

Retail banking market investigation

Quantitative analysis of searching and switching in personal current accounts

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This is one of a series of consultative working papers which will be published during the course of the investigation. This paper should be read alongside the updated issues statement and the other working papers which accompany it. These papers do not form the inquiry group's provisional findings. The group is carrying forward its information-gathering and analysis work and will proceed to prepare its provisional findings, which are currently scheduled for publication in September 2015, taking into consideration responses to the consultation on the updated issues statement and the working papers. Parties wishing to comment on this paper should send their comments to retailbanking@cma.gsi.gov.uk by **Wednesday 2 September 2015**.

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Introduction

1. This paper presents the quantitative analysis we carried out to study the searching and switching behaviour of customers in the market for personal current accounts (PCA). The basis of the analysis is a comparison between searchers and non-searchers, and switchers and non-switchers, with the aim of understanding the relevant differences between these different groups of customers. This analysis constitutes one source of evidence to inform our assessment of theory of harm 1, which questions among others whether there is sufficient customer engagement to foster effective competition.
2. In our analysis, we use anonymised customer information coming from two sources: (1) the results of a consumer survey, commissioned by the Competition and Markets Authority (CMA) and conducted by GfK; and (2) current account usage data provided by the banks. We also use information on branch locations provided by the banks. This information allows us to compare searchers and switchers with non-searchers and non-switchers on a variety of dimensions including their demographic characteristics, their beliefs and perceptions and their use of their PCA.
3. We carry out this comparison through both a descriptive analysis of the data and an econometric analysis. The descriptive analysis consists of an analysis of each relevant factor separately and provides a first source of evidence of what are the main factors relevant to understanding the difference between groups. The econometric model, by considering all factors simultaneously, allows us to assess the relative importance of the various factors that might drive searching and switching, and attach statistical significance to these results.
4. This paper is structured as follows:
 - (a) The first section discusses the motivation for the analysis and key findings.
 - (b) The second section is a general description of the data sources and definitions used throughout the paper.
 - (c) The third section presents the descriptive analysis of the factors that distinguish searchers and non-searchers, and switchers and non-switchers.
 - (d) The last section presents the results from the econometric analysis.

Summary of the analysis and key findings

5. In our analysis, we rely on observed customer characteristics and views, as expressed in the answers to the consumer survey, and analyse how these differ between searcher/switchers and non-searcher/non-switchers.
6. More specifically, in the analysis we look at the following broad categories of factors that may be related to the decision to search and/or switch:
 - (a) **Customer demographics:** including, age, gender, working status, income and level of education. Some of these characteristics are likely to be associated with the relative costs of searching and switching. So for example, someone with a higher level of education or better access to the internet may need less time to identify a good deal and be more likely to find the best option available to them.
 - (b) **Monetary features:** we use transaction data to look at customers' use of overdrafts and their level of credit holdings. We also rely on survey evidence regarding how important monetary aspects are for customers and their levels of satisfaction with charges. Monetary features are associated with expected gains or pull factors, so for example, customers that hold higher credit balances would benefit more from accounts offering better levels of credit interest and hence may be more likely to search and switch. However, monetary features may also be linked to barriers to searching and switching. For example, customers that use overdrafts could be less likely to search and switch if they are unable to transfer their overdraft facility to their new bank.
 - (c) **Quality of service:** including customer service, branch services and network, and online services. In particular, we look at how important these services are for customers, how often they use them, and what is their level of satisfaction with the service received from their previous and current bank. This analysis intends to shed light on expected quality gains from switching, as well as trigger factors associated with reduced levels of service, eg errors not being appropriately dealt with by the bank or the closure of a local branch.
 - (d) **Trigger factors:** we focus on a number of life events, including moving house, changing relationship or work status, and assess whether the probability of searching and switching is higher among customers who experienced such events. Changes in customers' personal circumstances may lead them to demand different services from their PCA and push them to search for, or switch to, a new PCA.

(e) **Cost of searching and switching:** as explained above, some of the aspects we look at in the previous points are associated with costs of searching and switching. Here, we focus particularly on the perceptions expressed by customers in our consumer survey around the difficulties associated with searching and switching. We complement this by looking at other aspects of their PCA usage that may also be associated with costs of searching and switching, including the level of activity in their main PCA and multi-banking.

7. The main conclusions of our analysis can be summarised as follows:

- (a) Searchers represent 17% of customers. However, 86% of them do not switch following searching. The estimated annual rate of switching is 3%. We also find that 25% of switchers do so without first looking around for alternatives.
- (b) The group of those that switched without searching present a different profile to other switchers in several dimensions.
- (c) Income: Low income customers are less likely to search, but no effect is found for switching.
- (d) Age: Customers aged between 55 and 64 are more likely to search but less likely to switch. Non-searcher/switchers are on average younger than non-searcher/non-switchers.
- (e) Education: Searchers have on average higher levels of education and are more financially literate. This is not true for all switchers. In particular, the group of non-searcher/switchers do not present higher levels of education and financial literacy than non-searcher/non-switchers.
- (f) Use of the internet: Having confidence in the use of the internet has a positive effect on the probability of searching. Moreover, customers who use internet banking are more likely to search than those that do not. We also find evidence of an impact of confidence in the use of the internet on switching but results are less robust than for searching.
- (g) Overdraft usage: Overdraft users are less likely to switch, while no effect is found on searching. However, it is important to note that information on overdraft usage comes from customers' current bank and therefore reflects usage after switching. The observed lower level of overdraft usage may be driven partly by customers who have not yet been able to secure an overdraft facility with their new bank. Also, the effect is not statistically significant in all our specifications.

- (h) Credit balances: Those holding higher credit balances are more likely to search, while no effect is found on switching. As with overdraft usage, information comes from customers' current bank, and therefore for switchers it reflects usage after switching.
- (i) Satisfaction with quality of service: Both searchers and switchers report higher levels of dissatisfaction with their previous bank regarding customer services than non-searcher/non-switchers.
- (j) Branches: There are no significant differences between searchers and switchers and non-searcher/non-switchers regarding the importance they attribute to branches and the frequency with which they use them. However, customers who have experienced the closure of a local branch are more likely both to search and to switch.
- (k) Trigger factors: Customers who have changed work status are more likely to search, while no effect is found for switching.
- (l) Account usage: Customers reporting a higher number of transactions (debits and credits) are less likely both to search and to switch.
- (m) Multi-banking is correlated with observed levels of searching and switching.

Data and definitions

8. The analysis presented in this paper is performed on a sample of 3,676 PCA customers,¹ which combines information from the consumer survey carried out by GfK and commissioned by the CMA ('the survey'), account usage data ('transaction data') and information on branch location ('branch data') provided by banks.
9. We have defined searchers and switchers on the basis of customers' response to the survey as follows:
 - (a) **Searchers** are customers who responded that they had looked around for a new PCA in the last 12 months.²
 - (b) **Switchers** are customers who responded that they had switched their main current account to a different bank in the last 12 months.³

¹ The number of customers considered in specific parts of the analysis may be smaller due to missing information.

² Identified on the basis of customers' response to survey questions F1 and F2.

³ Identified on the basis of customers' response to survey questions F3 and F4.

10. Therefore, we consider searching and switching activity during the 12 months prior to the survey field work conducted in February and March 2015. Throughout the paper we refer to this period as the '**switching period**'.
11. We exclude from the analysis customers who responded that they had searched or switched in the last two to three years, as well as those who responded that they had switched accounts within the same bank. Therefore, our '**reference group**' is the group of customers who have not searched or switched at any point in the last three years, and who have not switched accounts within the same bank.
12. Throughout the analysis, we refer to customers' '**current bank**' as the bank where customers hold their main current account, which corresponds to the bank and account with which they were sampled. We refer to customers' '**bank of origin**' as the bank where customers held their main current account before the switching period. For switchers, this is the bank they switched from and for non-switchers it is the same as their current bank.
13. All quantitative evidence presented in the paper has been calculated using sampling weights provided by GfK, with the exception of reported numbers of observations. Sample stratification is accounted for in the calculation of standard errors for hypothesis testing. Further details on data processing are provided in Appendix A. A list of all variables used in the analysis and their definition is provided in Appendix B.

Descriptive analysis

14. We first carry out a descriptive analysis of the differences between searchers and switchers, and non-searchers and non-switchers, looking in detail at each of the factors listed in paragraph 6. The analysis provides a first source of evidence on the main factors that characterise searchers and switchers, and is a basis for selecting the factors to consider in the econometric model. In this section we present the main results of this analysis. Further details are presented in Appendix C.
15. For the purpose of the descriptive analysis, we divide customers into four groups depending on whether they searched, switched or both:
 - (a) Searcher/switchers (SS).
 - (b) Searcher/non-switchers (SN).
 - (c) Non-searcher/switchers (NS).
 - (d) Non-searcher/non-switchers (NN).

16. As indicated in the previous section, the NN group constitutes our reference group to which we compare the other three.
17. Table 1 presents the unweighted number of customers in each of these groups and the weighted proportion of the sample they represent. In particular, switchers represent around 3% of the surveyed sample, and searchers represent 17% of the surveyed sample, with the majority of them (86%) not having switched following searching. We also note that around 25% of switchers do so without previously searching.

Table 1: Customer groups and sample sizes

<i>Groups</i>	<i>Proportion of surveyed sample (weighted, %)</i>	<i>Proportion of sample for analysis (weighted, %)</i>	<i>Number of observations (unweighted)</i>
Non-searcher/Non-switchers	65.4	79.1	2779
Searcher/Non-switchers	14.2	17.2	574
Searcher/Switchers	2.3	2.8	208
Non-searcher/Switchers	0.8	1	115
Excluded	17.4	-	873
<i>Total</i>	<i>100</i>	<i>100</i>	<i>4,549</i>

Customer demographics

18. We first look at a series of customer demographic indicators in order to compare the profile of searchers and switchers to those that do not search or switch. As it will be noted below, some of these customer characteristics are related to potential drivers or barriers to searching and switching.

Basic demographic indicators

19. The basic demographic indicators we analyse are: age, gender, working status and level of income.
20. The most noticeable differences between searcher/switchers and those who did not search/switch concern their level of income. We find that searchers, whether they switched or not, have a higher level of income than the other two groups:
 - (a) Higher earners, those with income of £50,000 or above, represent around 25% of the group of searchers, and only 17% and 14% of the non-searcher/non-switchers and non-searcher/switchers respectively.

(b) Conversely, the group of customers with income below £24,000 represents approximately 43% of searchers and 56% of non-searchers groups.⁴

21. With respect to the other indicators, we do not observe large differences between groups:

(a) Age: there are no significant differences in the age profile of those that searched and switched compared to the reference group, though we do observe that those who switched without searching are on average younger than the other groups. Also, the group of searcher/non-switchers presents a larger share of customers aged between 55 and 64 as compared to the reference group.

(b) Gender: there is a slightly smaller share of women in the searching and switching group than in the reference group.

(c) Working status: in general, we do not find any important differences in the employment profile of the different groups.

Education and financial literacy

22. We also look at three measures related to customers' level of education and financial literacy, namely: the highest level of education achieved, financial literacy and confidence in the use of the internet.

(a) Level of education is measured using responses to the survey. A higher level of education may make it easier to assess and process information regarding the relevant features of a PCA, and hence could imply lower costs of searching and switching.

(b) We measure financial literacy using answers to a question in the survey that aimed to test customers' ability to make a simple interest calculation. The ability to understand financial information and how interest rates work on a basic level is essential in order to understand certain monetary features of PCAs, particularly around overdraft costs and credit interest.

(c) We measure confidence in the use of the internet using responses from the survey on internet access and proficiency. Internet access and proficiency in its use is likely to be associated with lower costs of searching, as a large amount of information on PCA features is available online, potentially constituting an easily accessible source to gather

⁴ These differences between these groups and the reference group NN are statistically significant at 1% for SN and at 5 to 10% for SS.

information and make comparisons. In addition, many banks also offer the facility to open an account or even switch accounts on their websites, which means that internet confidence may also be associated with lower cost of switching.

23. The three measures show a clear difference between searchers, whether they switched or not, and the rest of the sample:
- (a) We find that a larger proportion of customers who searched have a university degree compared to those who did not search (between 45 and 50% of searchers have a degree, compared to 37% for customers who did not search or switch).
 - (b) As for financial literacy, 68% of customers who searched gave the correct answer to the survey question, compared to only 54% of those who did not search.
 - (c) Searchers also show higher levels of internet access and confidence in its use: around 90% of searchers report having confidence in the use of the internet, while this share is 74% for those who neither searched nor switched.
 - (d) The group of those that switched without searching present similar levels of education and literacy than those who did not search or switch.

Monetary features

24. We next look at account usage and customers' views on the monetary features of PCAs. In particular, we focus on overdraft usage and costs, and credit interest.⁵

Customer views on monetary features

25. In terms of customers' views on monetary features, we look at two measures:
- (a) customers' responses on the importance of level of charges; and
 - (b) customers' responses on the importance of interest rate on credit balances.
26. We do not find any noticeable differences between searchers and switchers and those who did not search or switch in relation to the importance of level of

⁵ We also look at the level of usage of transactions abroad, however we do not find any statistically significant differences between groups.

charges. However, searchers seem to differ significantly regarding the importance they assign to the interest rate paid on credit balances: around 55% of searchers consider interest rates on credit balances to be very important or essential, compared to 42% for non-searcher/non-switchers. These results suggest that searchers may be more likely to respond to monetary pull factors associated with credit interest payments or other financial rewards.

Account usage

27. Customers with high credit balances, and/or those who tend to use overdrafts, may have more incentives to search and switch for different offers in the market as potential monetary gains from switching are likely to be higher for these customers. At the same time, having an arranged overdraft facility or the ability to use an unarranged overdraft could act as a barrier to switching if these facilities are not transferred across to the new bank.
28. Specifically, we look at the following measures:
 - (a) Credit balances: average credit balances (when in credit) and share of high credit balance customers.
 - (b) Overdraft usage: share of overdraft users, average overdraft balance (when in overdraft), and average number of days in overdraft.
29. Results for credit balances are reported in Table 2 below.

