Commercialisation of banking products and services on digital channels in Portugal

Results of the questionnaire on financial institutions

2016

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‘The commercialisation of banking products and services through digital channels requires that the same rights granted to customers are guaranteed via the regulatory framework in traditional channels, that new risks are mitigated and that potential obstacles to the provision of those channels are known by Institutions. This requires a close monitoring of the development of the digital ecosystem in Portugal and a reinforced dialogue between Banco de Portugal, financial institutions and consumer representative entities.’

The Governor
Carlos da Silva Costa

in Banking Conduct Supervision Report 2016

Executive summary

This report presents the objectives, structure, methodology and analysis of the results of Banco de Portugal's first questionnaire to financial institutions on the commercialisation of banking products and services through digital channels, highlighting:

- the degree of availability of digital channels by financial institutions;
- the levels of adoption and use by customers;
- the growth prospects of digital channels;
- the analysis of the constraints and obstacles to the demand for digital channels;
- the provision of digital channels for the opening of accounts, commercialisation of consumer credit and payment services;
- the security risks and mechanisms to mitigate these risks.

The digital ecosystem

In recent years, technological innovation, backing and promoting financial digitalisation, has changed the shape of retail financial services and promises to continue to do so. Technological development has led to the emergence of new channels for the provision of financial services and the modernisation of retail financial activity.

The use of the internet and mobile devices changes the way banking customers relate to financial institutions and access financial services.

With the technological development of smartphones and tablets and a greater use of these devices in people's daily lives for a variety of purposes, in addition to providing homebanking services via the Internet, financial institutions also provide mobile applications (APPs) to carry out financial services.

Questionnaire on financial institutions

In this context, Banco de Portugal intends to monitor the evolution of digital channels in retail banking markets.

To this end, Banco de Portugal prepared a questionnaire at the end of 2016 directed at domestic financial institutions to conduct a first survey on the digitalisation of retail banking products and services in Portugal. The results of the questionnaire are presented in this report.

This questionnaire sought to distinguish online channels, where access is via the internet, and mobile channels, made available via a mobile application (APP), on smartphones or tablets. It also sought to understand the penetration of digital channels in private and corporate customers, assessing the levels of adoption and use, as well as the functionalities related to opening accounts, providing consumer credit and payment services. It also aimed to identify possible legal and regulatory constraints as well as the main security risks and ways to mitigate these risks.

This questionnaire aims to comply with the best practices identified by FinCoNet (International Financial Consumer Protection Organization) in its report 'Online and mobile payments: supervisory challenges to mitigate security risks', released in September 2016.

Given the prospects of a strong expansion of the supply and demand for banking products and services through digital channels, Banco de Portugal will continue to monitor them by carrying out new questionnaires on these subjects.

Main results

The replies to the questionnaire showed that almost 90 percent of the surveyed financial institutions provide banking products and services to individual customers on the online channel. The offer through mobile applications is less frequent, but more than half of financial institutions already offer this channel to individual customers and about 29 percent have plans to do so in the future.

The rates of adoption and effective use of the online channel by private and corporate customers are significantly higher than those of mobile applications. In the online channel, the rates of adoption and effective use by individual customers are lower than those of companies, contrary to mobile applications. Despite the significant levels of adoption of the online channel, actual usage levels are much lower, especially in the private segment, which is not the case with the mobile channel.

About half of the financial institutions that offer the online channel report that more than 50 percent of individual customers have already adopted this channel, compared with 14 percent in relation to APPs. Only 20 percent of financial institutions indicate that more than 50 percent of their customers have used the online channel in the last three months.

In the case of companies, around 64 percent of financial institutions show that more than 50 percent of this segment of customers have already joined the online channel, with 46 percent of financial institutions registering usage levels of more than 50 percent of customers.

Financial institutions show high growth expectations in the use of digital channels. More than 70 percent of the financial institutions that offer or intend to offer the online channel estimate a growth of more than 25 percent in both private and corporate customers. In turn, increases of more than 25 percent in the number of customers using the mobile channel are indicated by 71 percent of financial institutions in the individual customer segment and 57 percent in companies.

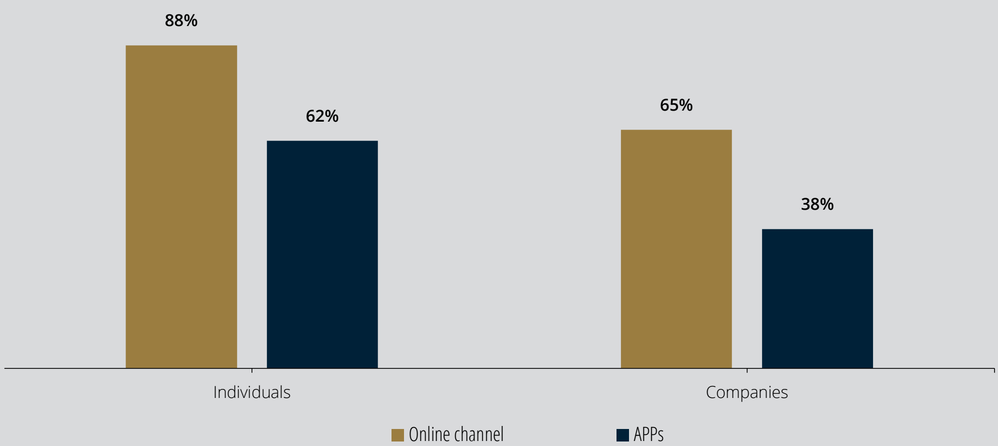
About a quarter of the financial institutions that already have a high percentage of online channel use by individual customers still expect significant growth rates in the coming years, up from 50 percent.

Current customer loyalty and attracting new customers are the main reasons for the bet on the commercialisation of banking products and services on digital channels, identified by 82 and 64 percent of financial institutions, respectively.

On the other hand, the key obstacle to the development of digital channels is the perception of security risks by banking customers, classified by about 80 percent of financial institutions in first or second place, in terms of relevance, of a set of six factors.

When opening a current account and entering into consumer credit agreements, it is already possible to carry out certain procedures on digital channels, mainly through the

Chart 1 • Percentage of surveyed institutions that provide the online channel and APPs for individuals and companies



online channel, and financial institutions show plans for significant developments in these areas in the future. However, all banks report that it is not possible to carry out all the procedures necessary to open a current account via digital channels.

The most common functionalities mentioned for the online channel are the possibility of manual insertion by customers of their personal data and the viewing and download of pre-contractual and contractual information documents available in 50 percent and 70 percent of the banks surveyed, respectively, in relation to the opening of current accounts, and in almost half of the financial institutions, in relation to the conclusion of consumer credit contracts.

With regard to plans for the future, a significant number of financial institutions express their intention to make available functionalities, such as entering personal customer data by reading the citizen card chip, using an electronic signature, identification and authentication via videoconference and the possibility of uploading the necessary documents for the contract through digitalisation and photographs.

The number of financial institutions with APPs that allow the execution of procedures for the opening of current accounts or consumer credit contracts is reduced, showing that digitalisation via the mobile channel is still at an early stage.

Financial institutions identify standards for the prevention of money laundering and terrorist

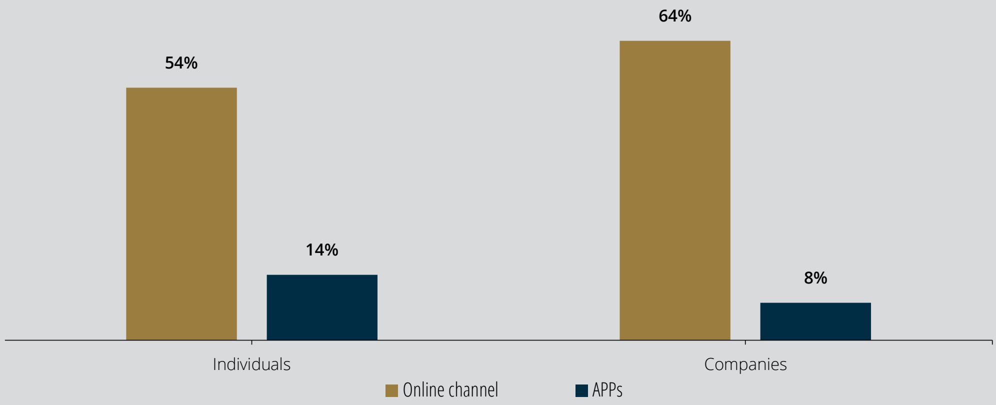


Chart 2 • Percentage of institutions surveyed that report adoption rates of over 50% of customers

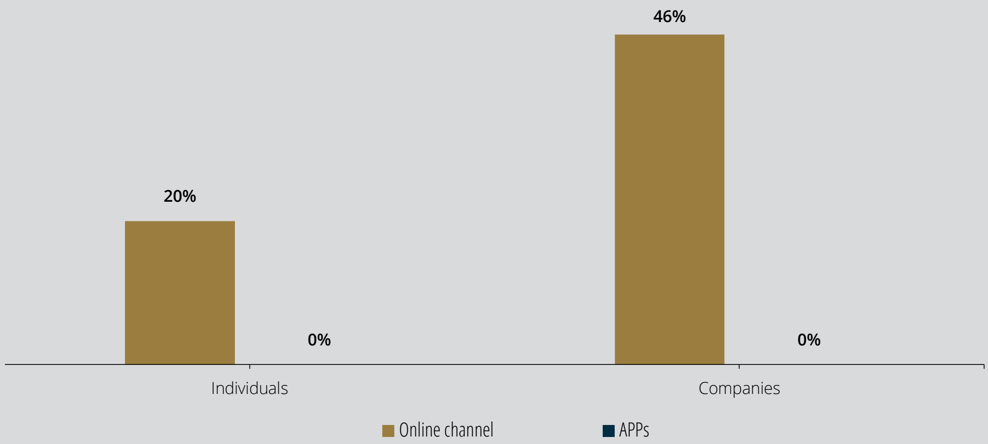


Chart 3 • Percentage of institutions surveyed that report usage rates of over 50% of customers financing as the main legal or regulatory obstacle to the digitalisation of account opening and consumer credit processes. Other constraints identified are the contract signing rules, pre-contractual and contractual reporting obligations and the rules for the protection of personal data.

