweden generally work well. Different services and different actors are available for use and most people have strategies for how different purchases should be handled depending on how secure the situation is. Confidence in the banks remains high but payment services with better functions and that can be adjusted to suit user preferences have promoted other players in the payment market. Many people feel that they need better control over their finances as the search for new services has led to their finances becoming scattered. Mobile phones make it possible for users to bring their personal finances into their everyday lives and meet the need among users to choose how to pay. They allow all payment methods to be collected in one device which is perceived as easy and convenient.

Security is needed to adopt new payment services

The banks, particularly the major banks, are the ones we trust when it comes to our money. There is security in these institutions and in the services they support, such as Swish. For new payment services or private financial services, the credibility of the service providers is paramount and companies and services that are easy to recognise strongly inspire trust. Trust can be transferred through associations between payment method, identification method, retailer, institution and authority, for example. A trusted intermediary can increase security when trust is lacking between the parties. Creating this security is necessary for a new service to become widespread. In turn, this dissemination is important as many people wait to start using a service until several people around them have confirmed that it is safe and reliable. When a potential user sees that many others are using a service, they may recognise their own need for it, even if this was not clear from the start.

Financial preparedness among the public can be improved

Despite the existence of recommendations on preparedness, only a smaller group in society chooses to follow the recommendations regarding their finances. This may be because there is strong confidence in the authorities' ability to solve problems in crisis situations but there are also people whose financial conditions do not allow for preparedness. Putting cash away for reasons of preparedness is not perceived as urgent either, as the use of cash has decreased. People do not see it as a given that cash can be used for payments in shops. Few have given much thought to situations in which it would be difficult to make payments. For those who have prepared for a possible crisis, economic preparation is not a priority. Instead, these people consider that they are preparing in such a way that they would not have to use money during a crisis.

3 Methodology

The Riksbank has interviewed the public to examine how people view payments and how they choose to pay in different situations. Interviewees have had a broad geographical and age distribution and we have sought to reach five different sample groups.

3.1 The user survey was based on 103 in-depth interviews

In-depth interviews with the public active on the Swedish payment market

The study is based on in-depth interviews with private individuals active on the Swedish payment market. The survey was carried out in autumn 2022.

The interviews were conducted in a semi-structured form. This means that, in support of the interviews, we designed an interview guide with predetermined questions but let the conversations slide into other themes. The interviews were divided into two rounds. The first interview focused on respondents' view of payments, together with their needs and behaviour regarding payments. In the second interview, respondents were asked to consider and discuss images, prototypes and claims concerning payment solutions (known as 'trigger material').

When recruiting the respondents, we made a pre-selection with the aim of dividing the respondents into different sample groups and ensuring that the sample groups met certain criteria.

After the first round of interviews, the selection criteria for one of the selection groups were adjusted. To compensate for this adjustment, as well as for drop-outs from the first round of interviews, 22 new participants were recruited for the second round of interviews. In total, 60 interviews were conducted in Round 1 and 43 interviews in Round 2. The interviews were conducted digitally via Zoom, providing a good geographical spread.

3.2 Selection

Five sample groups

When recruiting respondents to the study, we searched for respondents who met the criteria as cash user, fintech user or average user to be interviewed about payments in everyday life.³ In addition, we looked for respondents with a large or small interest in preparedness. These were also interviewed about payments in everyday life but

³ For the definition of sample groups, see Table 2 Selection

gave more comprehensive answers about payments and preparedness as they had made active choices for preparedness.

Recruitment was carried out through a supplier in which the majority of respondents belonged to a panel, but some recruitment was also carried out via digital advertising. In addition to following the selection criteria for each sample group (see table), we tried to achieve an even geographical spread both within Sweden and between urban areas and sparsely-populated areas. Conducting interviews online via Zoom made it easier to get a representative geographical sample.

A total of 103 respondents participated in the study. Table 1 compiles the selection and criteria for each sample group.

Tabell 2. Selection

Sample groups and criteria for each group

Sample group	Definition	Number
Cash user	People who use cash at least twice a week	17
Average user	People who use different payment methods in their everyday lives for purchases and transfers. Small cash usage	16
Fintech	People who use at least three digital services from a selection of applications: Splitwise - Dreams – Savr- Lysa- Fondo- Refunder Lunar - Crypto.com - Ecster - Opti - Anyfin - Buddy - Gimi - Klarna - Rocker - Revolut - Qliro - Steven.	18
Low level of preparedness	People who do not comply with more than one item according to MSB's preparedness check list.	26
High level of preparedness	People who comply with three or more items according to MSB's preparedness check list.	26
Total		103

The selection reflects several groups in society

The respondents in the study should generally represent the public in five different aspects. Cash users are individuals who actively choose to pay with cash and who do so regularly every week. The sample group average users represents the majority of the population and stays within the normal distribution. They are flexible in their way of handling payments and adapt to the situation and context. The selection group

Fintech represents individuals looking for new services and has, to a large extent, tested a larger selection of digital services than the selection group average users. The criterion for the sample in fintech was the use of at least three pre-defined digital services. The applications Klarna, Refunder and Qliro were replaced after the first round of interviews with Savr, Lysa and Fondo's applications. In order to be in this sample group, respondents also had to answer yes to the following question before the second round of interviews: *"Would your friends/family describe you as a person who is quick to try out new technology and new services?"* Respondents with low and high preparedness represent two groups in society outside the normal distribution in terms of preparedness. For the five sample groups, the age of respondents has been between 18 and 59 years.



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