Table 2: Credit balances

<i>Groups</i>	<i>Average credit balance (when in credit)</i>	<i>Share of high credit balance holders (%)†</i>
Non-searcher/Non-switchers	£2,872	23.9
Searcher/Non-switchers	£4,745***	30.9***
Searcher/Switchers	£4,445**	39.0***
Non-searcher/Switchers	£1,687***	20.1

Source: CMA analysis based on banks' transaction data and GfK survey data.

†High credit balance holders are defined as those holding an average credit balance equal or higher than the 75% percentile of the average credit balance of the complete transaction data for the last quarter of 2014 (£2,387.59).

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

30. Searchers tend to have larger average credit balances than non-searcher/non-switchers. Also, a larger proportion of the customers in this group are high credit balance holders. The opposite is true for those who switched without searching, who actually have lower average credit balances than those who neither searched nor switched.
31. Results for overdraft usage are presented in Table 3 below. We find that overdraft users account for a significantly smaller proportion of switchers

compared to non-switchers. There is a less clear story emerging from average overdraft balances, where the only significant difference with the reference group NN concerns those who switched without searching, who hold lower average overdraft balances. However, these results are likely to be correlated with the different income profile of customer groups and its impact on the ability to borrow. We also note that the number of days in overdraft does not vary significantly between groups.

32. These results suggest that overdraft users may be less likely to switch than non-overdraft users, which would support the idea that overdraft usage may act as a barrier to switching for some customers. However, we note that the information on overdraft usage comes from customers' current bank and reflects usage after switching. The observed lower level of overdraft usage may therefore partly be driven by customers who have not yet been able to secure an overdraft facility with their new bank.

Table 3: Overdraft usage

Groups	Overdraft users		Average overdraft balance (when in overdraft)	Average number of days in overdraft
	Share (%)	Number		
Non-searcher/Non-switchers	31.2	806	£523	14
Searcher/Non-switchers	29.0	152	£577	12
Searcher/Switchers	19.3***	42	£662	16
Non-searcher/Switchers	21.4**	31	£177***	11

Source: CMA analysis based on banks' transaction data and GfK survey data.

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence. Statistics are calculated using transaction data of the last quarter of 2014.

Satisfaction with the level of charges

33. We also look at customers' responses on satisfaction with the level of charges. We find that searchers and switchers report lower levels of satisfaction than those who did not search or switch regarding their bank of origin. If we look at the levels of satisfaction for switchers in their new bank, we find that the number of those that are dissatisfied is much smaller than for the reference group (8 and 11% for SS and NS respectively).
34. However, it should be noted that survey responses may be subject to ex-post rationalisation, that is, customers report levels of satisfaction that justify their past behaviour, and this may be driving the observed levels of satisfaction, particularly for switchers' new bank.

Quality of service

35. The analysis in this section focuses on the role of quality of service in the observed rates of searching and switching. Customers who search and switch

may do so not just because of potential monetary gains but also to improve the quality of service they receive from their bank.

36. In particular, we focus on three dimensions of quality of service:
- (a) customer service;
 - (b) branch network and services; and
 - (c) online services (internet banking and mobile apps).

Customer service

37. In the survey, customers were asked about the importance of the following aspects of customer service:
- (a) staff and customer service; and
 - (b) quality and speed of handling problems.
38. We find that both groups of switchers, SS and NS, report much higher levels of dissatisfaction than the reference group NN regarding their bank of origin. For example, with regard to staff and customer service, 20% of the SS group and 23% of the NS group express being dissatisfied, compared to only 2% in the NN group.
39. As for those who searched but did not switch, they also show significant differences compared to the NN group, although of a smaller magnitude. Among this group, 4% express being dissatisfied, compared to 2% for the NN group.
40. We note the same issues discussed in paragraph 11 regarding ex-post rationalisation also apply here.

Branch network and services

41. We do not find significant differences between the groups regarding the degree to which customers care about branches and the frequency in which they use them. The only significant difference is the proportion of customers indicating that they never use branches in the group of those who searched and switched, 14%, compared to the reference group NN, 7%.⁶

⁶ This difference is statistically significant at 5% confidence.

42. We also look at survey results concerning a local branch closure. This is an important element for understanding searching and switching since a local branch closure could work as a trigger factor for switching. The proportion of searchers, both SN and SS, who have experienced a local branch closure is significantly higher than the reference group NN.⁷

Online services

43. We analyse survey results regarding the importance and frequency of use of online applications, in particular, internet banking and mobile apps. Overall, we find that online services seem to be more relevant for searchers and switchers than for the reference group NN:
- (a) The group of searcher/switchers consistently rate higher on both importance and frequency of use of these services compared to the reference group NN. In fact, 72% of customers in this group report internet banking as very important or essential and 40% say so about mobile apps, as opposed to 58 and 31% for NN respectively.⁸ Moreover, 57 and 36% report using internet banking and mobile apps weekly, compared to only 39 and 25% for NN.⁹
 - (b) The results for searcher/non-switchers mirror those of SS for internet banking but not for mobile apps. As for non-searcher/switchers, mobile apps seem particularly relevant. In fact, 46% report mobile apps as very important or essential, and 40% use them weekly.¹⁰ As for internet banking, 64% indicate it is very important or essential, and 47% say they use it weekly.¹¹ The predominance of mobile apps over internet banking is likely to be related with the younger profile of this group, as can be seen in Figure 1 of Appendix C.

Trigger factors

44. In this section we focus on trigger factors associated with changes in customers' personal circumstances that may change their needs regarding banking services, and potentially push them to search and switch. We find that:

⁷ The share for SN and SS groups is 10 and 14% respectively as compared to 6% for NN, and both differences are statistically significant at 5%. The share for NS is 8% but this difference is not statistically significant.

⁸ These differences are statistically significant at 1% confidence.

⁹ These differences are statistically significant at 1 and 5% for internet banking and mobile apps respectively.

¹⁰ Both these shares are statistically significantly different from the NN shares at 5%.

¹¹ Both these shares are not statistically significantly different from the NN shares.

- (a) searcher/non-switchers and non-searcher/switchers present a higher proportion of customers reporting having changed work status compared to the reference group;
- (b) non-searcher/switchers also present a higher share of customers reporting having moved house compared to the reference group; and
- (c) we do not find significant differences in the frequency rate of these events for the searcher/switchers compared to the reference group.

Cost of searching and switching

45. In the previous sections we looked at certain customer characteristics and profiles that may be associated with costs or barriers to searching and switching, including the level of education and literacy, and overdraft usage. In this section, we extend this by looking at additional evidence relevant to this issue.

Customer perceptions regarding the difficulty to search and switch

46. We first look at customers' views on the ease or difficulty of searching and switching. In the survey we asked customers about their perceptions on four dimensions of the process of searching and switching PCA, namely:
- (a) finding out about features and charges;
 - (b) understanding different options;
 - (c) making comparisons; and
 - (d) the process of changing PCA.
47. The first three dimensions are associated with searching while the last one concerns the difficulty of actually switching current accounts. We find that in general searchers present a higher proportion of customers reporting that they expected the process to be easy and a lower share of those indicating that they expected the process to be difficult, as compared to the NN group.
48. If we look instead at cost of switching, we observe that a larger share of searcher/switchers indicate they expected the process to be difficult as compared to the reference group. This is a counterintuitive result and may be due to the biases these type of survey questions may be subject to; it is likely that respondents report their expectations in comparison to their actual experience of switching and, therefore, their responses are not really comparable to those of the reference group who have not had that

experience. Indeed, we find that on average, switchers found the experience of switching easier than they expected. This could be due to a proportion of customers not being aware of CASS¹² prior to switching.

49. Given the bias in customers' responses to these survey questions, for the purpose of the econometric analysis, we rely on objective customer characteristics that are related to difficulties in searching and switching, rather than reported perceptions.

Direct debits and other transactions

50. We also look at two indicators of PCA activity that may be associated with higher perceived costs of switching. We first look at the number of direct debits and standing orders in customers' main PCAs. The assumption behind this is that a customer who has more direct debits or standing orders may perceive switching accounts to be more difficult and time consuming, and hence be less willing to switch. The second indicator is the average number of transactions (debits and credits) in the current account per month. The assumption here is similar, a customer who uses their current account more intensively may perceive switching PCA to be more difficult or time consuming.
51. We find that:
- (a) searcher/non-switchers have a higher number of direct debits on average than the reference group, while no difference is found for searcher/switchers;¹³ and
 - (b) searcher/switchers have on average a higher number of transactions than the reference group, while no difference is found for searcher/non-switchers.

Multi-banking

52. As part of the consumer survey, we asked customers whether they held PCAs or other products with other banks. In particular, we identify two types of multi-banking:
- (a) Narrow multi-banking: This is where a customer holds a PCA at more than one bank.

¹² Current Account Switch Service.

¹³ A number of banks were unable to provide this information resulting in a large number of missing values. For this reason, we do not test the effect of direct debits on searching and switching in the econometric analysis.

(b) Broad multi-banking: This is where a customer holds different financial products at different banks.

53. Table 4 summarises the results for PCAs held in other banks, both for all PCAs and active PCAs only.¹⁴ We first look at the share of customers in each group that indicate having at least one other PCA with a different bank. Searchers, both SN and SS, present significantly higher shares of customers reporting having PCAs in a bank different to their main bank, as compared to the reference group. As for the average number of extra accounts held by multi-bankers, only searcher/non-switchers are found to hold a significantly larger average number than the non-searcher/non-switchers, while non-searcher/switchers have a lower average number. This latter result may be correlated with the lower level of income and younger profile of this group.

Table 4: Narrow multi-banking: More than one PCA with different banks

Groups	Multiple PCAs			Multiple active PCAs		
	Customers			Customers		
	Share (%)	Number	Average number of accounts	Share (%)	Number	Average number of accounts
Non-searcher/Non-switchers	26.5	728	1.24	19.3	521	1.16
Searcher/Non-switchers	38.9***	220	1.43***	28.0***	156	1.38***
Searcher/Switchers	50.7***	102	1.38	37.5***	76	1.22
Non-searcher/Switchers	31.0	31	1.12**	21.0	19	1.05***

Source: CMA analysis based on GfK survey data.

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

54. Table 5 presents the results regarding other banking products. There is no significant difference regarding the share of customers who have a mortgage with other banks. Switchers, both SS and NS, present larger shares of customers having loans with other banks. Searchers, both SN and SS, present a larger share of customers reporting having a savings product and credit card with another bank, while non-searcher/switchers present no significant differences compared to the reference group.

Table 5: Broad multi-banking: other products with different banks

Groups	Proportion of customers holding at least one of these products with another bank (%)				
	Mortgage	Loan	ISA	Other savings	Credit card
Non-searcher/Non-switchers	17.2	3.2	15.8	19.1	29.7
Searcher/Non-switchers	20.1	3.9	29.2***	29.7***	44.3***
Searcher/Switchers	22.5	10.5**	28.5***	32.9***	50.6***
Non-searcher/Switchers	16.9	17.0**	11.9	16.8	35.8

Source: CMA analysis based on GfK survey data.

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

¹⁴ In the survey we asked customers to indicate whether they use each of their PCAs with other banks (question B6). We identify as active those accounts for which the customer answered yes to this question.

55. Beyond specific differences between subgroups, overall the evidence suggests that multi-banking is correlated with observed searching and switching rates.
56. Multi-banking can provide customers with better or easier access to information on products, services and charges offered by other banks. In this respect, it may reduce customers' costs of searching and switching. However, other interpretations are possible:
- (a) Information on multi-banking comes from the survey, so reflects multi-banking after searching and switching. This is particularly problematic for switchers in that some of them may switch to a new PCA and leave the old account open.¹⁵ We try to account for this by looking not just at all PCAs but also active PCAs.¹⁶
 - (b) Customers that have more complex banking needs may be more likely to multi-bank, and the complexity of banking needs may be driving the observed levels of both searching/switching and multi-banking.
 - (c) Related to the above, both searching/switching and multi-banking could be measuring the same thing, customer engagement. Customers may not only engage with the market by looking for the best options and potentially switching, but also by spreading their banking needs across different providers, taking advantage of the best deals or service available to them.¹⁷

Econometric analysis

57. In this section we summarise the results of our econometric analysis. Further details are provided in Appendix D.
58. Unlike the descriptive analysis presented in the first part of this paper, the econometric model, by taking into account the interaction between different factors, allows us to isolate the relative importance of each factor and attach statistical significance to these results. For example, we find that there is a higher incidence of people moving house within the group of non-searcher/switchers, which may indicate that moving house is a push factor for

¹⁵ Survey results show that among customers who switched their main current account in the last year, 63% closed the previous account, 15% left it open but do not use it, while 22% left it open and continue to use it.

¹⁶ Also, this issue does not apply to searchers, who also present larger shares than the reference group. Additionally, for non-searcher/switchers we do not observe any differences.

¹⁷ Given the difficulty in interpreting the role of multi-banking, we believe it would be inappropriate to include it in our econometric analysis. More precisely, as explained in point (c) multi-banking is likely to be another form of customer engagement, and therefore is measuring the same phenomena we are trying to capture with the model. This is what in econometrics is called a 'bad control', that is a control variable that mechanically explains most of the variability in the dependent variable that the model aims to explain.

switching. However, we also see that this group has a larger share of young customers, who are in general more likely to move house in a given year. Therefore, differences in the rate of customers that moved house between groups may just be reflecting the different age profile of each customer group and not be a relevant factor for switching. The econometric analysis allows us to overcome this problem by testing the effect of one factor, moving house, while keeping other factors fixed, ie age.

Methodology

59. We observe searching and switching as binary choices, that is, we see whether customers searched or not, or switched or not. The standard econometric approach to study this type of phenomenon is to estimate binary choice models, namely logit or probit. The main advantage of these models is that they account for the binary nature of the dependent variable and, unlike the standard linear regression approach, do not predict probabilities that are outside the 0, 1 interval.
60. In practice, the model allows us to compare the differences between customers who searched/switched to the others who have not, and how these differences contribute to the probability of being among one group of customers or the other.
61. As a first step, we estimate separate models for searching and switching. However, for many customers searching is a pre-requisite to switching and the result of their searching efforts determines whether they switch or not. For this reason, we also estimate a model that links the two. In particular, we estimate a recursive bivariate probit in order to account for two issues: 1) the fact that the decisions of searching and switching are correlated, and 2) the fact that whether a customer searched or not will have an impact on their probability of switching.