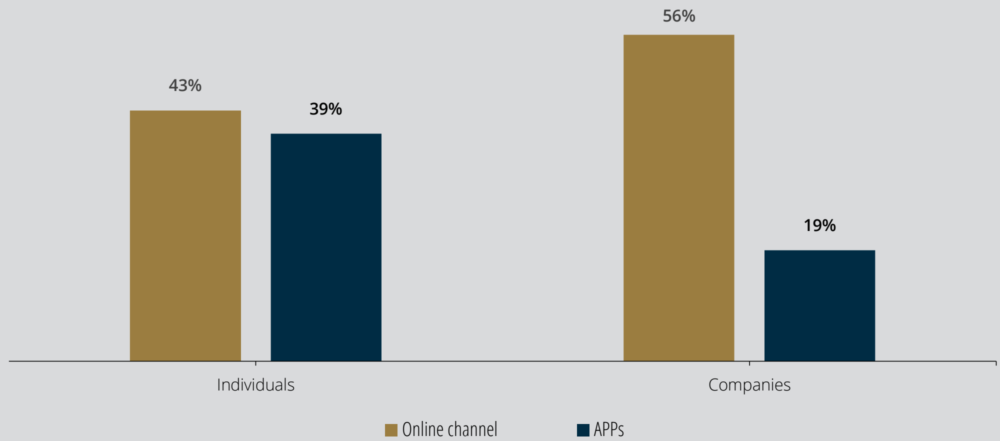
As far as **payment services** are concerned, no significant legal or regulatory obstacles to their digitalisation have been identified, with an estimated 80 percent of financial institutions surveyed providing payment services through homebanking and 56 percent through their APPs.

In terms of **security**, the three main risks related to the use of identified digital channels are phishing, identity theft and malware, reported by 88, 68 and 56 percent of the financial institutions surveyed, respectively.

The responses to the questionnaire also made it possible to identify **functionalities to mitigate the security risks** implemented by financial institutions, with the most frequent being time-out for session inactivity, which was indicated by almost 90 percent of the financial institutions surveyed, followed by validation of transactions via token and the encryption of communication, which are reported by around 80 percent of the financial institutions, in both cases.

Most financial institutions are also proactive in informing customers about security issues on digital channels. About 82 percent refer to the use of pop-ups and information banners in homebanking or on the institutional website, and the provision of information when customers subscribe to digital channels.

Chart 4 • Percentage of institutions surveyed that foresee growth rates of more than 50% in the use of digital channels



1. Presentation of the questionnaire on banking products and services on digital channels – 2016

1.1. Objectives

As part of the initiatives to monitor retail banking products and services marketed through digital channels, Banco de Portugal prepared a questionnaire on financial institutions to carry out a first survey on the digitilisation of retail banking products and services in Portugal.

Detailed knowledge of the practices of financial institutions in the marketing of banking products and services on digital channels and the evaluation of obstacles to the development of digital channels allow us to consider possible changes in the current regulatory framework and to support the supervision of Banco de Portugal.

1.2. Structure

The questionnaire was organised into sections: 'Development of digital channels', 'Current accounts', 'Consumer credit', 'Payment services' and 'Security'.

In the section 'Development of digital channels', the aim is to identify the provision of digital channels by financial institutions to their individual customers and companies and the main reasons for doing so. This section also includes questions to assess customers' adoption of digital channels, their effective levels of use, and prospects of financial institutions for their growth in the coming years. Financial institutions were also questioned about the main barriers, on the supply and demand sides, to the expansion of digital channels.

In the 'Current account' section, the questions, organised in stages of the account opening process, are intended to identify the functionalities available or to be made available on each of the digital channels for the various stages of the process and to identify legal and regulatory obstacles to their digitalisation.

The section 'Consumer credit', which is also organised in stages of the lending process, is intended to identify the functionalities available or to be made available in each of these stages. Financial institutions are requested to identify the main obstacles in legal and regulatory terms that condition the digitalisation of consumer credit.

The questions relating to the availability of 'Payment services' make it possible to identify the type of services provided and to be provided in each of the digital channels and any legal or regulatory obstacles that hinder their implementation.

With regard to 'Security', the questionnaire contains three questions to identify the main security risks related to the use of digital channels, the mechanisms implemented by financial institutions to mitigate these risks, and the means of dissemination used by financial institutions to disclose information for their mitigation.

1.3. Methodology

The questionnaire was sent in December 2016 to a group of financial institutions, corresponding to more than 95 percent of the market for current accounts and consumer credit.

The selection of financial institutions surveyed took into account their market share and innovation strategy, and involved 20 banks, 11 specialised credit financial institutions, two financial payment institutions and one electronic money institution.

The questions addressed to financial institutions can be found in the Annex to this Report.

The replies to the questionnaire reflect the situation existing at the end of 2016. Considering that digital channels advance rapidly and continuously, the situation will have evolved in the meantime.

2. Analysis of the results

2.1. Provision of digital channels by financial institutions

Main results

Individuals

› The online channel is provided by 88 percent of the institutions and 9 percent intend to make it available.

› 62 percent of institutions provide mobile applications, but around 30 percent have plans to make them available in the future.

Companies

› The lower rate of availability on the online channel (65 percent) relative to individuals may be related to the business model of the institutions surveyed.

› 38 percent of the institutions provide APPs and 24 percent want to make them available.

Financial institutions were asked about the availability of retail digital products and services to individual and corporate customers through digital channels.

The answers to the questionnaire show that in the availability of digital channels there is a **greater bet of financial institutions on the online channel and in the individual customer segment**.

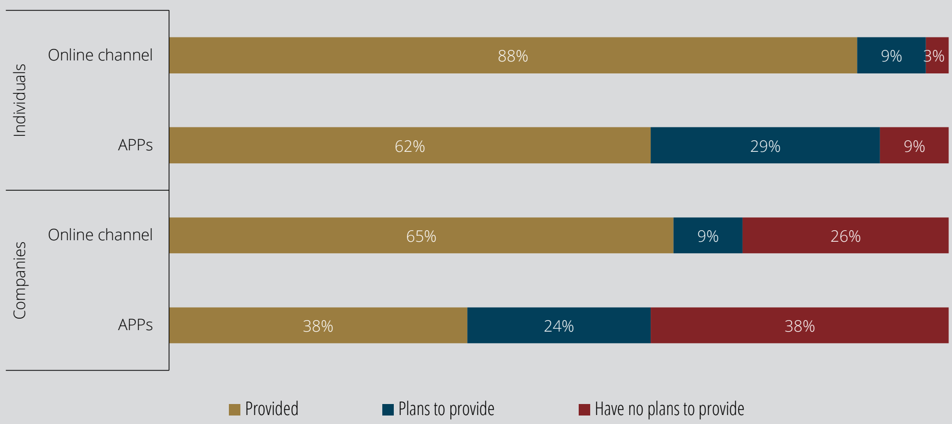
About 88 percent of the financial institutions surveyed provide banking products or services via the online channel for individual customers. In contrast, only 62 percent also provide them via APPs.

About 29 percent of financial institutions express their intention to make APPs available to individual customers, which suggests a **future growth of the mobile channel**.

In the case of corporate customers, there is also a more significant weight of financial institutions that make the online channel available (65 percent), compared to the mobile channel (38 percent), but both are less representative than in the individual segment.

In the business segment, 26 percent and 38 percent of financial institutions, respectively, do not have plans to make the online channel or the mobile channel available. This has to do with the fact that the business model of some financial institutions is focused on the individual customer segment.

Chart 5 • Digital channels provided by financial institutions



Question asked: Which digital channels are available to individual customers and companies?

2.2. Levels of adoption and use of digital channels

Main results

Individuals

- 54 percent and 14 percent of surveyed institutions report adoption rates of more than 50 percent of customers in the online channel and APPs, respectively.
- Significant differences between adoption and usage rates.

Companies

- In the online channel, the adoption rate of companies is higher than that of the individual customer segment.
- On mobile applications, only 8 percent of institutions indicate adoption rates of more than 50 percent of customers.
- The usage rates of companies are higher than those of individuals.

Financial institutions were also asked about the levels of adoption and use of digital channels by customers.

The adoption rates of the online channel are higher than those of mobile applications, for both individuals and companies. On the other hand, the adoption of the online channel by companies is higher than that of individual customers, contrary to what happens in the case of mobile applications.

About 54 percent of financial institutions which provide the online channel show that more than 50 percent of their individual customers have already adopted this channel, compared with 14 percent on mobile applications. Adoption rates of individual customers ranging from 25 to 50 percent are reported by 23 percent of financial institutions in the case of the online channel and only 10 percent in the case of mobile applications.

Most financial institutions that have APPs for individual customers (76 percent) refer to adoption rates of 25 percent or less. For 19 percent of financial institutions this ratio is less than 5 percent.

The adoption levels of companies to digital channels are also more significant in the online channel than on mobile applications. Most financial institutions (64 percent) report that more than 50 percent of their customers have already adopted the online channel, while only one institution has adoption rates of over 50 percent for mobile applications. By contrast, only 9 percent and 38 percent of financial institutions report adoption rates of less than 5 percent in the online channel and on mobile applications, respectively.

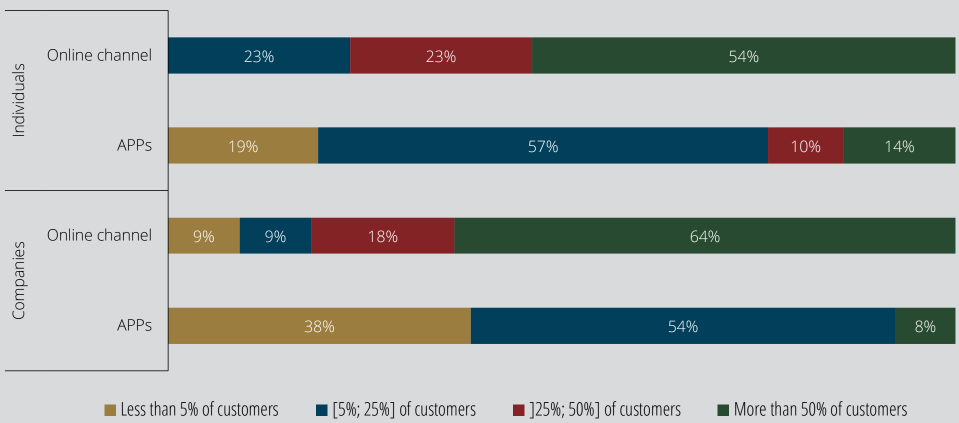


Chart 6 • Percentage of financial institutions that report adoption levels to digital channels by banking customers

Question asked: What is the estimate of the percentage of customers who adopted digital channels?

The replies to the questionnaire show that there is some disparity between the adoption rates of digital channels and their usage rates. Despite significant levels of online channel adoption, only 20 percent of financial institutions report that more than 50 percent of individual customers have effectively used this channel in the last three months. On mobile applications, 14 percent of financial institutions report individual customer adoption rates of more than 50 percent, but no institution identifies that more than 50 percent of customers have used them in the last three months.