Results

Results of the searching model

62. The results from the searching model can be summarised as follows:
 - (a) We find no statistically significant effect for gender.
 - (b) Customers with income below £24,000 are 3 percentage points less likely to search, although this effect is not significant in all specifications.

- (c) Customers aged between 55 and 64 are 7 percentage points more likely to search.
 - (d) Customers with a degree are 3 percentage points more likely to search.
 - (e) Customers with higher financial literacy are 5 percentage points more likely to search.
 - (f) Customers who indicate having confidence in the use of the internet are 13 percentage points more likely to search.
 - (g) We do not find a statistically significant effect of overdraft usage on searching, while high credit balance holders are 4 percentage points more likely to search.
 - (h) Customers who have seen the closure of a local branch are 10 percentage points more likely to search.
 - (i) Customers who have changed work status are 5 percentage points more likely to search.
 - (j) Customers who never use internet banking are 4 percentage points less likely to switch.
 - (k) Customers reporting a higher number of transactions (debits and credits) are less likely to search. The average estimated effect is 0.1 percentage points per additional transaction.
63. In order to get an idea of the magnitude of these impacts, we should compare it to the average frequency of searching in the subsample used in the estimation, which is 20%.¹⁸ More precisely, if we were to pick one individual from our sample at random regardless of their characteristics, there is a 20% chance that this individual will be a searcher. If we randomly pick someone that presents that factor, say for example having a degree, the probability of them being a searcher, controlling for other factors which affect switching, is higher than 20%. If we randomly pick someone from those who do not hold a degree, then controlling for other variables which affect switching, the probability of them being a searcher is lower than 20%. The difference between these two probabilities, the average of those who have a degree and those who do not, is 4 percentage points.

¹⁸ The analysis is not carried out on the entire survey sample, so this frequency represents the incidence of searching in the subsample used for the analysis and is not a measure of the frequency of searching in the population. This was reported in Table 1 of the main text and is equal to 17%.

Results of the switching model

64. The results from the switching model are summarised below. The incidence of switching in the subsample used in the estimation is 4%.¹⁹
- (a) Women are 1 percentage point less likely to switch than men, although this effect is not statistically significant in all specifications.
 - (b) Customers aged between 35 and 54 are 1 percentage point less likely to switch, although this effect is not statistically significant in all specifications.
 - (c) Customers aged between 55 and 64 are 2 percentage points less likely to switch.
 - (d) We do not find a statistically significant effect for degree and financial literacy.
 - (e) Customers who report having confidence in the use of the internet are 1 percentage point more likely to switch, although this result is sensitive to the model specification.
 - (f) Overdraft users are 2 percentage points less likely to switch. This result is not significant in the joint model, which accounts for whether the customers searched or not.
 - (g) No statistically significant effect is found for high credit balance holders.
 - (h) Customers who have seen the closure of a local branch are 4 percentage points more likely to switch. This result is not significant in the joint model, which accounts for whether the customers searched or not.
 - (i) Customers whose bank has a relatively larger branch network in their region, are less likely to switch. The estimated average effect is 2 percentage points. This effect is not statistically significant if we exclude the NS group from the estimation.
 - (j) Customers who indicate never using mobile apps are 1 percentage point less likely to switch.

¹⁹ As for the case of searching, this is not a measure of the frequency of switching in the entire population which is given by the share of switchers in the whole surveyed sample and is equal to 3% as reported in Table 1 of the main text.

(k) Customers reporting a higher number of transactions (debits and credits) are less likely to switch. The average estimated effect is 0.04 percentage points per additional transaction.

Appendix A: Data processing and cleaning

Sources

1. The analysis presented in this paper combines information from the consumer carried out by GfK and commissioned by the CMA, account usage data and information on branch location provided by banks.

Survey

2. The achieved sample consists of 4,549 telephone interviews with PCA customers. Section 1 of the PCA banking survey technical report²⁰ provides details of the sampling methodology.

Transaction data

3. Banks were asked to provide transaction data for the 120,000 accounts that were sampled by GfK for the PCA survey.²¹ This data was directly sent to the CMA by banks.
4. We use information on account usage for the last quarter of 2014. We cannot use information on usage for the entire year because for switchers, we only have transaction data from their current bank, and the current bank will only hold information since they switched. Therefore, annual averages would be calculated for a different set of months for switchers and non-switchers, and would be an unsuitable measure for comparing these customer groups. Focusing on the last three months of data minimises this problem, while at the same time providing a representative measure of customer usage.

Branch data

5. Banks were asked to provide a list of their branches that were open to the public as on 1 January 2014 and 1 January 2015. For each branch, they were asked to provide the postcode and total opening hours during the working week and weekends.
6. To make the analysis comparable between switchers and non-switchers, we use information on branches as of 1 January 2014 regarding customers' bank

²⁰ [GfK NOP PCA banking survey technical report](#).

²¹ These are described in the PCA survey technical report as the 'issued sample'. The achieved sample of 4,549 PCA customers is a subset of the issued sample.

of origin, ie customers' previous bank for switchers and customers' current bank for non-switchers.

Data processing and sample size

7. Survey results and transaction data are merged using a unique account identifier provided by the banks and a customer number for joint accounts. We exclude from the analysis customers for whom we find inconsistencies in their basic demographic characteristics as reported in the survey and the transaction data (year of birth and gender).
8. Since our focus is on searching and switching in the last 12 months, we also exclude from the analysis customers who searched or switched in the last two to three years. We also exclude customers who switched accounts within the same bank or who could not indicate the specific period where they searched/switched.
9. This results in a sample of 3,676 customers. The size of the sample in specific sections of the analysis is reduced further due to missing values of specific variables.

Appendix B: Definition of variables used in the analysis

Customer demographics

1. **Age:** Customers' age is calculated as the difference between 2015 and the customer's year of birth coming from the transaction data submitted by banks.
2. **Gender:** We use information on gender as recorded in the survey results. When this information is not available, we use information coming from the transaction data submitted by the banks.
3. **Working status:** We use information on working status as recorded in customers' responses to survey question K4.
4. **Income:** A large number of customers did not provide information on their income in their responses to the survey. For this reason, we rely on an alternative measure coming from the transaction data submitted by the banks. In particular, we use the average monthly total value of payments and transfers into the account.
5. **Highest level of education achieved:** We use information on education as recorded in customers' responses to survey question K6.
6. **Financial literacy:** We measure customers' financial literacy on the basis of survey question K1 where respondents were asked to do a simple interest calculation using information on the amount of a loan (£500) and an interest rate (10%). We consider as 'right' responses equal to £50 and £550.
7. **Confidence in the use of the internet:** We use information from customers' responses to survey questions K2 and K3 regarding internet access and confidence in its use. We consider customers to be confident if they indicated they feel fairly confident or very confident, and not confident if they indicated they feel not very confident or not at all confident.

Account usage

8. Information on account usage comes from transaction data. Monthly averages are obtained by averaging values for the last three months of 2014. For customers who opened their account after October 2014, we use information from the month after they opened their account to December.
9. **Average number of days in overdraft:** We calculate this as the average number of days the account was in an arranged and an unarranged overdraft.

10. **Average overdraft balance (when in overdraft):** Overdraft balances are obtained by multiplying each monthly overdraft balance and the corresponding number of days the account was in an arranged or an unarranged overdraft.
11. **Overdraft user:** We consider a customer to be an overdraft user if either their monthly average overdraft balance or the monthly average number of days in overdraft are positive.
12. **High credit balance holder:** We consider a customer to be a high credit balance holder if their monthly average credit balance is within the top 25% of the overall distribution of average monthly credit balances in the transaction data.
13. **Average credit balance (when in credit):** Credit balances are obtained by multiplying each monthly credit balance and the corresponding number of days the account was in credit in each month.
14. **Number of direct debits and standing orders:** Number of direct debits and standing orders set up on the account at the end of 2014, as reported in variable a123 of the transaction data.
15. **Number of transactions:** Monthly average number of credits and debits in the customer's PCA, calculated on the basis of the information reported in variable a122 of the transaction data.

Usage of services

16. **Frequency of branch visits:** We use information from customers' responses to question D1. Customers are grouped according to whether they report visiting a branch weekly (every day or once a week or more), monthly (two to three times a month or once a month), less often (once every two to three months, once or twice a year or less often), or never.
17. **Frequency of use of internet banking:** We use information from customers' responses to survey questions C2.1 and C3.1. Customers are grouped according to whether they report using internet banking weekly (every day or once a week or more), monthly (two to three times a month or once a month), less often (once every two to three months, once or twice a year or less often), or never (if they report not using it at all in question C2.1).
18. **Frequency of use of mobile/tablet app:** We use information from customers' responses to survey questions C2.2 and C3.3. Customers are grouped in the same way as for internet banking.

Opinions and perceptions

19. **Importance:** We use information on customers' opinions regarding the importance of different bank services and PCA features coming from their responses to survey questions E3, D3 and D4.
20. **Satisfaction:** Information on customers' level of satisfaction with their current bank comes from survey question E1. For switchers, we also use information on their level of satisfaction with their previous bank coming from responses to question F18. Customers are grouped according to whether they report they are satisfied (very satisfied or fairly satisfied), dissatisfied (fairly dissatisfied or very dissatisfied) or indifferent (neither satisfied nor dissatisfied).
21. **Cost of searching:** Information on customers' expectations and experience on the cost of searching comes from customers' responses to survey questions F11 and F13, respectively. We group customers according to whether they reported they find a specific dimension of searching easy (very easy or fairly easy), difficult (fairly difficult or very difficult) or indifferent (neither easy nor difficult).
22. **Cost of switching:** Information on customers' expectations and experience on the cost of switching comes from customers' responses to survey question F12 and F14a, respectively. Customer responses are grouped in the same way as for cost of searching.

Branches

23. **Local branch closed in the last 12 months:** We use information on local branch closure coming from customers' responses to survey question I5 for non-switchers and question I6 for switchers.
24. **Local branch:** We use information on customers' and branches' postcodes provided by the banks, and identified whether the customers' bank of origin had a branch in their local area open to the public as of 1 January 2014. We identify geographical locations on the basis of easting and northing coordinates available in the National Statistics Postcode Lookup (NSPL) dataset.²² A customers' local area is defined as the 1-mile radius from their postcode for customers' living in areas with a population density equal or

²² We use the version of the NSPL dataset published by the Office for National Statistics (ONS) in February 2015.

above 1.5 inhabitants per hectare, and the 3-mile radius for customers' living in areas with a population density below 1.5 inhabitants per hectare.²³

25. **Local branch extended hours:** We constructed this indicator in the same way as above but considering only branches that were open for extended hours during the week or weekends as of 1 January 2014.
26. **Number of local banks in local area:** Using the same information as above, we identify the branches of all banks located in each customers' local areas and counted the number of banks that had at least one branch in the customers' local area opened to the public as of 1 January 2014.
27. **Regional branch network:** Using information on customers' and branches' postcodes, we calculate the number of branches of the customers' bank of origin located in customers' city or region and open to the public as of 1 January 2014. Cities and regions were defined at the level of the LAUA²⁴ for Wales, Scotland and Northern Ireland, and to the immediately higher level of aggregation for England. Customers' and branches' postcodes were matched to each LAUA using the ONS NSPL dataset.
28. **Relative size of branch network:** We replicate the exercise above for all other banks and calculate the number of branches of each bank located in the customers' city or region. We then calculate the ratio of the number of branches of customers' bank of origin and the number of branches of the bank with the largest network in the city or region.

Trigger factors

29. We use information coming from customers' responses to survey question K6.

Multi-banking

30. **Customers with multiple PCAs:** We use information coming from customers' responses to survey question B3 to identify customers who have at least one PCA with a bank other than their current main bank.
31. **Average number of accounts with another bank:** We use information coming from customers' responses to survey question B4 and calculate the number of PCAs the customer holds with another bank. The average is

²³ This approach is in line with the first step of the OECD methodology to classify urban and rural areas at administrative level 2. See '[Urban-rural typology](#)' on the [eurostat website](#). Information on the density of population comes from the 2011 Census table on population density and local authorities available on the [Office for National Statistics website](#).

²⁴ Local Authority Unitary Authority.

calculated considering only customers that have at least one PCA with a bank other than their current main bank.

32. **Customers with multiple active PCAs:** We use information coming from customers' responses to survey question B6 to identify customers who have at least one PCA that they currently use with a bank other than their current main bank.
33. **Average number of active accounts:** We use information from customers' responses to survey question B6 to calculate the number of PCAs the customer has and uses with a bank other than their current main bank.
34. **Customers holding at least one other product with another bank:** We use information from customers' responses to survey questions I1 and I2 to identify customers that have at least one financial product with a financial institution other than their current main bank.

List of variables used in the econometric analysis

35. The variables used in the econometric analysis are defined as follows:
 - (a) Searcher: 1 if the customer has searched for another PCA in the last 12 months, 0 otherwise.
 - (b) Switcher: 1 if the customer has switched PCA in the last 12 months, 0 otherwise.
 - (c) Female: 1 if the customer is a woman, 0 otherwise.
 - (d) Income below £24,000: 1 if the customer has income below £24,000, 0 otherwise.
 - (e) Age 35 to 54: 1 if the customer is 35 to 54 years old, 0 otherwise.
 - (f) Age 55 to 64: 1 if the customer is 55 to 64 years old, 0 otherwise.
 - (g) Age 65 or above: 1 if the customer is 65 years old or older, 0 otherwise.
 - (h) Degree: 1 if the customer holds a degree, 0 otherwise.²⁵
 - (i) Financial literacy: 1 if the customer answered correctly the survey question K1, 0 otherwise.