In corporate customers, digital channel usage rates are also lower than their respective adoption rates, but the difference is less than that of individual customers. In the online channel, 46 percent of financial institutions report that it has been used in the last three months by more than 50 percent of corporate customers, with 64 percent indicating adoption rates of more than 50 percent.

The use of the online channel by companies is higher than that of individual customers: 46 percent of financial institutions that report usage by more than 50 percent of corporate customers compare with 20 percent in the case of individual customers. About 82 percent of financial institutions report usage by more than 25 percent of corporate customers, which is 70 percent for individual customers.

On mobile applications, there are no significant differences between the levels of adoption and usage. It should be noted that no institution reports that they are used by more than 50 percent of these customers and only 14 percent refer to usage rates by individual customers of between 25 and 50 percent.

2.3. Growth prospects for digital channels

Main results

Individuals

› About 40 percent of financial institutions report growth rates of more than 50 percent in the online channel and APPs.

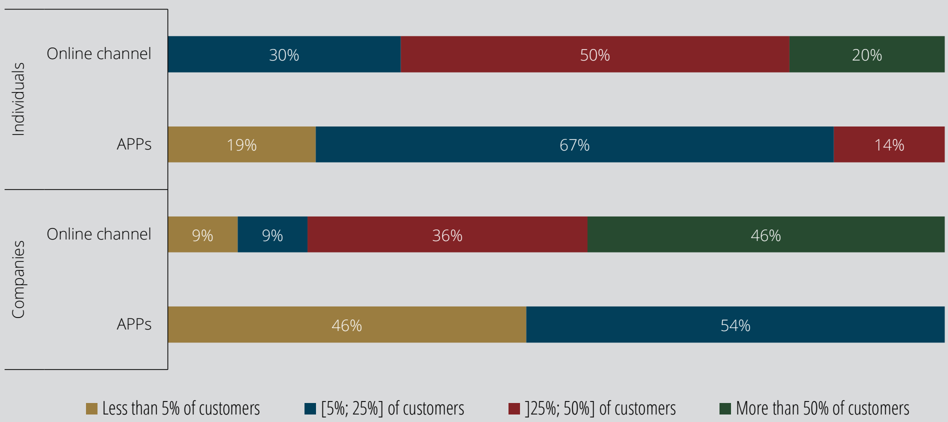
Companies

› 56 percent of financial institutions report growth rates of more than 50 percent in the online channel, in comparison to 19 percent on APPs.

Financial institutions were also questioned about the growth prospects of online and mobile channels.

Financial institutions have a high growth prospects in the use of digital channels by their customers in the coming years. More than 70

Chart 7 • Percentage of financial institutions that report usage levels of digital channels by customers in the last 3 months



Question asked: What is the estimate of the percentage of customers who used digital channels in the last 3 months?

percent of the financial institutions that provide or intend to provide products and services via online channels and mobile applications expect a growth rate of more than 25 percent in individual customers using these channels and around 40 percent of financial institutions point to a growth rate above 50 percent.

In corporate customers, financial institutions also anticipate significant growth rates in the usage of the online channel. More than 70 percent of financial institutions expect an increase of more than 25 percent and 56 percent point to growth rates of more than 50 percent. Expectations for growth in the use of mobile applications by corporate customers are slightly lower, but 57 percent and 19 percent of financial institutions estimate increases of more than 25 percent and 50 percent, respectively.

In terms of individual customers, financial institutions with a number of online channel users of between 25 and 50 percent hold the highest growth expectations for the coming years. Of the financial institutions with a usage rate of the online channel of between 25 and 50 percent of individual customers, 33 percent expect a growth of more than 25 percent, and 15 percent predict growth rates of more than 50 percent. On mobile applications, 36 percent of financial institutions foresee the highest growth rates, over 25 percent, despite having relatively low usage rates, between 5 and 25 percent.

Table 1 • Usage rate of the online channel and growth prospects in individual customers

		Growth plans				
		Less than 5%	[5%; 25%]	]25%; 50%]	More than 50%	Total
Percentage of customers that used the online channel in the last 3 months	Channel not available	0.0%	0.0%	3.0%	6.1%	9.1%
	Less than 5%	0.0%	0.0%	0.0%	0.0%	0.0%
	[5%; 25%]	0.0%	9.1%	6.1%	12.1%	27.3%
	]25%; 50%]	3.0%	9.1%	18.2%	15,2%	45.5%
	More than 50%	0.0%	6.1%	3.0%	9.1%	18.2%
	Total	3.0%	24.2%	30.3%	42.4%	100.0%

Questions asked: (i) What is your growth prospect in terms of the number of customers that will use digital channels in the coming years? (ii) What is your estimate in terms of the percentage of customers that used digital channels in the last 3 months?

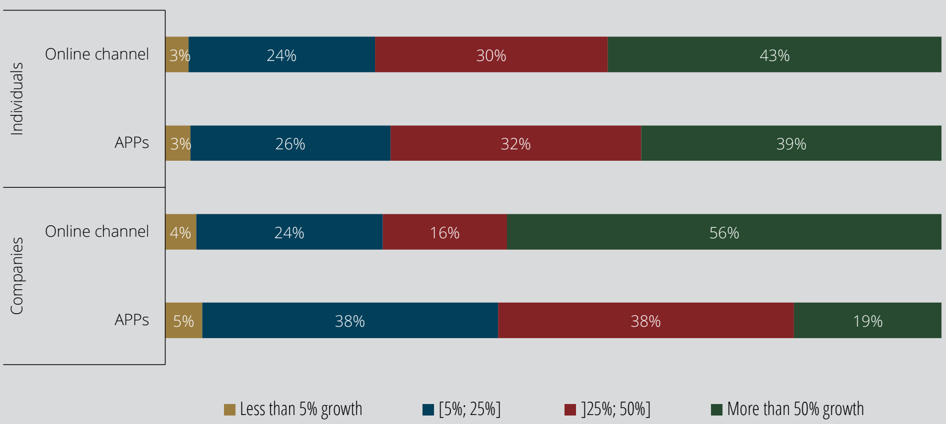


Chart 8 • Percentage of financial institutions that report growth prospects in the usage of digital channels in the coming years

Question asked: What is the growth prospect in terms of the number of customers that will use digital channels in the coming years?

Table 2 • Usage rates of mobile applications and growth prospects of individual customers

		Growth plans				
		Less than 5%	[5%; 25%]	]25%; 50%]	Mais de 50%	Total
Percentage of customers that used APPs in the last 3 months	Channel not available	3.2%	12.9%	6.5%	9.7%	32.3%
	Less than 5 %	0.0%	3.2%	3.2%	6.5%	12.9%
	[5 %; 25 %]	0.0%	9.7%	22.6%	12.9%	45.2%
	]25 %; 50 %]	0.0%	0.0%	0.0%	9.7%	9.7%
	More than 50 %	0.0%	0.0%	0.0%	0.0%	0.0%
	Total	3.2%	25.8%	32.3%	38.7%	100.0%

Questions asked: (i) What is the growth prospect in terms of the number of customers that will use digital channels in the coming years? (ii) What is your estimate in terms of the percentage of customers that used digital channels in the last 3 months?

2.4. Main reasons for providing digital channels

Main results

› Customer loyalty and attracting new customers are identified as the main reasons for providing digital channels, by 82 percent and 64 percent of institutions, respectively.

In order to evaluate the motivations of financial institutions to invest on digital channels, they were asked to identify three factors from a set of seven, and to reserve an option to identify other factors.

More than 80 percent of financial institutions refer to **customer loyalty** as one of the main reasons for investing in the digitalisation of banking products and services, and 64 percent indicate attracting new customers.

Reducing operational costs, notably with the branch network and with employees, and the importance of **promoting an image of technological innovation** are reported by about half of the financial institutions.

Only two financial institutions indicated the 'other' option, specifying 'convenience for customers' as a reason.

2.5. Limitations to the demand for digital channels

Main results

› The security risks in accessing digital channels are identified by 80 percent of institutions as the main obstacle on the demand side to the expansion of these new channels.

In the questionnaire, financial institutions were asked to order the following six reasons that could restrict customers' demand for digital channels, from the most relevant to the least relevant: (i) lack of interest of customers; (ii) perceived security risks; (Iii) low financial literacy; (iv) lack of knowledge of new technologies; (v) concern about data sharing; and (vi) lack of knowledge of the applicable regulatory framework.

Customer security concerns are identified by 79 percent of financial institutions as the first or second most relevant obstacle on the demand side to the expansion of digital channels. Almost half of the financial institutions (47 percent) idenfity it as the main restriction factor for this expansion. **Personal data sharing** is also among the two most important obstacles for about 50 percent of financial institutions, although only 9 percent indicate it as the main restriction to the development of digital channels.

Consumers' l**ack of knowledge about new technologies** (lack of digital literacy) is one of the two most important obstacles for 39 percent of financial institutions, being mentioned by about a quarter of financial institutions as the main obstacle to the expansion of digital channels.

On the other hand, lack of knowledge on the applicable regulatory framework and lack of interest by customers are the reasons that financial institutions consider to be less relevant to consumer demand for digital channels.

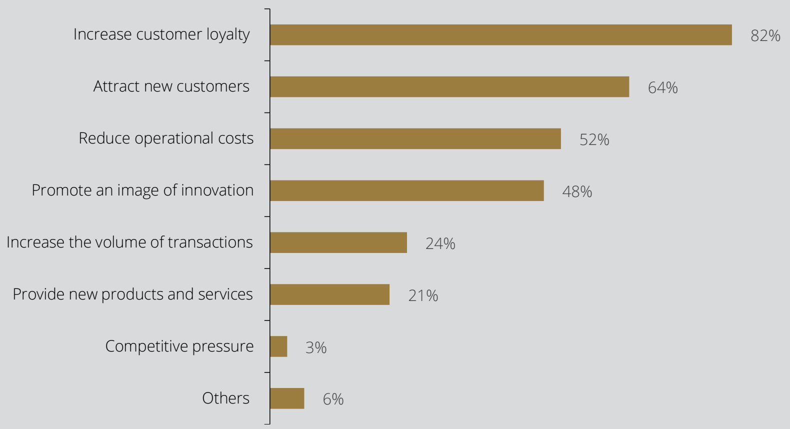


Chart 9 • Main reasons for financial institutions to provide banking products and services on digital channels (multiple answer)

Question asked: What are the three main reasons that lead you to provide or intend to provide banking products and services on digital channels?