²⁵ The variable is set to zero for customers who indicate having a different level of education and to missing if they did not respond to the question.

- (j) Internet confidence: 1 if the customer is confident in the use of the internet, 0 otherwise.
- (k) Overdraft user: 1 if the customer has used an overdraft, 0 otherwise.
- (l) High credit balance: 1 if the customer holds high credit balances, 0 otherwise.
- (m) Local branch closed: 1 if the customer's bank of origin's local branch closed in the last 12 months, 0 otherwise.
- (n) Relative size of branch network: Ratio of the number of branches that the customer's bank has in their region and the number of branches of the bank with the largest network in the region.
- (o) Moved house: 1 if the customer has moved house in the last 12 months, 0 otherwise.
- (p) Changed work status: 1 if the customer started or stopped working in the last 12 months, 0 otherwise.
- (q) Changed relationship status: 1 if the customer has married or divorced in the last 12 months, 0 otherwise.
- (r) Never uses internet banking: 1 if the customer does not use internet banking, 0 otherwise.
- (s) Never uses mobile app: 1 if the customer does not use mobile/tablet app, 0 otherwise.
- (t) Number of transactions: Monthly average number of credits and debits in the customer's PCA.

Appendix C: Details of descriptive analysis

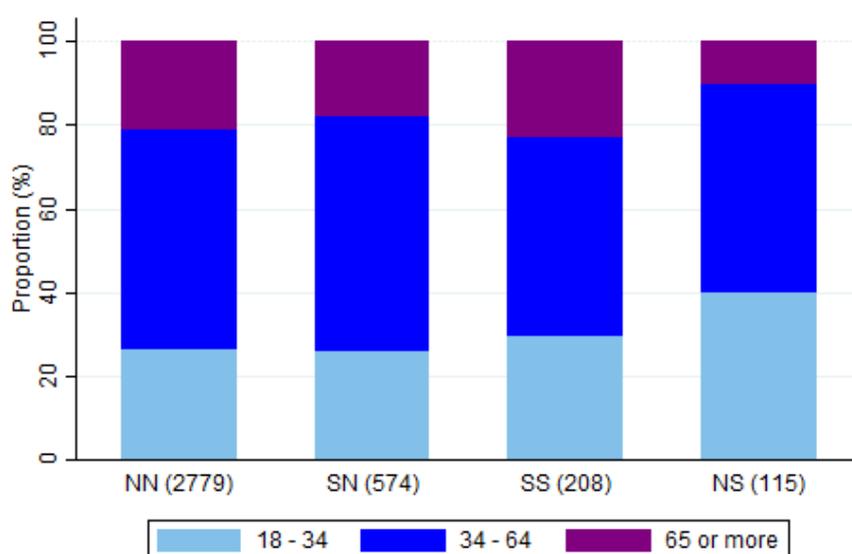
1. This appendix presents further details of the descriptive analysis summarised in paragraphs 14 to 56 of the main text.

Customer demographics

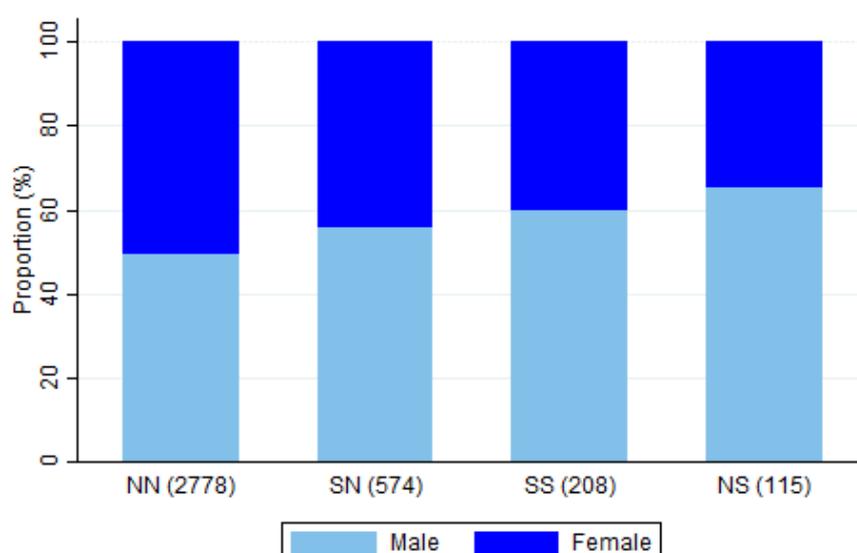
2. Figure 1 shows the distribution of customers within each group according to basic demographics, namely age, gender, working status and level of income. Each bar in a graph represents one of the customer groups defined in paragraph 15 of the main text.

Figure 1: Basic demographics

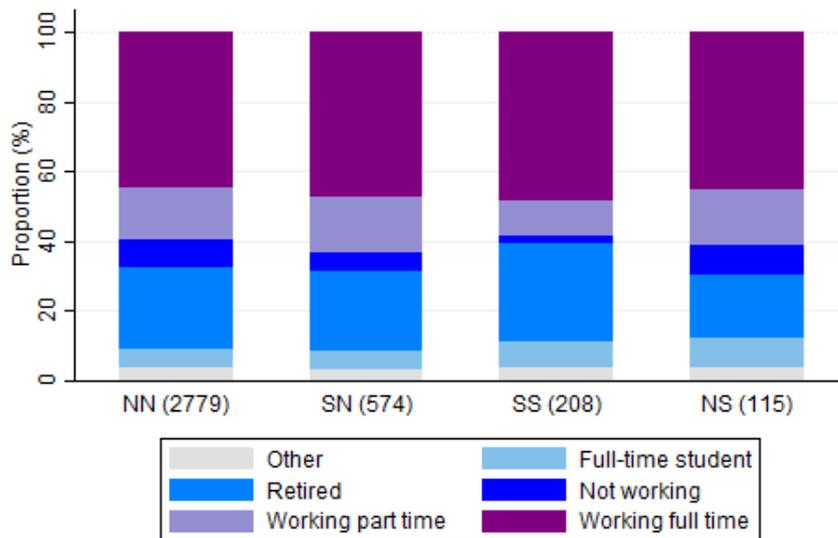
Age



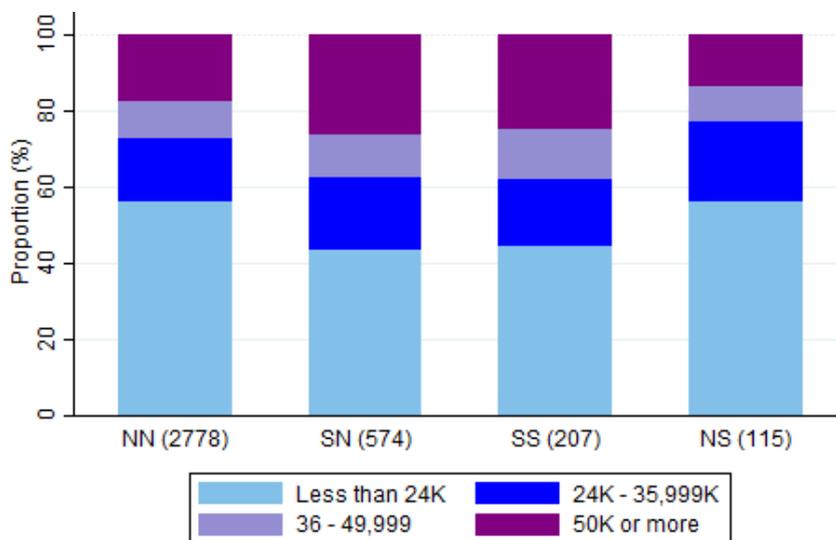
Gender



Working status



Income



Source: CMA analysis based on banks' transaction data and GfK survey data.

3. The most noticeable differences among the groups seem to concern their level of income. Searchers, whether they switched or not, have a higher level of income than the other two groups. Higher earners, those with income of £50,000 or above, represent around 25% of the group of searchers, and only 17 and 14% of the NN and NS groups respectively. Conversely, the group of customers with income below £24,000 represents approximately 43% of searchers, both SN and SS, and 56% of non-searchers, both NN and NS.²⁶
4. If we look at age, the group of non-searcher/switchers have a younger profile than the other groups. The share of customers in this group below 35 years of

²⁶ The differences between these groups and the reference group NN are statistically significant at 1% for SN, and at 5 and 10% for SS.

age is about 40%, compared to only 26% for the reference group (NN). At the same time, the share of those above 55 is only 11% compared to 21% in the reference group (NN).²⁷ The group of searcher/non-switchers does not present significant differences in age profile with respect the NN group. However, customers aged between 55 and 64 are particularly overrepresented in this group, although this is compensated by a smaller share of those aged 65 or more.²⁸ As for the group of searcher/switchers, they do not present any significant differences in their age profile to the reference group NN.

5. There seems to be a slightly smaller share of women in the searching and switching group than in the reference group, and this seems to be particularly the case for switchers who did not search.²⁹
6. Working status may be important for switching behaviour in that it gives a measure of the relative costs of time. Someone that has more free time may have more time to search and switch for a new PCA. However, it is also correlated with the level of education and the financial position of the person. Therefore, its impact is difficult to measure in isolation. In general, we do not find significant differences regarding the work status of customers between the different groups. The only exception is the share of those 'not working' which is significantly lower in the SN and SS groups than the reference group.³⁰
7. Figure 2 shows three measures related to customers' level of education and literacy, as used in our consumer survey, namely the highest level of education achieved, financial literacy and confidence in the use of the internet.

²⁷ These difference are statistically significant at 5 and 1% confidence respectively.

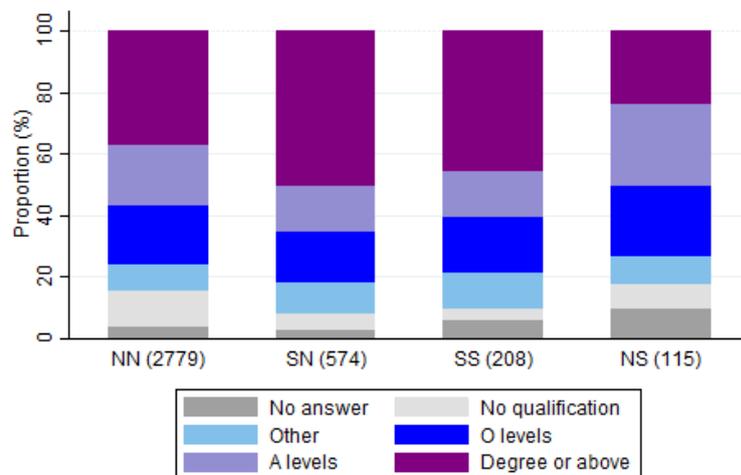
²⁸ These difference are statistically significant at 5 and 10% confidence respectively.

²⁹ These differences are all statistically significant at least at 5%.

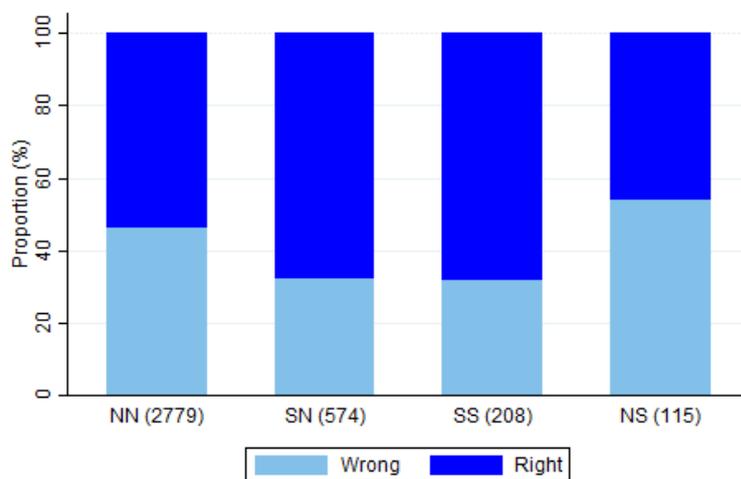
³⁰ They represent 5% of the SN group and 2% of the SS group, while they represent 8% of the NN group. These differences to the NN group are statistically significantly different from zero at 5 and 1% for SN and SS respectively.

Figure 2: Level of education, financial and internet literacy

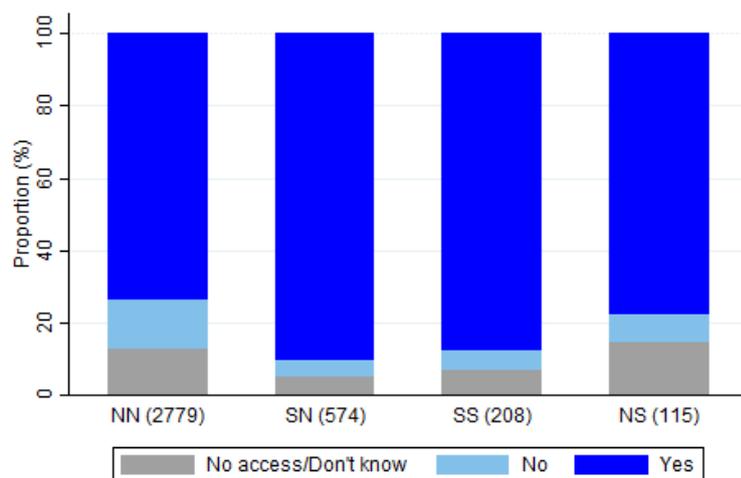
Highest level of education achieved



Financial literacy



Confidence in the use of the internet



Source: CMA analysis based on banks' transaction data and GfK survey data.