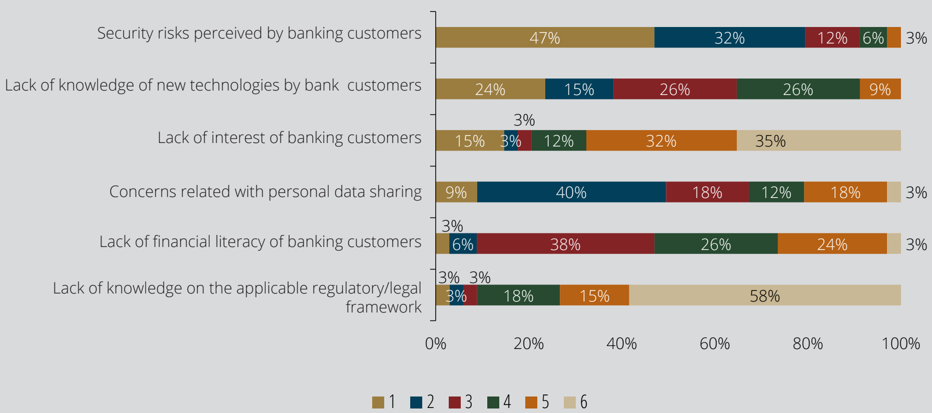


Chart 10 • Main obstacles on the demand side to the expansion of digital channels (multiple answer)

Note: Scale of '1 – Most relevant' to '6 – Less relevant'.
Question asked: Order the obstacles on the demand side to the expansion of digital channels.

2.6. Opening a current account

Main results

Functionalities available

- 70 percent of banks provide pre-contractual reporting procedures on the online channel and 15 percent on the APPs.
- 60 percent of banks allow customers to view the credit agreement and the possibility of downloading it or sending it to an email box and 10 percent on the APPs.
- 50 percent of banks allow customers to manually fill in their data on the online channel and 10 percent on the APPs.

Growth prospects

- The opening of a current account via digital channels is expected to grow significantly over the next few years.

In relation to the opening of a current account, the questionnaire wanted to identify the procedures used on digital channels in the different phases of the account opening process. Financial institutions were also asked about possible legal or regulatory obstacles to the digitalisation of the account opening process. This analysis considers the responses of the 20 banks that, in the exercise of their regular activity, collect deposits from their customers.

The results of the questionnaire indicate that **it is not possible to open a current account in a fully digital** and remote manner in any of the banks surveyed. However, some banks have developed tools that allow the digital opening of accounts, without the need for paper, in the agencies themselves. The **dematerialisation of the process** is a first step for all procedures to be carried out on the digital channels, so the new functionalities associated with the opening of a current account, reported by the surveyed banks, are presented in this analysis.

2.6.1. Entering the customer's personal data

In half of the surveyed banks it is possible to initiate the process of opening an account in the online channel through the **manual insertion by the customer of their personal data**. This functionality is only available via APPs in two banks. According to the intention of banks to offer this functionality, it is expected that in the near future it will be possible to carry out this procedure in 95 percent of banks, in the case of the online channel, and in 60 percent of banks, in the case of mobile applications.

Entering the customer's personal data by reading the citizen card chip is referred to as possible only through a card reading device in the branches of 15 percent of the banks surveyed, which can be performed via an online channel in the case of an institution. No bank allows this process to be carried out through a customer reader, that is, without going to an branch to carry out the procedure in person.

In terms of prospects for the near future, 45 percent of banks disclose their intention to use citizen card reading devices in branches to facilitate the introduction of customer personal data when the account is opened and 40 percent expect to do so using the customer's own reader. In both cases these functionalities will be associated with the online channel. Most banks, on the other hand, do not have plans to provide the possibility of reading the citizen card on the branch's reader or on the customer's own reader via APPs.

2.6.2. Digital identification and authentication

As implemented digital customer identification and authentication functionalities, respondent banks only indicate **gathering a scanned signature on the bank's tablet** and the use of **biometric data**. The digitalised signature on tablets is identified as being made available only by a bank in association with its online channel and by 15 percent using mobile applications. Two banks refer to the use of biometric data, such as the 'dash' and signature pressure, associated with their mobile channel.

Very significant developments are expected in the coming years in relation to the digitalisation of the current account opening process. In addition to the expansion of the gathering of a digitalised signature on a tablet or smartphone and the use of biometric data, mentioned by 35 to 45 percent of banks, more than half say that they intend to provide **electronic signatures, digital identification and authentication via videoconferencing and a one-time password (OTP)**.

Most banks admit that they do not have plans to offer functionalities such as the use of the citizen card chip and the IBAN from another bank with whom the customer already has a business relationship for the purpose of digital identification and authentication when opening a current account.

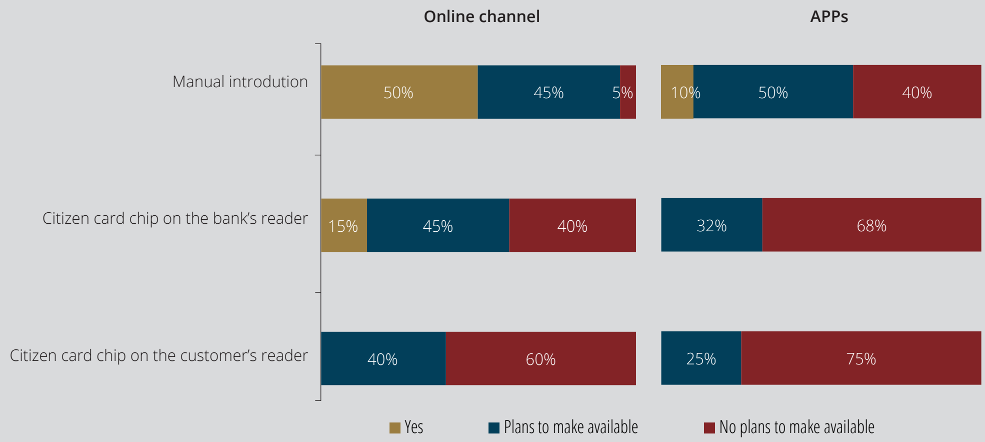


Chart 11 • Procedures related to the introduction of the customer's personal data when opening an account

Question asked: When opening a current account, please indicate the procedures available and/or to be made available in the future on digital channels regarding the introduction of the customer's personal data.

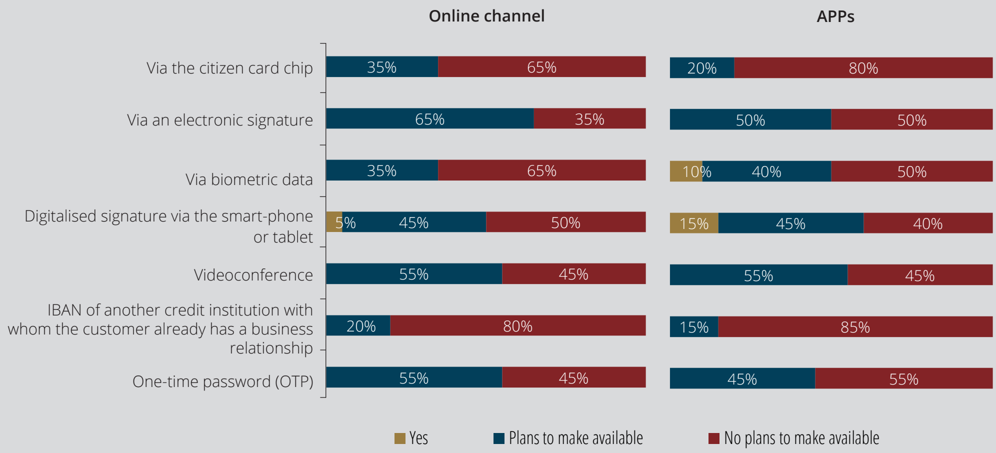


Chart 12 • Procedures regarding the digital identification and authentication of the customer when opening an account

Question asked: When opening a current account, please indicate the procedures available and/or to be made available in the future on digital channels regarding the digital identification and authentication of the customer.

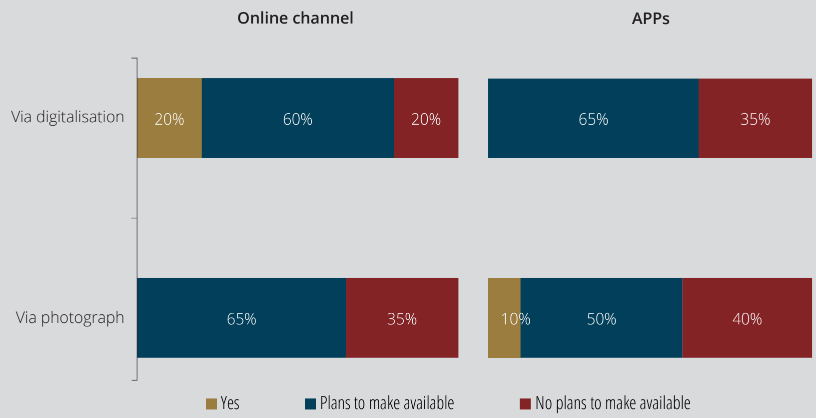
2.6.3. Uploading the documents necessary to open an account

Uploading documents necessary to open a current account is referred to as possible on the online channel via digitalisation in 20 percent of the banks surveyed and in the mobile channel through a photograph, in 10 percent of banks. Nevertheless, a significant percentage (between 50 and 65 percent) admits to having plans to make this procedure available on digital channels, through the digitalisation or photographing of documents.

2.6.4. Providing pre-contractual and contractual information and conclusion of the account opening agreement

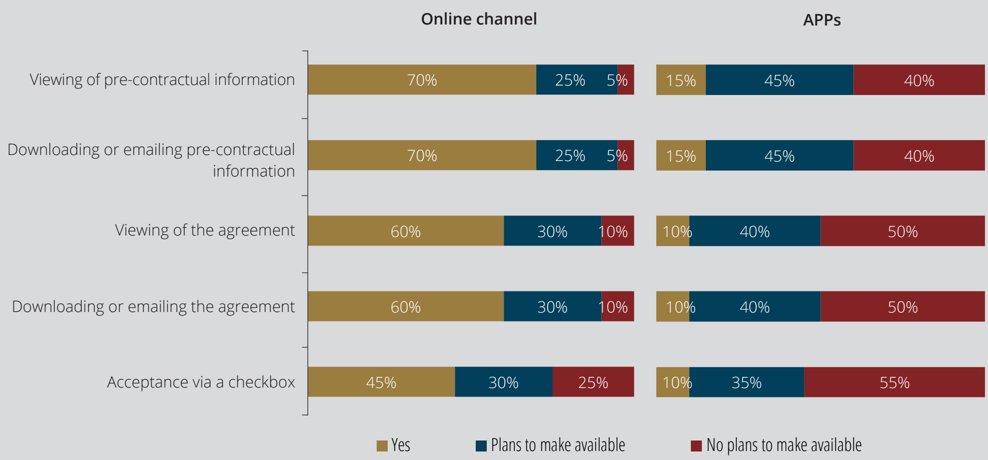
The results of the questionnaire indicate that customers can view pre-contractual information documents and receive them by email or download them through the online channel in 70 percent of banks. These functionalities are available on the APPs of 15 percent of the banks. However, 25 percent and 45 percent of banks, respectively, plan to make these functionalities available via the online channel and mobile applications.