- The three measures show a clear difference between searchers, whether they switched or not, and the rest of the sample. Customers holding a university

degree represent 50 and 46% of the SN and SS groups respectively, while they represent only 37% of the reference group NN. As for financial literacy, 68% of customers in these two groups gave the correct answer to the survey question, as compared to only 54% of the NN group. These groups also report higher levels of internet access and confidence in its use: 90 and 87% of the SN and SS groups respectively report having confidence in the use of the internet, while this share is 74% for the NN group.³¹ The group of those who switched without searching present similar levels of education and literacy than the reference group NN.³²

Monetary features

9. Figure 3 shows consumer survey responses to the question of how important monetary features of PCAs are for them. There are no significant differences in customers' responses regarding the level of charges. Overall, around 40% of all customers report that this aspect is very important or essential to them. However, searchers seem to differ significantly regarding the importance they assign to the interest rate paid on credit balances: 56 and 55% of customers in the groups of searchers, SN and SS respectively, indicate that they consider this aspect to be very important or essential, compared to 42% for the reference group NN.³³ These results suggest that searchers may be more likely to respond to monetary pull factors associated with credit interest payments or other financial rewards.

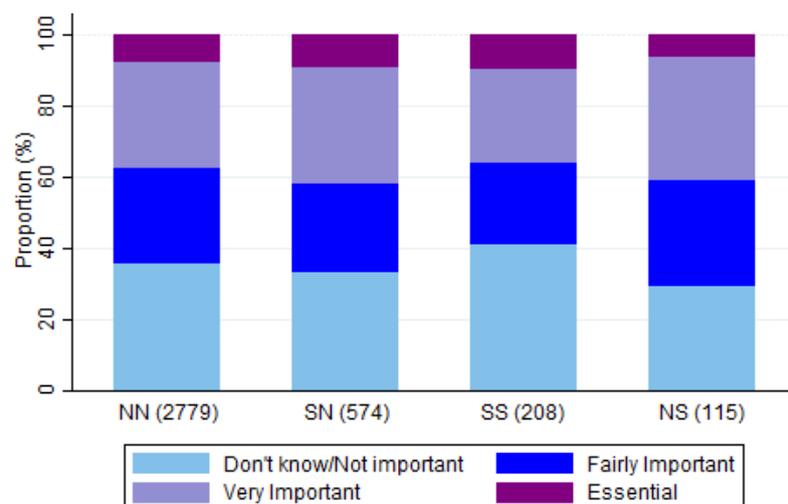
³¹ The reported differences between searchers and the reference group NN are all statistically significantly different from zero at 1%, with the exception of the share of those holding a degree which is only significant at 10% for the SS group.

³² They present a lower level of people holding a degree, but this is likely to be correlated with the age profile of this group.

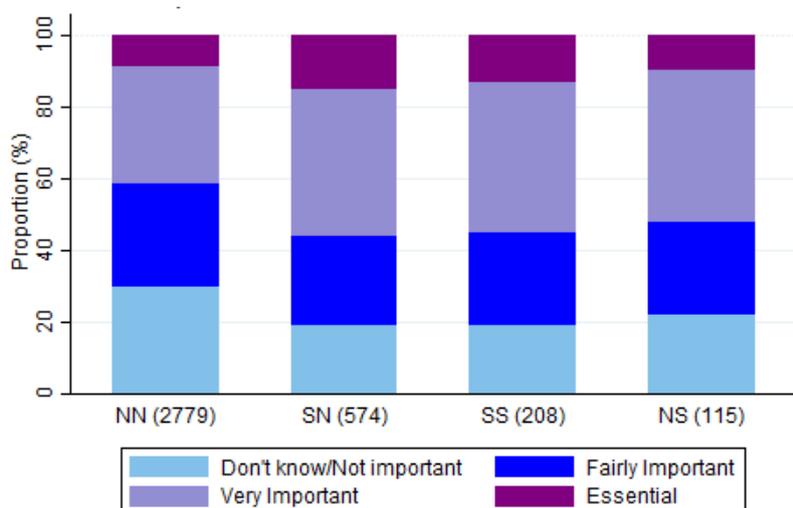
³³ The differences between SN and SS with respect to NN are statistically significantly different from zero at 1% confidence. For the NS group the share of those reporting credit interest rates is 52%. Although, this is still larger than the NN group the difference is not statistically different from zero (p-value of 0.12).

Figure 3: Importance of monetary features of PCA

Importance of level of charges (eg overdraft charges)



Importance of interest rate on credit balances



Source: CMA analysis based on GfK survey data.

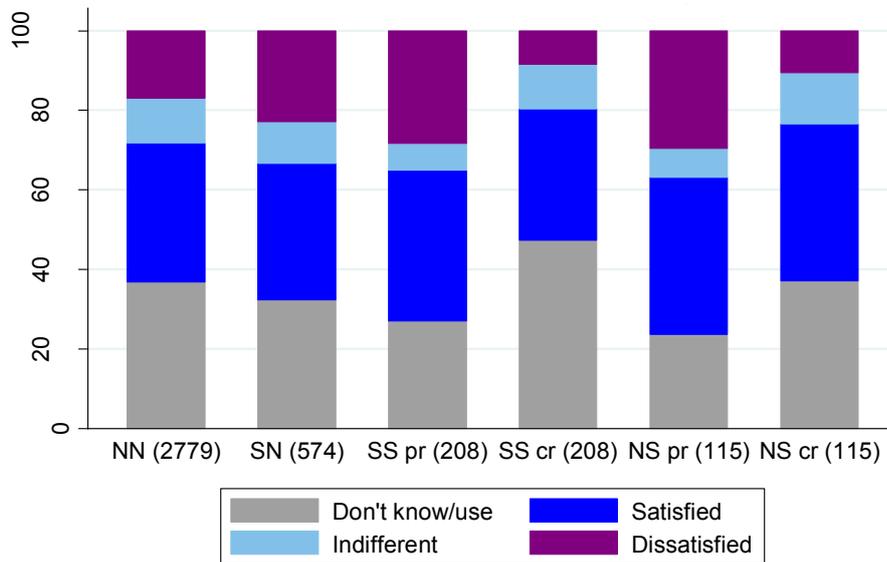
10. Figure 4 shows the level of satisfaction of customers regarding charges. These include, but are not limited to, overdraft charges. We present the results for the whole sample and for overdraft users only. For switchers we present results for both their previous and current bank. Both searchers and switchers report lower levels of satisfaction than the reference group NN regarding their bank of origin. In particular, customers reporting to be dissatisfied represent 23% of the SN group, 28% of the SS group and 30% of the NS group compared to only 17% of the NN group.³⁴ If we look at the levels of satisfaction for switchers with their new bank, the number of those that are

³⁴ All these differences are statistically significantly different to zero at the 5% confidence level.

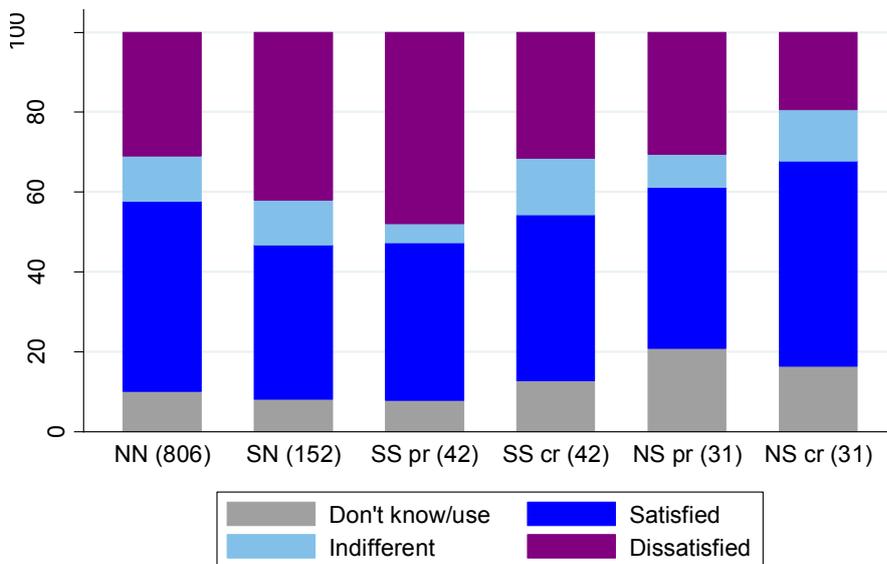
dissatisfied is much smaller than for the reference group (8 and 11% for SS and NS respectively).³⁵

Figure 4: Satisfaction with level of charges

Satisfaction with level of charges



Overdraft users only



Source: CMA analysis based on banks' transaction data and GfK survey data.

Note: For switchers (SS and NS), we report the levels of satisfaction with customers' previous bank (pr) and current bank (cr).

11. However, it should be noted that survey responses may be subject to ex-post rationalisation, that is, customers report levels of satisfaction that justify their

³⁵ The difference between NN and SS is statistically significant at 1% confidence level, however the difference for the NS group is not.

past behaviour, and this may be driving the observed levels of satisfaction, particularly for switchers' new bank.

12. The second panel in Figure 4 (overdraft users only) shows the level of satisfaction for overdraft users only. We find that the levels of dissatisfaction are in general higher for this group. These results should be taken with caution given the small number of observations left within each subgroup once we restrict the sample to overdraft users only.

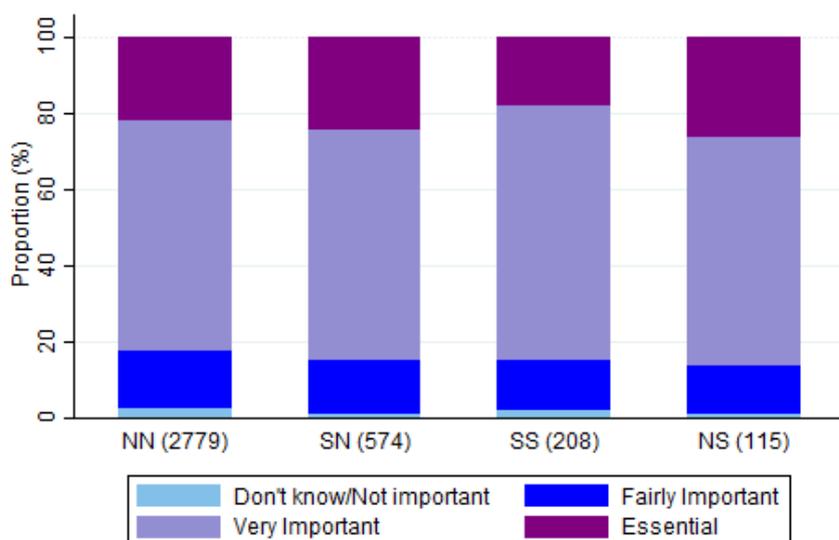
Quality of service

Customer service

13. Figure 5 presents indicators of customers' opinions around two aspects of customer service: (1) staff and customer service, and (2) quality and speed of handling problems. The first two panels of the figure show customers survey responses to the question of how important these aspects are for them. The two panels at the bottom of the figure show customers' responses regarding their level of satisfaction with their bank in these two aspects.
14. The results do not show significant differences between the different groups of customers regarding the importance of staff and customer service. However, the SN and NS report a larger proportion of customers who consider quality and speed of handling problems to be very important or essential.³⁶

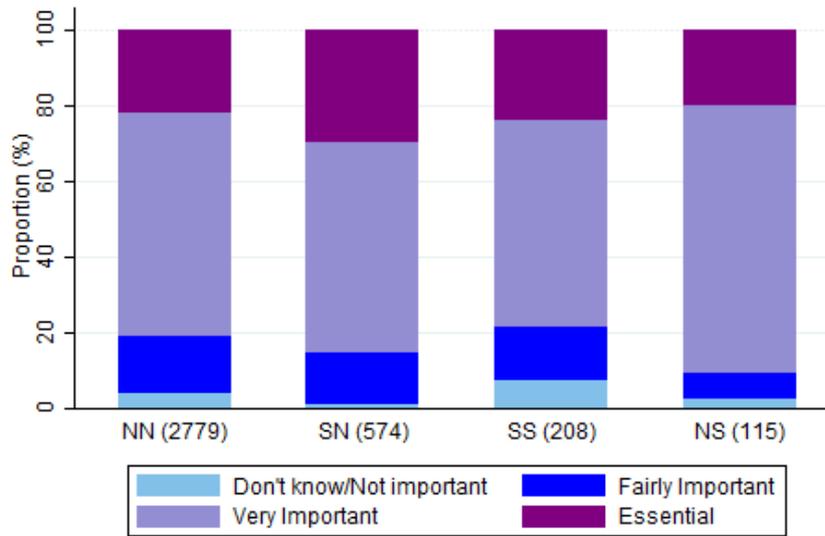
Figure 5: Customer service

Importance of staff and customer service

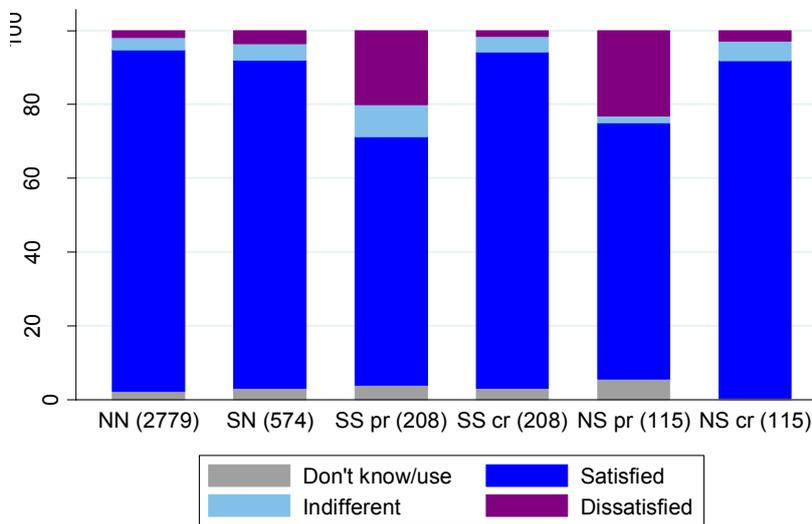


³⁶ The differences between these groups and the reference group are statistically significant at 1 and 5% respectively.

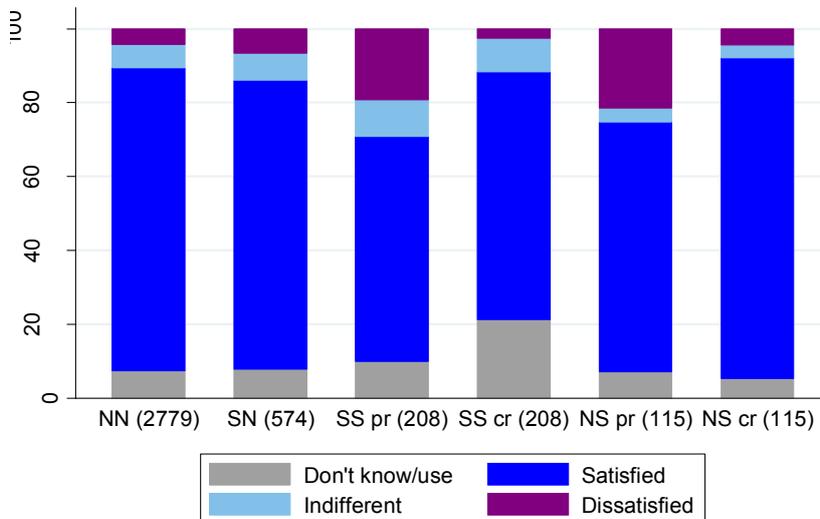
Importance of quality and speed of handling problems



Satisfaction with staff and customer service



Satisfaction with quality and speed of handling problems



Source: CMA analysis based on banks' transaction data and GfK survey data.

Note: For switchers (SS and NS), we report the levels of satisfaction with customers' previous bank (pr) and current bank (cr).

15. Both groups of switchers, SS and NS, report much higher levels of dissatisfaction than the reference group NN regarding their bank of origin. For example, with regard to staff and customer service, 20% of the SS group and 23% of the NS group express being dissatisfied, compared to only 2% in the NN group. Also, the share of those expressing to be satisfied is 68 and 69% for SS and NS respectively, compared to 93% for the NN group.
16. As for the SN group, they also show significant differences compared to the NN group, although of a smaller magnitude. Among this group, 4% express being dissatisfied and 89% express being satisfied.³⁷ If we look instead at the level of satisfaction of these customers with their current bank, they are not significantly different to degrees of satisfaction reported by the NN group. Similar results are found for the levels of satisfaction regarding quality and speed of handling problems.³⁸
17. The same issues discussed in paragraph 11 regarding ex-post rationalisation also apply here.

Branch network and services

18. Figure 6 presents survey results concerning branches. Overall, we do not find any significant differences between the groups in the degree to which customers care about branches and the frequency with which they use them.
19. The first two panels in Figure 6 show how important local branches and branch networks of own bank are for customers. Overall, we do not observe significant differences between searchers and switchers and the reference group NN in relation to the degree to which they consider branches to be important.³⁹
20. The third panel in Figure 6 shows the frequency of branch usage (as reported by customers in the survey). In all groups, most customers visit branches once a month or less, and both searchers and switchers show patterns similar to the reference group NN. The only significant difference is the share of

³⁷ The differences between SS and NS with respect to NN are statistically significant at 1%, while for SN they are significant at 5% (satisfied) and 10% (dissatisfied).

³⁸ The only exception is the share of SS customers reporting being satisfied with their current bank which is still lower than the share for the NN group. This difference is statistically significant at 1%.

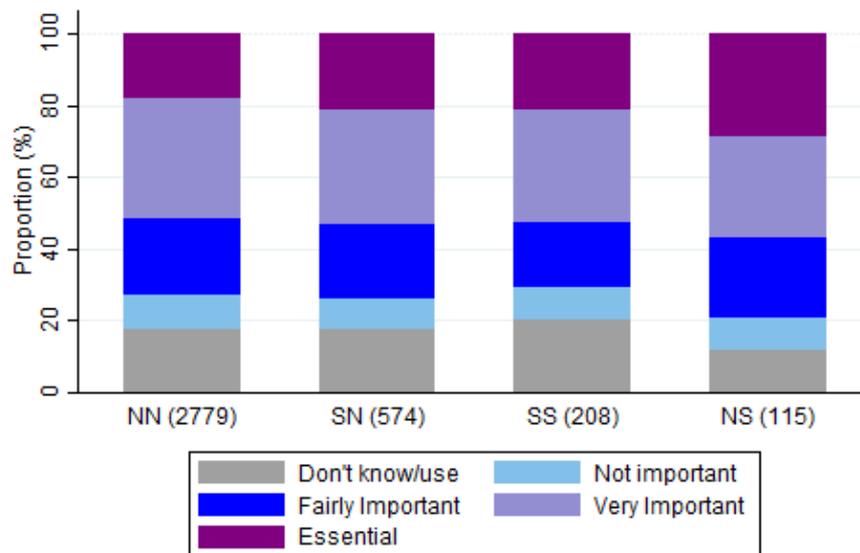
³⁹ An exception is the NS group, 29% of which report that a local branch of their bank is essential as compared to the 18% share for the NN group (statistically different from zero at the 10% confidence level). Also, within the SN group the share of customer indicating that the national network of own bank is very important or essential is 6% lower than for the NN group (statistically different from zero at the 5% confidence level).

customers indicating that they never used branches in the SS group, 14%, compared to the reference group NN, 7%.⁴⁰

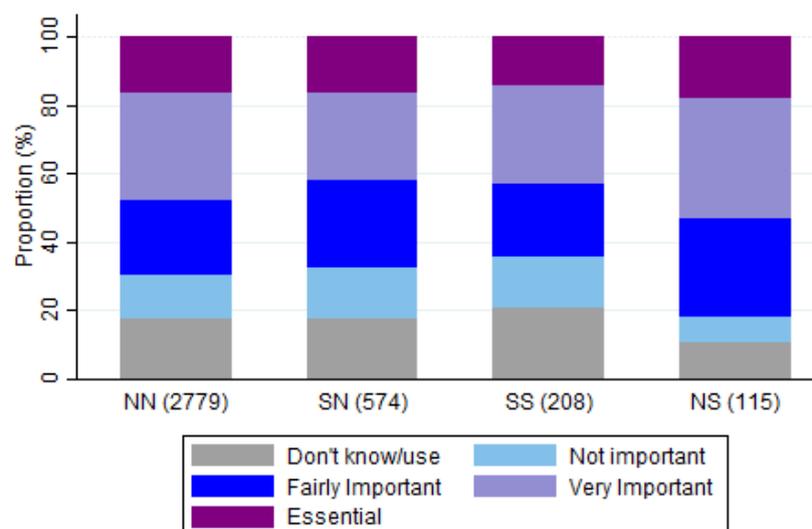
21. The fourth panel in Figure 6 presents the survey results concerning a local branch closure. This is an important element for understanding searching and switching since a local branch closure could work as a trigger factor for switching. The share of searchers, both SN and SS, who have experienced a local branch closure is significantly higher than the reference NN.⁴¹ The evidence suggests that this may be a factor for some customers.

Figure 6: Local branches and branch network

Importance of having a local branch of own bank



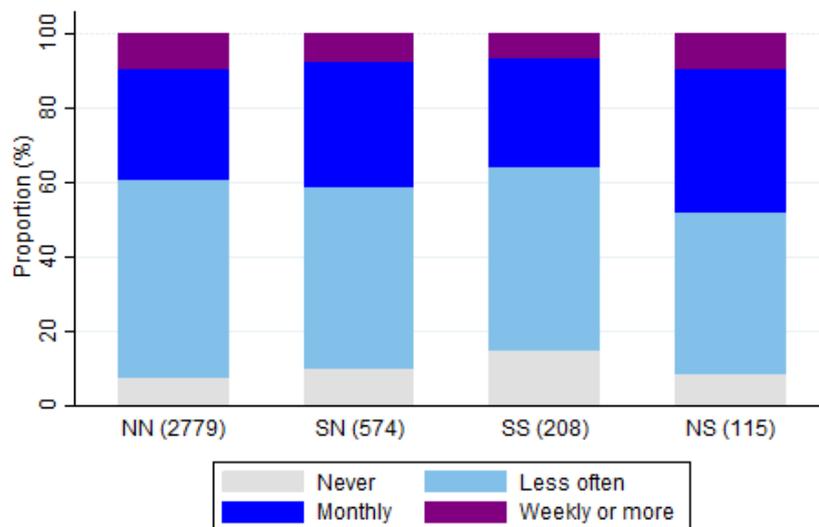
Importance of own bank's national network



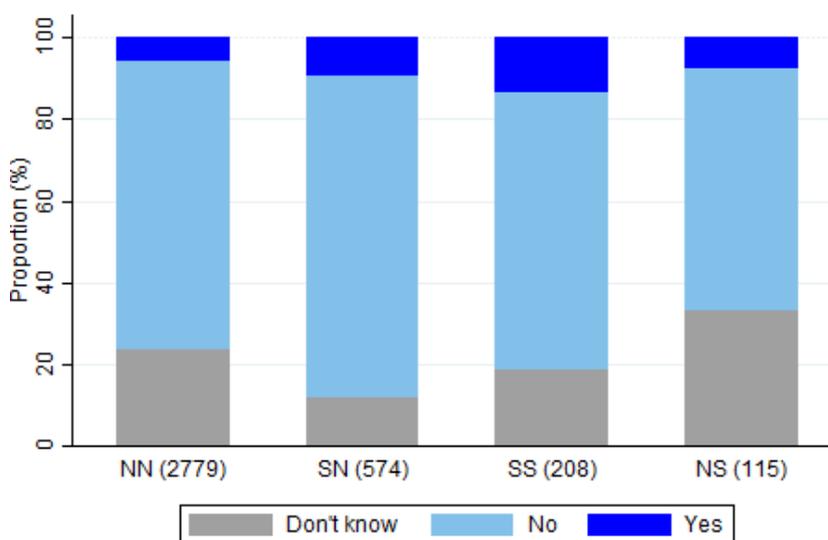
⁴⁰ This difference is statistically significant at 5% confidence.

⁴¹ The share for SN and SS groups is 10 and 14% respectively as compared to 6% for NN, and both differences are statistically significant at 5%. The share for NS is 8% but this difference is not statistically significant.

Frequency of branch visits



Local branch closed in the last 12 months



Source: CMA analysis based on GfK survey data.

22. Table 1 summarises indicators of the level of branch service available to customers of each group. These were constructed using information on branch location provided by banks and customers' postcodes. In particular, we use information on branch location of customers' bank of origin and other banks as on 1 January 2014. Therefore, the measures intend to capture the level of service available to customers before searching and switching.

Table 1: Local branches and branch network of bank of origin

<i>Groups</i>	<i>Local branch (%)†</i>	<i>Local branch extended hours (%)‡</i>	<i>Number of banks in local area</i>	<i>Regional branch network§</i>	<i>Relative size of branch network (%)¶</i>
Non-searcher/Non-switchers	50.5	34.8	3.6	40.6	67.6
Searcher/Non-switchers	44.1**	30.9	3.4	29.6***	65.4
Searcher/Switchers	47.1	31.1	3.2	30.4*	62.6
Non-searcher/Switchers	47.2	27.0	3.5	34.0	60.6*

Source: CMA analysis based on banks' transaction and branch data and GfK survey data.

†Proportion of customers who have a branch of their own bank in their local area.

‡Proportion of customers who have a branch of their own bank with extended opening hours in their local area.

§Number of branches of customers' bank in the region where they live.

¶Ratio of the number of branches of customer's bank in the region where they live with respect to the bank with the largest network of branches in the region.

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

23. The first three columns focus on the availability of branches in customers' local area.⁴² We first look at the share of customers in each group that had a branch of their bank in their local area. Although both searchers and switchers present lower levels than the reference group NN, the difference is only statistically significant for the SN group. We then consider the share of customers that have a local branch of their bank with extended opening hours, ie opens weekends or longer hours during the week. Again, calculated shares are smaller in magnitude but the differences are not statistically significant.
24. The third column presents the average number of banks that have at least one branch in the customers' local area. The presence of local branches of other banks may work as a pull factor for switching. However, we do not observe significant differences in this respect between searcher/switchers and non-searcher/non-switchers.
25. Not all customers may visit a bank close to where they live, but may prefer to visit branches in another location, for example, in the area where they work. To address this, the last two indicators consider the size of customers' bank network in the region where they live.⁴³ The first simply counts the number of branches in the region, while the second is a relative measure that compares the size of the customers' network with respect to the size of the network of the bank with the largest network in the region. The results do not show significant differences between the groups.
26. In summary, the evidence on branches indicates that searcher/switchers do not show significant differences in terms of the importance they attribute to

⁴² As indicated in Appendix A, we define customers' local area as the one- and three-mile radius from their postcode for customers living in high and low population density areas respectively.

⁴³ Regions were defined at the level of the local authority (LAUA) for Wales, Scotland and Northern Ireland, and to the immediately higher level of aggregation for England, as shown in the 2011 Census table on population density.

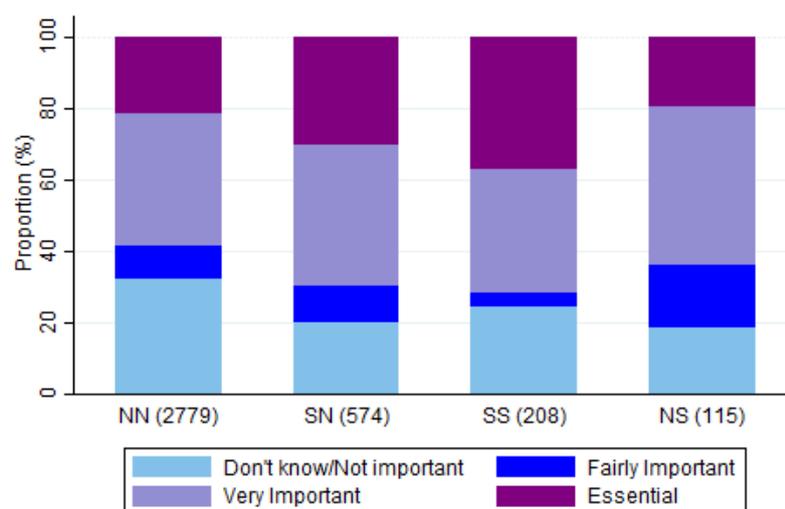
branches, the frequency with which they use them and the services available to them, as compared to non-searcher/non-switchers. However, the results suggest that the closure of a local branch could act as a trigger factor for searching and switching for some customers.