Chart 13 • Uploading of the documents necessary to open an account



Question asked: When opening a current account, please indicated the procedures available and/or to be made available in the future on digital channels regarding the uplaoding of the documents necessary.

Chart 14 • Procedures regarding the provision of pre-contractual and contractual information and conclusion of the account opening agreement



Question asked: When opening a current account, please indicated the procedures available and/or to be made available in the future on digital channels regarding the provision of pre-contractual and contractual information and conclusion of the account opening agreement.

Viewing and downloading or emailing the account opening agreement is reported to be possible on the online channel of 60 percent of banks and on the APPs of 10 percent. More banks plan to implement these procedures (30 percent and 40 percent, respectively, on the online channel and APPs).

The acceptance of the conditions to open a current account via a checkbox is said to be available on the online channel of 45 percent of banks, compared to 10 percent in the case of APPs. This functionality is expected to grow significantly as 30 percent and 35 percent of banks state that they intend to implement the acceptance of conditions via checkbox, respectively, in the online channel and APPs.

2.6.5. Legal or regulatory obstacles to opening a current account

The main obstacle, identified by 70 percent of banks, is the need to prove the customer's identity by submitting original documents or certified copies, as a result of the rules regarding anti-money laundering and the financing of terrorism. The need to sign documents in person, the rules associated with the protection of personal data and the requirements associated with pre-contractual information duties and when entering into agreements are obstacles referred by 15 percent of banks.

2.7. Commercialisation of consumer credit

Main results

Functionalities available

- 46 percent of institutions provide pre-contractual reporting procedures on the online channel and 20 percent on APPs.
- 43 percent of institutions allow customers to manually fill in their data on the online channel and 13 percent on APPs.
- 33 percent and 40 percent of institutions, respectively, allow customers to view the credit agreement and to download it or send it via email on the online channel and 10 percent on APPs, for both functionalities.

Growth prospects

- A The possibility of entering into consumer credit agreements via digital channels will increase significantly in the future, in both online and mobile channels.

Financial institutions were questioned about the procedures on digital channels for entering into consumer credit agreements, as well as any legal or regulatory obstacles to their digitalisation. The responses from 19 banks and 11 specialised consumer credit institutions were analysed.

The results indicate that in terms of consumer credit agreements the tendency is also towards the **dematerialisation of processes**, even if they are not fully implemented at a distance. Some specialised credit institutions identified a set of procedures that are performed by the customer using an APP installed on a mobile device available to credit intermediaries. This development is directly related to the business model of these institutions, as these credit intermediaries are simultaneously points of sale, where customers are interested in entering into the credit agreement with the intermediary to finance the acquisition of a specific product.

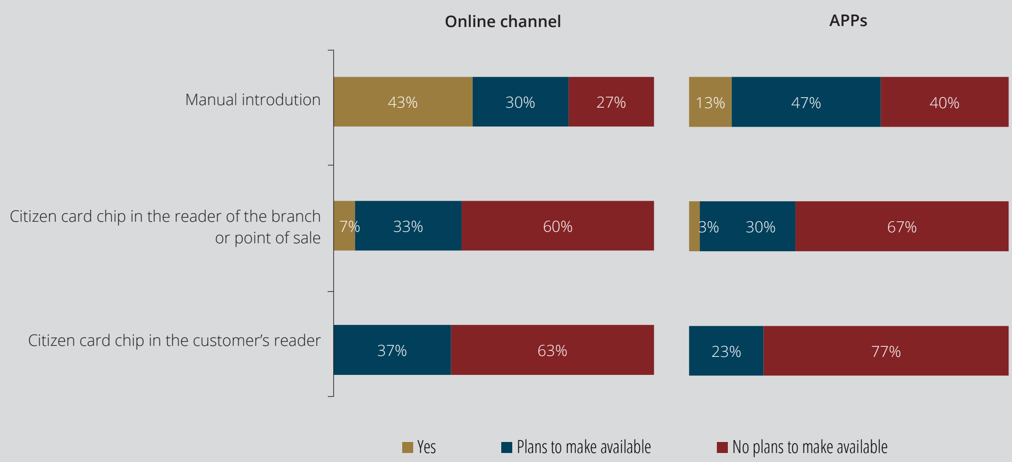
2.7.1. Entering the customer's personal data

Almost half of the financial institutions (43 percent) report that they allow customers to initiate the consumer credit process via the online channel through the **manual introduction of their personal data** by the customer and 13 percent of financial institutions claim to have this functionality available on mobile applications. A significant number of specialised credit institutions report that this functionality is available on the online channel (64 percent), compared with 32 percent for banks. This difference can be explained by the business model of banks that attract new customers mainly through the opening of a current account, while specialised credit institutions do so by entering into credit agreements with consumers. Of the financial institutions analysed, 30 percent and 47 percent, respectively, claim to have plans to implement the introduction of personal data by the customer in the online channel and mobile applications.

Two specialised credit institutions refer to gathering the customer's personal data from the citizen card chip through the credit intermediary's reader at the point of sale, which is associated with the institution's online channel. One of these institutions says it is possible to gather this data through a specific mobile application. About 30 percent of institutions say they intend to make it possible in the future to gather personal data on digital channels through the citizen card reader available at the branch or point of sale.

With regard to the reading of personal data through the citizen card chip in the customer's reader, no institution claims to make this available, but 37 percent and 23 percent, respectively, have plans to do so on the online and mobile channel.

Chart 15 • Procedures regarding the introduction of the customer's personal data in consumer credit agreements



Question asked: In the consumer credit process, please indicate the procedures available and/or to be made available in the future on digital channels relating to the introduction of the customer's personal data.

2.7.2. Digital identification and autentication

In digital identification and authentication, **the use of a one-time password (OTP)** in the process of granting new credit to consumers is highlighted. This procedure is provided by 17 percent of the financial institutions analysed in the online channel and by one institution in the mobile channel. The use of an OTP is expected to increase in the future, as around 40 percent of the financial institutions analysed report having plans to make this procedure available on digital channels.

The electronic signature on the credit agreement on digital channels is only mentioned as being used by two specialised credit institutions in the online channel. However, about half of the financial institutions surveyed admit to having plans to make the electronic signature functionality available on digital channels.

Gathering a signature via a tablet available at the point of sale of the credit intermediary is referred to by two specialised credit institutions, in association with its online channel and by one specialised credit institution via a mobile application. It is expected that gathering signatures on a tablet will be more frequent in the future, since the proportion of institutions that mention having plans to make this procedure available is significant (43 percent associated with the online channel and 40 percent through mobile applications).

Only one institution mentions using the citizen card chip in both channels for the digital identification and authentication of customers in consumer credit agreements. In the online channel, almost half of the financial institutions (47 percent) indicate that they intend to make this functionality available. This percentage drops to one third in the case of mobile applications.

The identification and authentication of customers via biometric data is indicated by only one specialised credit institution, which refers to the collection of information on the 'stroke' of the customer's signature in a device at the credit intermediary's point of sale. About one-third of financial institutions say they have plans to make this functionality available, both on the online channel and on APPs.

Although no institution has implemented customer identification and authentication through videoconferencing, a significant proportion indicate plans to do so in the future (40 percent on the online channel and 33 percent on APPs).

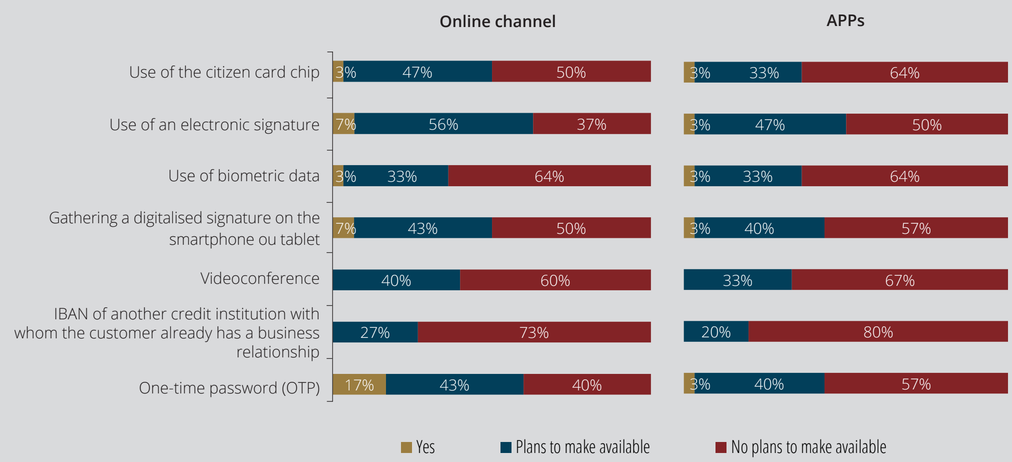


Chart 16 • Procedures regarding to the digital identification and authentication of customers in consumer credit agreements

Question asked: In the consumer credit process, please indicate the procedures available and/or to be made available in the future on digital channels relating to the customer's digital identification and authentication.

The identification and authentication of the customer by videoconference should also include the use of biometric data, such as facial recognition and the comparison of this data with the photograph on the citizen card, and the use of a one-time password to mitigate the risks of fraud.

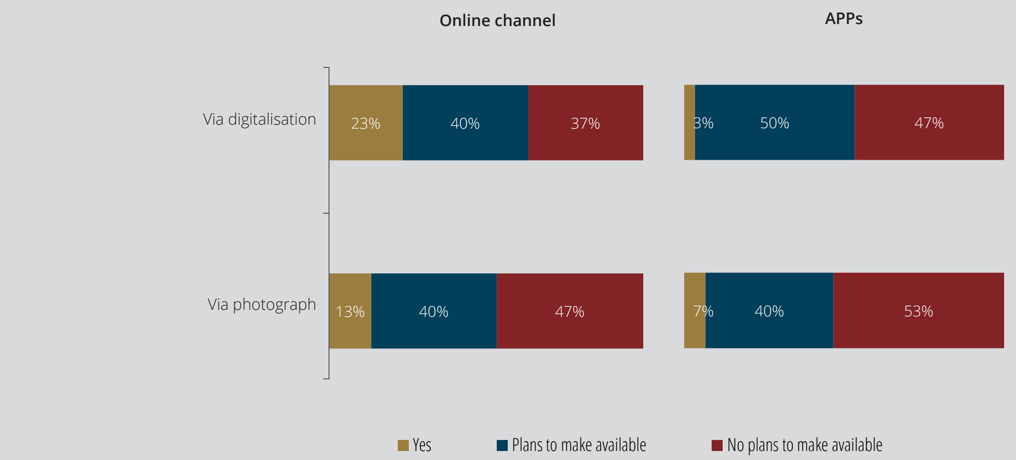
No institution refers to identifying and authenticating the customer through the IBAN of another institution with which they already have a business relationship, but 27 percent and 20 percent, respectively, intend to do so in the online channel and in the mobile application.