Online services

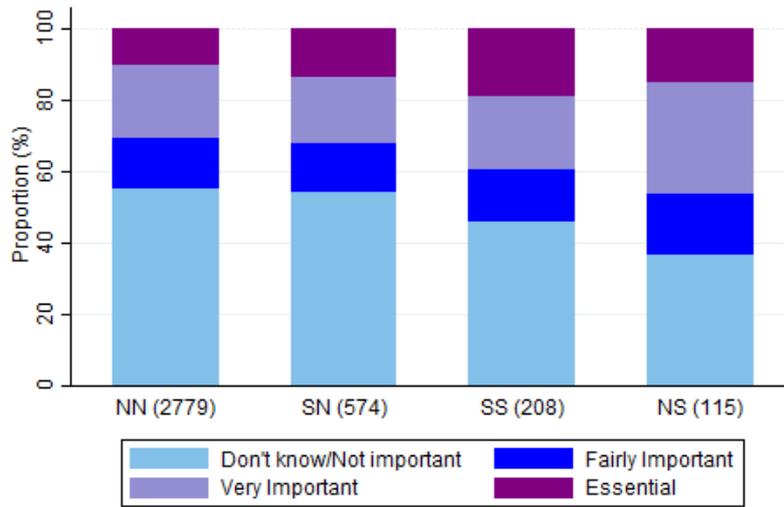
27. Figure 7 summarises survey results regarding the importance and frequency of use of online applications, in particular, internet banking and mobile apps. Overall, online services seem to be more relevant for searchers and switchers than for the reference group NN. The group of searcher/switchers consistently rate higher on both importance and frequency of use of these services compared to the reference group NN. The results for SN mirror those of SS for internet banking but not for mobile apps. As for non-searcher/switchers, mobile apps seem particularly relevant.

Figure 7: Importance of online services and frequency of use

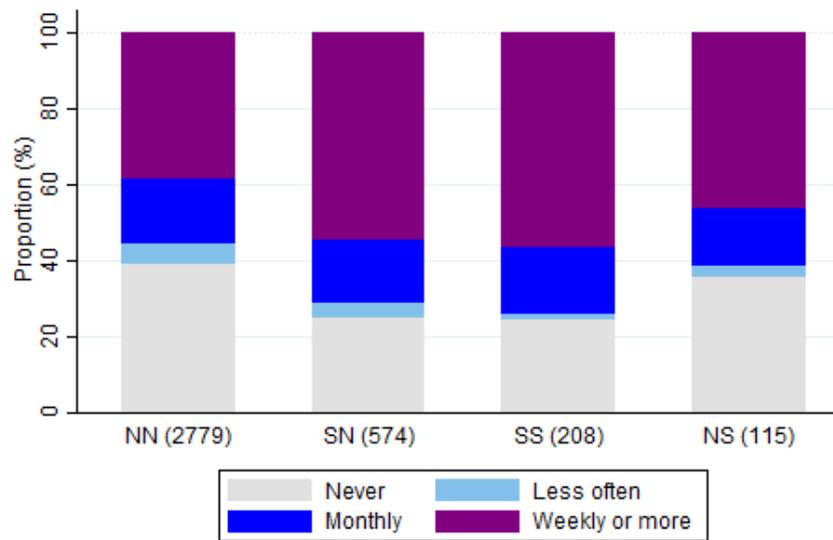
Importance of internet banking



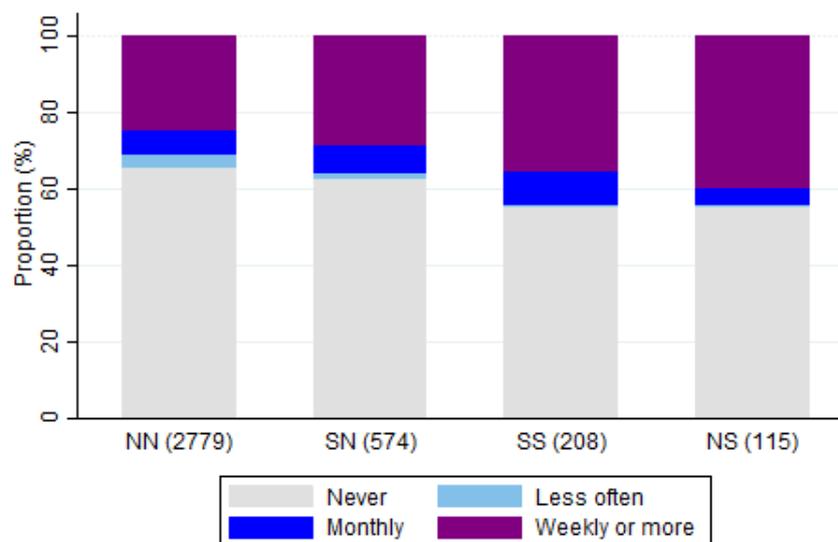
Importance of apps for smartphones and tablets



Frequency of use of internet banking



Frequency of use of bank mobile/tablet apps



Source: CMA analysis based on GfK survey data.

Trigger factors

28. In this section we focus on trigger factors associated with changes in customers' personal circumstances that may change their needs regarding banking services, and potentially push them to search and switch.
29. In the consumer survey we asked respondents to indicate whether a series of life events happened to them in the last 12 months. Table 2 shows the share of customers per group that answer yes to this question for each life event. The SN and NS groups present a higher share of customers reporting having changed work status compared to the reference group, while the NS also presents a higher share of customers reporting having moved house, suggesting that moving house or changing work status could act as a trigger factor for some customers. We do not find significant differences in the frequency rate of these events for the SS group.

Table 2: Life events in the last 12 months

	<i>Proportion of customers (%)</i>			
	<i>NN</i>	<i>SN</i>	<i>SN</i>	<i>NS</i>
Moved house	13.3	15.6	17.2	30.1***
Started or stopped working	13.6	17.6*	15.1	23.4*
Got married/started living with someone else	4.8	5.1	6.0	6.4
Got divorced/separated/widowed	3.8	1.5***	4.0	2.0

Source: CMA analysis based on GfK survey data.

***/**/* Statistically significantly different from the share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

Cost of searching and switching

Customer perceptions regarding the difficulty to search and switch

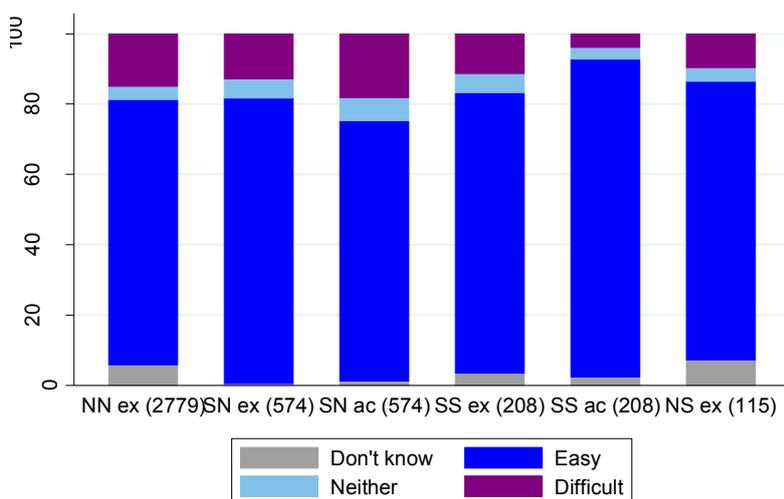
30. Figure 8 summarises the results for the four dimensions of the process of searching and switching considered in the survey. As explained in paragraph 46 of the main text, the first three dimensions concern costs of searching, while the fourth relates to cost of switching.
31. If we compare the level of expectations of searchers before they searched ('SN ex' in bar 2 and 'SS ex' in bar 4 in the first three panels) with the reference group ('NN ex' in bar 1), we find that in general searchers present a higher share of customers reporting that they expected the process to be easy and a lower share of those indicating that they expected the process to be difficult, as compared to the NN group.⁴⁴

⁴⁴ For all three dimensions of searching the share of customers in SN responding 'easy' was statistically significantly larger than the NN group at 1% confidence, while the share of those responding 'difficult' was

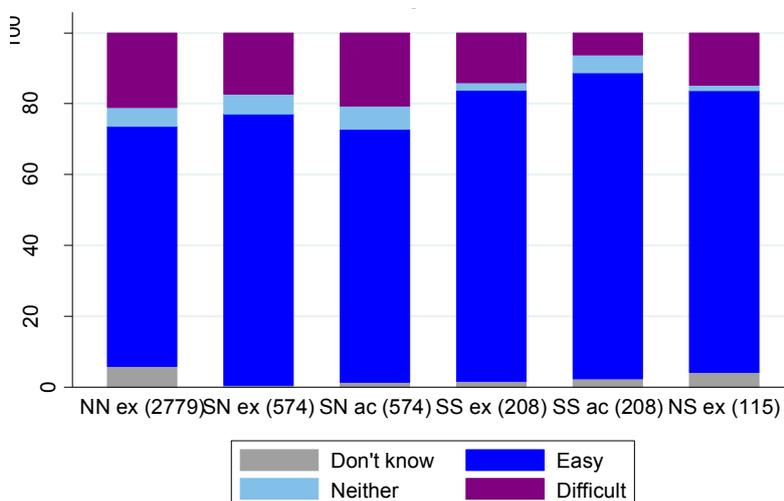
32. If we look at cost of switching, presented in the fourth panel, we observe that searcher/switchers (SS ex, bar 3) shows a larger share of customers indicating they expected the process to be difficult as compared to the reference group (NN, bar 1).⁴⁵ This is a counterintuitive result and is illustrative of the type of bias these type of survey questions may be subject to, as explained in paragraph 48 of the main text.

Figure 8: Perceptions of costs of searching and switching

Finding out about features and charges



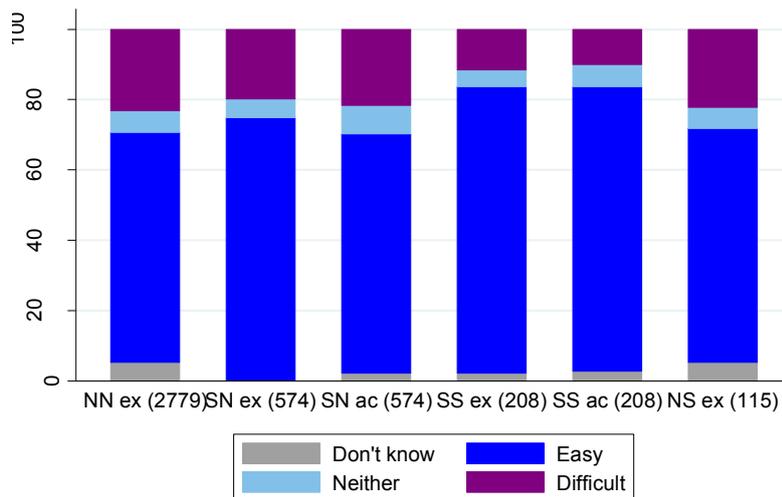
Understanding different options



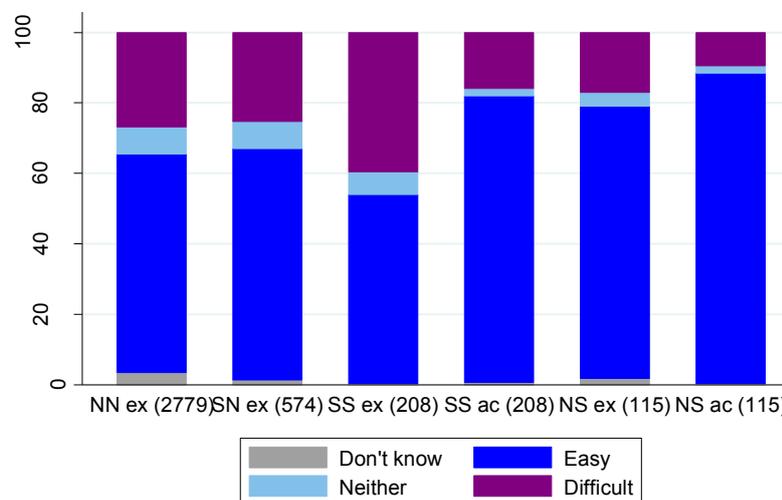
statistically significantly smaller for the last two dimensions only at 5 and 1% respectively. For the SS we only find statistically significant differences for the second dimension, and only for the share of customers responding 'easy' for the third dimension.

⁴⁵ This difference is statistically significant at 5%.

Making comparisons



Process of changing PCA



Source: CMA analysis based on GfK survey data.

Note: NN are 'non-searcher/non-switchers'; SN are 'searcher/non-switchers', SS are 'searcher/switchers'; and NS are 'non-searcher/switchers'. For searcher/switchers we report both their expectations before they searched/switched (ex), and their perceptions regarding the actual experience of searching/switching (ac).

33. If we compare instead switchers' level of expectation ('SS ex' in bar 3 and 'NS ex' in bar 5) to their actual experience ('SS ac' in bar 4 and 'NS ac' in bar 6), we see that they found on average the actual experience easier than what they expected, and the difference is particularly pronounced for the SS group.
34. Similar differences between expectation and actuals are found for the SS concerning the first two dimensions of searching, while there is no difference between expectation and actuals in the 'Making comparisons' panel. Finally,

unlike the case of switching, they report higher degrees of difficulty in the actual process of searching than they expected.⁴⁶

35. In summary, this evidence suggests that people who have switched PCAs during 2014 have found on average the process easier than they expected. This could be due to a share of customers not being aware of CASS prior to switching. As to the comparison of expectations across customer groups, we find that survey responses for this particular question may not be comparable due to the reasons set out in paragraph 11 above. For this reason, for the purpose of the econometric analysis, we rely on objective customer characteristics that are related to difficulties in searching and switching, rather than reported expectations.