2.7.3. Uploading of documents necessary for consumer credit agreements

The functionalities of uploading documents required for consumer credit agreements are referred to as being available on the online channel by 23 percent of financial institutions through digitalisation and by 13 percent through photographs.

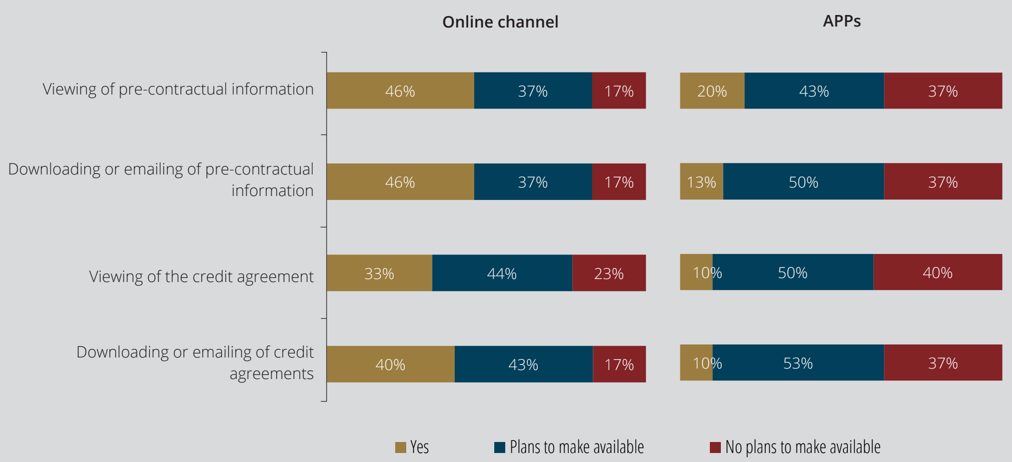
On mobile applications, only two financial institutions indicate some kind of document upload. However, a significant proportion of financial institutions (between 40 and 50 percent) say they have plans to make this feature available on digital channels.

Chart 17 • Uploading of documents required for consumer credit agreements



Question asked: In the consumer credit process, please indicate the procedures available and/or to be made available in the future on digital channels relating to the uploading of documents required.

Chart 18 • Procedures regarding the provision of pre-contractual and contractual information and conclusion of consumer credit agreements



Question asked: In the consumer credit process, please indicate the procedures available and/or to be made available in the future on digital channels relating to the provision of pre-contractual and contractual information and conclusion of consumer credit agreements.

2.7.4. Provison of pre-contractual and contractual information and conclusion of consumer credit agreements

About half of the financial institutions (46 percent) indicate that they provide their customers with the possibility of **viewing and receiving pre-contractual information via email or download in the online channel**, with 37 percent of financial institutions plan to make these functionalities available. On mobile applications, these functionalities are less frequent, 20 percent in the case of pre-contractual information documents and 13 percent in the case of downloading or emailing this information, although a significant proportion of financial institutions plan to do so in the future (43 percent and 50 percent, respectively).

About 33 percent and 40 percent of financial institutions allow viewing and downloading or emailing of the credit agreement online, and about 40 percent of financial institutions indicate plans to make these functionalities available in the future. On mobile applications, only 10 percent of financial institutions enable the viewing and downloading or emailing of the credit agreement, but about half of the financial institutions surveyed intend to do so in the short term.

2.7.5. Legal or regulatory obstacles to consumer credit agreements

About a third of the financial institutions identify as constraints to the digitalisation of the consumer credit process aspects related to proving the customer's identification data.

Pre-contractual and contractual reporting obligations are identified by 20 percent of credit institutions, and are the second most cited factor in inhibiting the development of digital channels in consumer credit.

Some institutions (17 percent) mention doubts about the compatibility between the digital signature and the legal rules for the signing of credit agreements, the constitution of guarantees in the context of credit agreements and also on the admissibility of judicial enforcement of credit agreements concluded through digital channels.

The requirements associated with the protection of personal data are reported by 10 percent of credit institutions.

2.8. Access to payment services

Main results

Payment services available

- 81 percent of the surveyed institutions provide online payment services and 56 percent already do so through APPs.
- 56 percent of institutions allow the issuance of virtual cards in the online channel.

The questionnaire sought to identify payment services provided through digital channels, in particular through the use of homebanking, virtual cards and wallets, as well as possible legal and regulatory obstacles to their expansion.

In this analysis, we considered the responses given by the institutions that provide payment services, which in the selected sample correspond to 20 banks, 9 specialised credit institutions, 2 payment institutions and 1 electronic money institution.

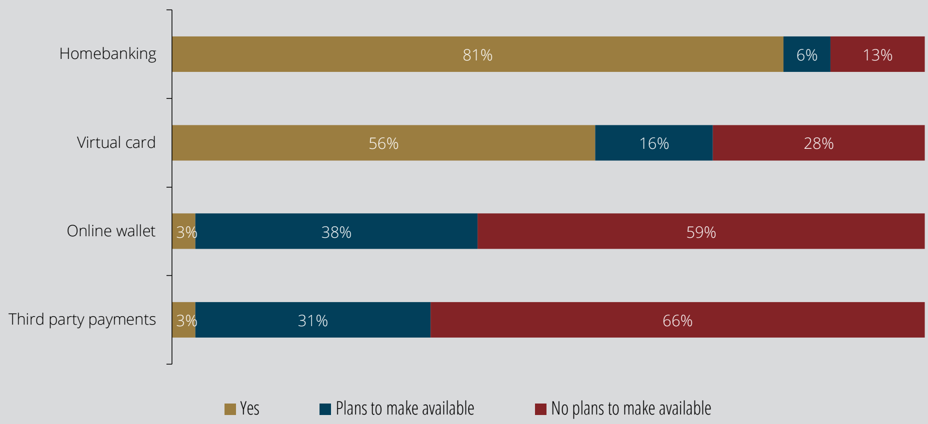
2.8.1. Payment services provided on digital channels

Payment services such as credit transfers, the payment of goods and services or the activation of direct debits are available in the **homebanking** of the financial institutions surveyed. Of the 32 financial institutions surveyed, 81 percent provide some of these payment services through homebanking and 6 percent have plans to do so in the future. All banks and payment and electronic money institutions provide payment services in homebanking, which is justified by the nature of the activity itself and by the dynamism of this channel in recent years. Financial institutions that do not have plans to provide payment services in the homebanking (13 percent) are specialised credit institutions, where credit card is the only payment instrument that they commercialise.

The issuance of **virtual cards** is possible in 56 percent of financial institutions through the online channel, with 16 percent showing plans to make this payment service available. Of the banks, 75 percent issue virtual cards. Only two specialised credit institutions and one payment institution make this service available. On the other hand, only one surveyed institution identifies itself as the creator of the virtual card itself, with the rest acting as distributors of this payment service.

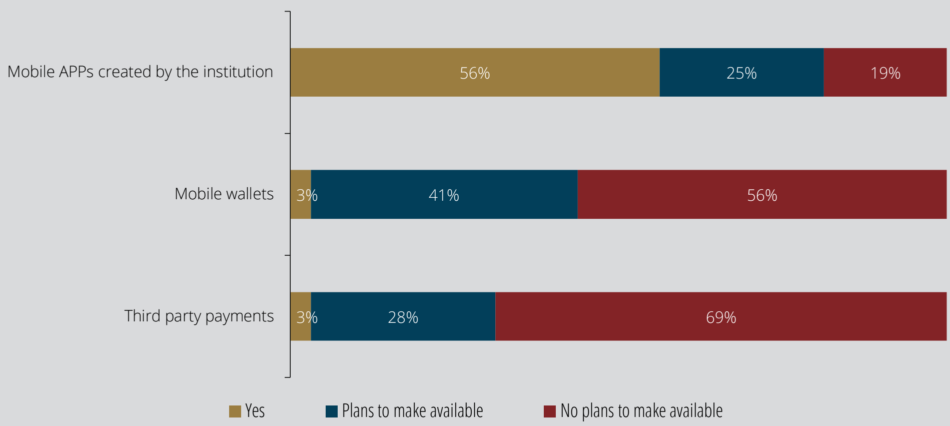
More than half of the financial institutions (56 percent) provide **payment services through APPs** developed by the institution itself. A significant proportion of banks (80 percent) provide

Chart 19 • Online payment services



Quesion asked: Please indicate which payment services are available on the online channel or for which there are plans to make them available on digital channels.

Chart 20 • Payment services on APPs



Question asked: Please indicate which payment services on the mobile channel are available or for which there are plans to make them available on digital channels.

payment services through a mobile application but only one specialised credit institution and a payment institution do so. However, 25 percent of institutions have plans to make payment services available through their APPs. In addition to the APPs created by the institutions themselves, 38 percent of the institutions surveyed act as distributors of payment services through APPs developed by third parties. Around 20 percent of the banks surveyed still do not provide payment services through APPs, with half of them reporting that they do not plan to do so in the near future.

Payment services using virtual wallets associated with accounts or other payment instruments **(wallets)** and entities that initiate payments at the customer's request **(third party payments)** are made available by only one payment institution, either through the online channel or through the mobile channel. However, 38 percent and 31 percent of institutions report having plans to make payment services available on the online channel, respectively, through wallet and third-party payments. In the mobile channel, these percentages are 41 percent and 28 percent, respectively.

2.8.2. Obstacles to the digitalisation of payment services

According to the replies obtained, the legislation applicable to payment services does not pose significant obstacles to their digitalisation.

Only 9 percent of financial institutions refer to the rules for the prevention of money laundering and terrorist financing, in particular the requirements for identifying customers and the source of the funds, as an obstacle to the provision of services through digital channels. The same percentage of financial institutions refers to the fact that the transposition of the Payment Services Directive (PSD2) into the national legal order, scheduled for early 2018, creates additional challenges for payment services on digital channels.

2.9. Security risks

Main results

Security risks

- Phishing, identity theft and malware are the main security risks identified.

Risk mitigation measures

- Time-out for session inactivity and validation of transactions by SMS token or token and encryption are the main risk mitigation measures implemented by institutions.
- About half of the institutions implement 5 or more risk mitigation mechanisms.

Dissemination of customer information

- The use of pop-ups or banners in homebanking or the institutional internet site are the main means of information on the subject of security on digital channels.
- The moment customers subscribe to digital channels is also used to inform customers about secure procedures.

The questionnaire sought to identify the main security risks in the use of digital channels, the mechanisms implemented by the financial institutions to mitigate these security risks and the means that have been used by the 34 financial institutions surveyed to inform customers about security issues on digital channels.

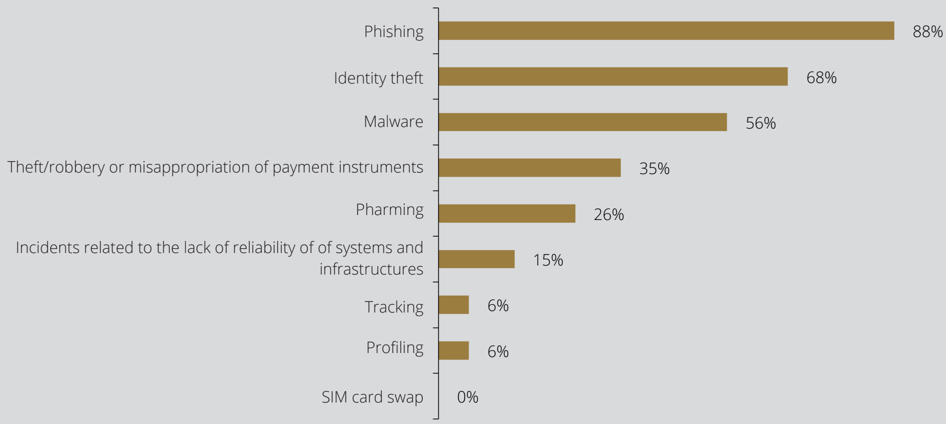
Phishing attacks are identified by 88 percent of the financial institutions surveyed as one of the top three security risks in the use of digital channels.

Identity theft is another of the top three security risks indicated by about 68 percent of financial institutions.

About 56 percent of financial institutions identified **malware** as one of the top three security risks. In addition, 35 percent of financial institutions identified theft, robbery or misappropriation of payment instruments as one of the three main security risks in the use of digital channels.

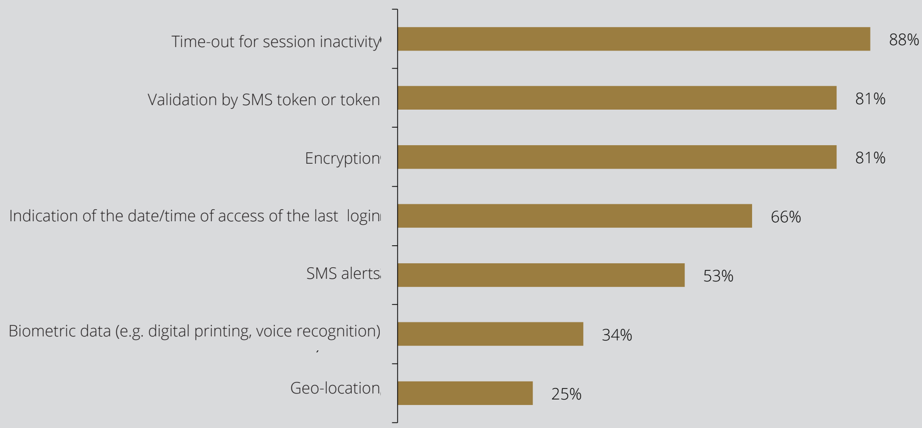
Security risks have been mitigated by financial institutions through the implementation of various mechanisms. On digital channels, 88 percent of financial institutions establish that customer logins expire due to session inactivity **(time-out)**, 81 percent of financial institutions validate the transactions performed by clients by token (e.g. code sent via SMS) and 81 percent use **methods of encrypting information**, i.e. the information is encrypted to prevent all those who do not have the 'key' from reading it. This increases the security of the information exchanged. The use of biometric and geo-location data was implemented by a smaller number of financial institutions (34 percent and 25 percent, respectively).

Chart 21 • Thee main security risks identified by customers of digital channels (multiple answer)



Question asked: Please identify the three main security risks related to the use of digital channels.

Chart 22 • Mechanisms implemented to mitigate security risks (multiple answer)



Question asked: Please indicate the mechanisms implemented to mitigate the security risks for banking customers associated with digital channels.

The combination of several security mechanisms contributes to decrease the likelihood of incidents on digital channels. Only 9 percent of institutions adopt only one or two risk mitigation mechanisms. About 44 percent of financial institutions have three or four functionalities and about 47 percent indicate they have five or more mechanisms in place. From the group of financial institutions surveyed, all banks have three or more functionalities that aim to mitigate security risks.

In order to promote security information on digital channels, financial institutions have focused on actions directed directly at effective users of this type of channels: 82 percent have pop-ups or information banners in homebanking or on the institutional website and the same percentage provides information to customers about safe procedures when subscribing digital channels.

Newsletters and emails to customers about digital channel security are reported by 52 percent of financial institutions, while use of social media or the provision of brochures in branches are reported by 12 percent of financial institutions. Only 6 percent use the media to enlighten customers on these issues.

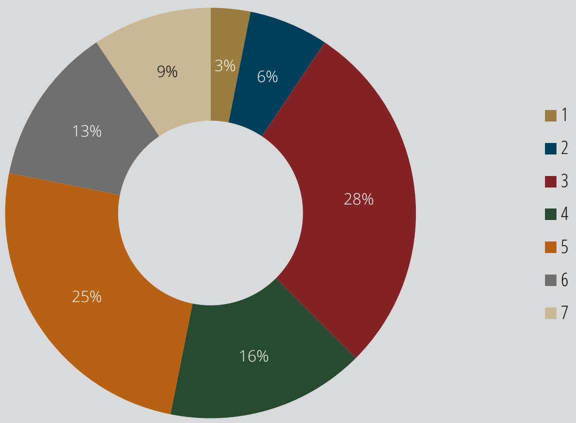


Chart 23 • Number of mechanisms implemented to mitigate security risks

Question asked: Please indicate the mechanisms implemented to mitigate security risks to banking customers, associated to digital channels.

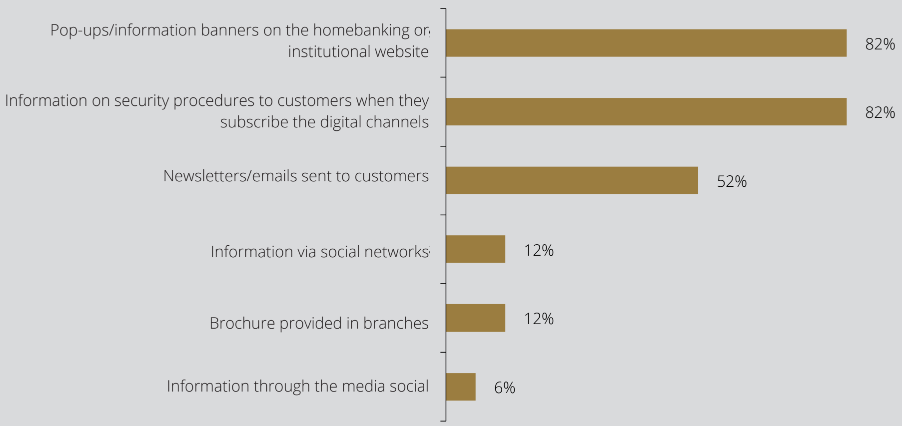


Chart 24 • Channels used to inform customers about security issues on digital channels (multiple answer)

Question asked: Please identify the channels used to inform customers about security issues on digital channels (risks and forms of mitigating these risks).

Glossary of terms associated with digital channels

Term	Definition
APP	Short for Application. Typically, specialised software developed for a mobile device, such as a smartphone or tablet, for a specific purpose.
Digital channel	Includes the online and mobile channel.
Geo-location	Identification of the geographical location of an object, namely an Internet-connected device.
Homebanking	Access to a set of banking products and services (e.g., viewing balances and transactions and making credit transfers) through the internet. Homebanking is accessed through a browser (via smartphone, tablet or computer).
Identity theft	Misappropriation of personal information of the bank customer with a fraudulent purpose.
Malware	Malicious software designed to affect the normal operation of devices (e.g., smartphone or computer) or to collect personal information of banking customers.
Mobile channel	Customer access channel to products and banking services provided by the institution through mobile phone, smartphone or tablet and via APP or SMS.
Mobile third-party payments	Service of initiation of payments through a third entity made at the request of a bank customer that has a payment account domiciled in another entity. To access this service, the bank customer must install their APP on their mobile device.
Mobile wallet	Set of procedures agreed between the wallet supplier and the bank customer allowing them to carry out banking operations from the payment instruments or associated accounts. To use the mobile wallet, the customer must first download an APP.
Online channel	Customer access channel to the products and banking services provided by the institution via the internet (browser).
Online third-party payments	Service of initiation of payments through a third entity made at the request of a bank customer that has a payment account domiciled in another entity.
Online wallet	Set of procedures agreed between the wallet supplier and the bank customer which allows the execution of banking operations from the payment instruments or associated accounts. To use the wallet, the customer must sign up with the respective supplier.
Pharming	Fraudulent method consisting of redirecting the bank customer to a false site or a 'false' APP with the appearance of a trusted site or APP ('mirror pages' or 'mirror APPs') with the intention of obtaining confidential customer information.
Phishing	A fraudulent method which is intended to persuade the bank customer to provide confidential information, such as username, passwords and security credentials, in particular by sending apparently trustworthy emails or mobile messages (SMS).
Profiling	Aggregation of customers' personal data in order to identify their consumption habits, interests and other personal information for a fraudulent purpose.
SIM card swap	Fraudulent method that occurs when the mobile bank customer device is attacked and the respective calls and SMS are redirected to the attacker's mobile device.
Tracking	Access to the bank customer's browsing history (e.g. using a persistent type of cookies) for fraudulent purposes.
Virtual card	Card that does not exist physically, which allows payments to be made on digital channels, sometimes showing a certain period of validity and a maximum amount of use. This card may be associated with a physical debit or credit card.

Note

1. For the purposes of this analysis, only institutions that collect deposits in the course of their regular business were classified as 'banks'. On the other hand, 'specialised credit institutions' are those institutions whose main activity is the granting of credit, regardless of their legal form (i.e., although some of these institutions are entitled to receive deposits, they do not do regularly).

Annex – First questionnaire on bank products and services on digital channels

Framework

The 'Questionnaire on Banking Products and Services on Digital Channels' (hereinafter referred to as 'questionnaire') is an initiative of Banco de Portugal and aims to collect information on the use of digital channels for the commercialisation of retail banking products and services by credit institutions.

This is not an exhaustive questionnaire, but rather aims to enable Banco de Portugal to carry out a first survey on the digitalisation of retail banking products and services in Portugal.

Through its banking conduct supervision, Banco de Portugal has been monitoring the growing supply of retail banking products and services on digital channels by the institutions supervised by it. Technological innovation and increased consumer demand for these channels, characterised by greater speed and convenience, have stimulated the growing availability of more and more banking products and services on digital channels. The use of digital channels also makes it possible to reduce operating costs and to optimize the branch network and the number of employees.

At an international level, financial digitalilsation has been driven not only by new players, but also by incumbents, which often cooperate with financial technology companies (Fintechs). There are also exclusively digital banks, whose business model is based on technological platforms and the interaction with banking customers is exclusively based on digital channels. Financial digitalisation has increasingly assumed a global scale, especially with the expansion of e-commerce in developed and developing countries.

This questionnaire therefore forms part of Banco de Portugal's set of initiatives, with a view to monitoring retail banking products and services marketed through digital channels.

Objectives

Through this questionnaire, Banco de Portugal aims to:

- identify the main retail banking products and services available on digital channels, such as the opening of a current account, the conclusion of a credit agreement with consumers and the provision of payment services; and
- assess obstacles to the development of digital channels, both on the demand side by customers and on the supply side, in particular any constraints in terms of the legal and regulatory framework.

Section 1 – Identification

1.1 Institution

Designation

Institution code

1.2 Spokesman

Name

Position/Unit

Email

Telephone

Section 2 – Development of digital channels

2.1 Mark with an 'X' the digital channels made available to individual customers and companies.

		Individuals			Companies		
		Yes	No		Yes	No	
			Plans to make available	No plans to make available		Plans to make available	No plans to make available
Online channel							
Mobile channel	APPs						
	SMS						

2.2 If you ticked 'Yes' or 'Plans to make available' in question 2.1, mark with an 'X' the three main reasons why the institution provides or expects to provide banking products and services on digital channels.

Increase customers loyalty

Reduce operational costs

Attract new customers

Promote an image of innovation

Provide new products and services

Increase the volume of transactions

Pressure from competitors

Other – Which?

2.3 If you answered 'Yes' to question 2.1, mark with an 'X' the estimate in terms of percentage of customers who have already subscribed to digital channels.

		Online channel	Mobile channel	
			APPs	SMS
Individuals	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			
Companies	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			

2.4 If you answered 'Yes' to question 2.1, mark with an 'X' the estimate in terms of percentage of customers who used digital channels in the last 3 months.

		Online channel	Mobile channel	
			APPs	SMS
Individuals	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			
Companies	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			

2.5 Mark with an 'X' your forecast in relation to the growth of the number of customers who willl use digital channels in the next few years.

		Online channel	Mobile channel	
			APPs	SMS
Individuals	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			
Companies	<5%			
	[5%; 25%]			
	]25%; 50%]			
	>50%			

2.6 Order the following obstacles on the demand side to the expansion of digital channels (number 1 indicates the most relevant obstacle and number 6 least relevant obstacle).

Lack of interest of banking customers	
Security risks perceived by banking customers	
Lack of financial literacy of banking customers	
Lack of knowledge of new technologies of banking customers	
Concern regarding the sharing of personal data	
Lack of knowledge on the legal/regulatory framework applicable	

2.7 If applicable, please specify other obstacles to the expansion of digital channels, besides those identified in question 2.6.

Section 3 – Current account

When opening a current bank account, please mark with an 'X' the procedures available and/or to be made available in the future on digital channels.

3.1 Introduction of the customer's personal data

	Online channel			Mobile channel		
		No			No	
	Yes	Plans to make available	No plans to make available	Yes	Plans to make available	No plans to make available
Manual introduction of the customer's personal data						
Reading of personal data via the citizen card chip via the branch's reader						
Reading of personal data via the citizen card chip via the customer's reader						

3.1.1 In addition to those mentioned in question 3.1, does the institution provide any further procedure on digital channels regarding the introduction of the customer's personal data?

3.1.2 Identify and describe any legal or regulatory obstacles to the introduction of the customer's personal data when opening a current account through digital channels.

3.2 Digital identification and authentication

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Use of the citizen card chip						
Use of a digital signature						
Use of a qualified electronic signature[a]						
Use of biometric data						
Gathering of a digitalised signature on a smartphone or tablet						
Videoconference						
IBAN of another credit institution with which the customer already has a business relationship						
One-time password (OTP)						

Note: (a) In accordance with (EU) Regulation No. 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market, which amends Directive 1999/93/EC ('EEAS Regulation').

3.2.1 In addition to those mentioned in question 3.2, does the institution provide any further procedure on digital channels regarding digital identification and authentication?

3.2.2 Identify and describe any legal or regulatory obstacles to digital identification and authentication when opening a current account through digital channels.

3.3 Uploading of documents necessary to open an account

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Through digitalisation						
Through photographs						

3.3.1 In addition to those mentioned in question 3.3, does the institution provide any further procedure on digital channels regarding the uploading of documents necessary to open an account?

3.3.2 Identify and describe any legal or regulatory obstacles to the uploading of documents necessary to open a current account via digital channels.

3.4 Provision of pre-contractual and contractual information and conclusion of the agreement

	Online channel			Mobile channel		
		No			No	
	Yes	Plans to make available	No plans to make available	Yes	Plans to make available	No plans to make available
Viewing pre-contractual information documents						
Downloading or emailing pre-contractual information						
Viewing the agreement to open a current account						
Downloading or emailing the agreement to open a current account						
Acceptance via a checkbox						

3.4.1 In addition to those mentioned in question 3.4, does the institution provide any further procedure on digital channels regarding the provision of pre-contractual and contractual information and conclusion of the agreement to open an account?

3.4.2. Identify and describe any legal or regulatory obstacles to the provision of pre-contractual and contractual information and conclusion of an agreement to open a current account via digital channels.

3.5 With regard to the procedures for opening a deposit account on digital channels, does the institution resort to any external entity? If yes, please indicate in which procedures and which entity.

Section 4 – Consumer credit

When concluding a consumer credit agreement, mark with an 'X' the procedures available and/or to be made available in the future on digital channels.

4.1 Introduction of the customer's personal data

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Manual introduction of personal data by the customer						
Reading of personal data via the citizen card chip via the branch's device						
Reading of personal data via the citizen card chip via the customer's device						

4.1.1 In addition to those mentioned in question 4.1, does the institution provide any further procedure on digital channels regarding the introduction of the customer's personal data?

4.1.2 Identify and describe any legal or regulatory obstacles to the introduction of the customer's personal data when concluding a consumer credit agreement via digital channels.

4.2 Digital identification and authentication

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Use of the citizen card chip						
Use of a digital signature[(a)]						
Use of a qualified electronic signature						
Use of biometric data						
Gathering of a digitalised signature on a smartphone or tablet						
Videoconference						
IBAN of another credit institution with which the customer already has a business relationship						
One-time password (OTP)						

Note: (a) In accordance with (EU) Regulation No. 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market, which amends Directive 1999/93/EC ('EEAS Regulation').

4.2.1 In addition to those mentioned in question 4.2, does the institution provide any further procedure on digital channels regarding digital identification and authentication?

4.2.2 Identify and describe any legal or regulatory obstacles to digital identification and authentication when concluding a consumer credit agreement.

4.3 Uploading of documents necessary to conclude a consumer credit agreement

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Through digitalisation						
Through photographs						

4.3.1 In addition to those mentioned in question 4.3, does the institution provide any further procedure on digital channels regarding the uploading of documents necessary for the consumer credit agreement?

4.3.2 Identify and describe any legal or regulatory obstacles to uploading the documents necessary to conclude a consumer credit agreement.

4.4 Viewing and concluding a consumer credit agreement

	Online channel			Mobile channel		
	Yes	No		Yes	No	
		Plans to make available	No plans to make available		Plans to make available	No plans to make available
Viewing pre-contractual information documents						
Downloading or emailing pre-contractual information						
Viewing the credit agreement						
Downloading or emailing the credit agreement						

4.4.1 In addition to those mentioned in question 4.4, does the institution provide any further procedure on digital channels regarding the viewing and conclusion of consumer credit agreements?

4.4.2 Identify and describe any legal or regulatory obstacles to viewing and concluding a consumer credit agreement on digital channels.

4.5 If applicable, identify the categories of consumer credit available on digital channels.

4.6 Does the institution provide specific credit products to consumers for exclusive marketing on digital channels? If yes, indicate the commercial name of these products.

4.7 With regard to the procedures for concluding a consumer credit agreement on digital channels, does the institution resort to any external entity? If yes, please indicate in which procedures and which entity.

Section 5 – Payment services

5.1 Of the following payment services, mark with an 'X' those that are available, or that you plan to make available and, if applicable, indicate their commercial name.

In column 'D/C', tick D if the institution acts only as a distributor of payment services, or C if the institution is simultaneously responsible for the creation and distribution of this service.

		Online channel			D/C
		Yes/Commercial name (if applicable)	No		
			Plans to make available	No plans to make available	
Payments in the oline channel	Homebanking				
	Virtual card				
	Online wallet				
	Third party payments				
Payments in the mobile channel	Mobile APPs				
	Mobile wallets				
	Third party payments				

5.2 If the institution commercialises payment services other than those mentioned above, please indicate and describe which.

5.3 Of the payment services that you have indicated as having plans to make them available on digital channels, describe any legal or regulatory obstacles that may hinder their implementation.

Section 6 – Security

6.1 Mark with an 'X' the three main security reasons related to the use of digital channels.

Identity theft
Profiling
Tracking
Malware
Phishing
Pharming
SIM card swap
Incidents related to the lack of reliability of systems and infrastructure
Theft/robbery or misappropriation of payment instruments
Others, identify

6.2 Mark with an 'X' the mechanisms implemented to mitigate the security risks for banking customers, associated with digital channels.

Biometric data (e.g. digital printing, voice recognition)
Encryption
Geo-localation
SMS alerts
Time-out for session inactivity
Indication of the date/time of access of the last login
Validation by SMS token or token
Others, identify

6.3 If applicable, mark with an 'X' the channels used to inform the customer about security issues on digital channels (risks and ways of mitigating those risks).

Information to customers when subscribing digital channels on security procedures
Pop-ups/information banners on the homebanking or institutional website
Newsletters/emails sent to customers
Brochure provided in branches
Information via the media
Information via social media
Others. Which?