Direct debits and other transactions

Table 3: Direct debits and transactions

<i>Groups</i>	<i>Number of direct debits and standing orders†</i>	<i>Number of transactions‡</i>
Non-searcher/Non-switchers	11	39
Searcher/Non-switchers	12**	40
Searcher/Switchers	10	34***
Non-searcher/Switchers	6***	38

Source: CMA analysis based on banks' transaction and GfK survey data.

†As at the end of 2014, number of observations 2,824.

‡Average number of debit and credits per month calculated using transaction data of the last quarter of 2014, number of observations 3,640.

***/**/* Statistically significantly different from share or mean of group of non-searcher/non-switchers at 1, 5 and 10% confidence.

36. Next we look at two indicators of PCA activity that may be associated with higher perceived costs of switching, namely the number of direct debits and standing orders in the account and the average number of monthly transactions. The group of searcher/switchers have a similar level of direct debits to the reference group, while the SN have a higher number on average. As for NS, their level of direct debits is much lower than that of the reference group. This could suggest that for some customers, the number of direct debits could work as a barrier to switching. However, the difference observed for the NS is likely to be driven by the higher share of younger people and students in this group, who are likely to have less direct debits than older customers.

⁴⁶ In fact, a larger share of customers in this group indicate that they expected the process to be “easy” as compared to the share indicating that the process was actually “easy”. This is true in all three dimensions of switching and the differences are statistically significant at 1%. The share of those reporting that they expected the process to be “difficult” as opposed to those that thought the actual process was “difficult” is smaller for all three dimensions but the difference is only statistically significant for the first dimension “finding out about features and charges”.

37. As for the number of transactions, the searcher/switchers present a significant difference with respect to the reference group NN. These results suggest that a higher level of intensity of the use of a PCA may constitute a barrier to switching for some customers.

Appendix D: Details of the econometric analysis

1. In this appendix we present the econometric analysis we carried out to analyse the main factors explaining the difference between searchers and switchers, as compared to other customers.

Methodology

2. We observe searching and switching as binary choices, that is, we see whether customers search or not, or switch or not. Mathematically, we can express searching and switching as follows:

$$Pr(Searching_i|X_i) = f(\beta_i'X_i)$$

$$Pr(Switching_i|Z_i) = f(\delta_i'Z_i)$$

3. The equations above indicate that the probability that a customer i searches or switches, denoted $Pr(Searching)$ and $Pr(Switching)$, is a function of a set of drivers and deterrents indicated by X_i and Z_i respectively. We estimate these models using a probit model.
4. The coefficients in a binary choice model lack a direct interpretation due to the non-linear nature of the model. In order to obtain an estimate of the effect of each factor on the probability of searching or switching, we need to calculate the average marginal effects.⁴⁷ These allow us to understand not only whether the variation in one of the factors has a statistically significant impact on the probability of searching/switching, but also its magnitude.
5. As a first step, we estimate separate models for searching and switching. However, for many customers searching is a prerequisite to switching and the result of their searching efforts determines whether they switch or not. For this reason, we also estimate a model that links the two. More specifically, we estimate the following system:

$$Pr(Searching_i|X_i) = f(\beta_i'X_i)$$

$$Pr(Switching_i|Z_i, Searching_i) = f(\delta_i'Z_i, Searching_i)$$

6. This type of model is called the 'recursive bivariate probit' model.⁴⁸ This model allows us to account for two issues: 1) the fact that the decisions of searching

⁴⁷ Average marginal effects are obtained by evaluating the average effect of a change in the variable of interest at the observation level and then averaging these across the sample.

⁴⁸ Given that we estimate a recursive bivariate probit model when modelling jointly searching and switching, in order to compare results more easily, we estimate a probit model rather than a logit when modelling separately searching and switching. Probit and logit models are both standard in the literature and in general produce very similar results.

and switching are correlated, and 2) the fact that whether a customer searched or not will have an impact on their probability of switching.

Results of separate models for searching and switching (probit)

7. Table 1 presents the results of the estimation of the searching model. We present four alternative specifications to illustrate the sensitivity or robustness of the results. For each specification, the table shows in the first column the estimated coefficients and in the second column the average marginal effects.
8. As we discussed above, the coefficients are not directly interpretable and therefore, we need to look at average marginal effects to be able to obtain a measure of the magnitude of the effect of each factor. The average frequency of searching in the subsample used in the estimation is 20%.⁴⁹
9. The results from the searching model can be summarised as follows:
 - (a) We find no statistically significant effect for gender.
 - (b) Customers with income below £24,000 are 3 percentage points less likely to search, although this effect is not significant in all specifications.
 - (c) Customers aged between 55 and 64 are 7 percentage points more likely to search.
 - (d) Customers with a degree are 3 percentage points more likely to search.
 - (e) Customers with higher financial literacy are 5 percentage points more likely to search.
 - (f) Customers who indicate having confidence in the use of the internet are 13 percentage points more likely to search.
 - (g) We do not find a statistically significant effect of overdraft usage on searching, while high credit balance holders are 4 percentage points more likely to search.
 - (h) Customers who experienced a local branch closure are 10 percentage points more likely to search.

⁴⁹ The analysis is not carried out on the entire survey sample, so this frequency represents the incidence of searching in the subsample used for the analysis and is not a measure of the frequency of searching in the population. This was reported in Table 1 and is equal to 17%.

- (i) Customers that have changed work status are 5 percentage points more likely to search.
 - (j) Customers that never use internet banking are 4 percentage points less likely to switch.
 - (k) Customers reporting a higher number of transactions (debits and credits) are less likely to search. The average estimated effect is 0.1 percentage points per additional transaction.
10. We also tested whether working status had an impact on searching but did not find a statistically significant effect.

Table 1: Searching model (probit)

	(1) Coefficients	(2) Marginal effects	(3) Coefficients	(4) Marginal effects	(5) Coefficients	(6) Marginal effects	(7) Coefficients	(8) Marginal effects
Female	-0.076 (0.061)	-0.020 (0.016)	-0.082 (0.061)	-0.022 (0.016)	-0.075 (0.061)	-0.020 (0.016)	-0.064 (0.062)	-0.017 (0.016)
Income below £24,000	-0.135** (0.065)	-0.036** (0.017)	-0.106 (0.067)	-0.028 (0.018)	-0.122* (0.067)	-0.032* (0.018)	-0.155** (0.074)	-0.041** (0.019)
Aged 35 to 54	-0.023 (0.079)	-0.006 (0.021)	-0.049 (0.079)	-0.013 (0.021)	-0.003 (0.081)	-0.001 (0.021)	-0.014 (0.082)	-0.004 (0.021)
Aged 55 to 64	0.242*** (0.091)	0.069** (0.027)	0.185** (0.092)	0.052* (0.027)	0.235** (0.095)	0.066** (0.028)	0.235** (0.098)	0.066** (0.029)
Aged 65 or above	0.152 (0.096)	0.042 (0.028)	0.064 (0.102)	0.017 (0.028)	0.121 (0.106)	0.033 (0.030)	0.117 (0.110)	0.031 (0.030)
Degree	0.151** (0.064)	0.041** (0.017)	0.140** (0.065)	0.038** (0.018)	0.132** (0.065)	0.035** (0.018)	0.113* (0.066)	0.030* (0.018)
Financial literacy	0.207*** (0.065)	0.055*** (0.017)	0.205*** (0.066)	0.054*** (0.017)	0.201*** (0.066)	0.052*** (0.017)	0.193*** (0.067)	0.050*** (0.017)
Internet confidence	0.618*** (0.095)	0.141*** (0.018)	0.617*** (0.096)	0.140*** (0.018)	0.616*** (0.096)	0.139*** (0.018)	0.563*** (0.101)	0.128*** (0.019)
Overdraft user			-0.084 (0.071)	-0.022 (0.018)	-0.082 (0.071)	-0.022 (0.018)	-0.047 (0.074)	-0.012 (0.019)
High credit balance			0.153** (0.077)	0.042* (0.022)	0.152** (0.077)	0.041* (0.022)	0.170** (0.077)	0.046** (0.022)
Local branch closed			0.322*** (0.112)	0.095*** (0.036)	0.326*** (0.112)	0.095*** (0.036)	0.305*** (0.112)	0.088** (0.035)
Moved house					0.134 (0.091)	0.037 (0.026)		
Changed work status					0.184** (0.084)	0.051** (0.024)	0.189** (0.084)	0.052** (0.024)
Changed relationship status					-0.116 (0.120)	-0.030 (0.029)		
Never uses internet banking							-0.176** (0.084)	-0.045** (0.021)
Never uses mobile app							-0.000 (0.072)	-0.000 (0.019)
Number of transactions							-0.003** (0.001)	-0.001** (0.000)
Constant	-1.509*** (0.127)		-1.518*** (0.132)		-1.584*** (0.137)		-1.355*** (0.156)	
Observations	3,537	3,537	3,537.000	3,537	3,537	3,537	3,502	3,502
F-statistics	13.193		11.000		9.339		9.034	
P-value	0.000		0.000		0.000		0.000	

Source: CMA analysis based on banks' transaction and branch data and GfK survey data.

***/**/* indicate statistically significantly different from zero at 1, 5 and 10% confidence respectively.

Note: Standard errors, reported in round brackets, were adjusted to account for sample weights and stratification.

11. Table 2 presents the results of the switching model. As above, we report for each alternative specification the estimated coefficient and the marginal

effects. The incidence of switching in the subsample used in the estimation is 3.8%.

12. In summary, the results of the switching model show that:
 - (a) Women are 1 percentage point less likely to switch than men.
 - (b) Customers aged between 35 and 54 are 1 percentage point less likely to switch.
 - (c) Customers aged between 55 and 64 are 2 percentage points less likely to switch.
 - (d) We do not find a statistically significant effect for degree and financial literacy.
 - (e) Customers who report having confidence in the use of the internet are 1 percentage point more likely to switch. This result is sensitive to the model specification.
 - (f) Overdraft users are 2 percentage points less likely to switch, while no statistically significant effect is found for high credit balance holders in the model including all switchers.
 - (g) Customers who have seen the closure of a local branch are 4 percentage points more likely to switch.
 - (h) Customers whose bank has a relatively larger branch network in their region, are less likely to switch. The estimated average effect is 2 percentage points.
 - (i) Customers who indicate never using mobile apps are 1 percentage point less likely to switch.
 - (j) Customers reporting a higher number of transactions (debits and credits) are less likely to switch. The average estimated effect is 0.04 percentage points per additional transaction.
13. We also tested the following factors but did not find a statistically significant effect on switching:
 - (a) Life events, such as moving house, or changing relationship status or work status.
 - (b) Working status, namely being retired, a full time student or not working.

Table 2: Switching model (probit)

	(1) <i>Coefficients</i>	(2) <i>Marginal effects</i>	(3) <i>Coefficients</i>	(4) <i>Marginal effects</i>	(5) <i>Coefficients</i>	(6) <i>Marginal effects</i>	(7) <i>Coefficients</i>	(8) <i>Marginal effects</i>
Female	-0.186** (0.077)	-0.014** (0.006)	-0.179** (0.076)	-0.014** (0.006)	-0.178** (0.080)	-0.013** (0.006)	-0.158** (0.080)	-0.012** (0.006)
Income below £24,000	-0.115 (0.085)	-0.009 (0.007)	-0.080 (0.083)	-0.006 (0.007)	-0.080 (0.087)	-0.006 (0.007)	-0.134 (0.097)	-0.010 (0.008)
Aged 35 to 54	-0.127 (0.096)	-0.010 (0.007)	-0.157* (0.094)	-0.012* (0.007)	-0.174* (0.099)	-0.013* (0.007)	-0.122 (0.099)	-0.009 (0.007)
Aged 55 to 64	-0.195 (0.120)	-0.014* (0.008)	-0.284** (0.118)	-0.019*** (0.007)	-0.305** (0.122)	-0.020*** (0.007)	-0.255** (0.123)	-0.017** (0.007)
Aged 65 or above	-0.046 (0.125)	-0.004 (0.009)	-0.197 (0.138)	-0.014 (0.009)	-0.154 (0.142)	-0.011 (0.009)	-0.152 (0.143)	-0.011 (0.009)
Degree	-0.045 (0.078)	-0.004 (0.006)						
Financial literacy	0.112 (0.082)	0.009 (0.006)						
Internet confidence	0.171 (0.112)	0.012* (0.007)	0.183* (0.108)	0.013* (0.007)	0.154 (0.110)	0.011 (0.007)	0.112 (0.128)	0.008 (0.008)
Overdraft user			-0.261*** (0.089)	-0.019*** (0.006)	-0.234** (0.092)	-0.016*** (0.006)	-0.190** (0.094)	-0.013** (0.006)
High credit balance			0.159* (0.096)	0.013 (0.009)	0.128 (0.101)	0.010 (0.009)	0.175* (0.101)	0.014 (0.009)
Local branch closed			0.367*** (0.140)	0.038** (0.019)	0.398*** (0.143)	0.041** (0.019)	0.333** (0.146)	0.032* (0.017)
Relative size of branch network					-0.310** (0.140)	-0.024** (0.011)	-0.400*** (0.142)	-0.030*** (0.011)
Never uses internet banking							-0.083 (0.115)	-0.006 (0.008)
Never uses mobile app							-0.173** (0.084)	-0.013** (0.007)
Number of transactions							-0.005*** (0.002)	-0.0004*** (0.000)
Constant	-1.757*** (0.152)		-1.676*** (0.150)		-1.473*** (0.181)		-1.099*** (0.205)	
Observations	3,537	3,537	3,675	3,675	3,585	3,585	3,549	3,549
F-statistic	2.534		4.728		3.673		4.397	
P-value	0.009		0.000		0.000		0.000	

Source: CMA analysis based on banks' transaction and branch data and GfK survey data.

***/**/* indicate statistically significantly different from zero at 1, 5 and 10% confidence respectively.

Note: Standard errors, reported in round brackets, were adjusted to account for sample weights and stratification.

14. The descriptive statistics presented in the first part of this paper show that the group of non-searcher/switchers differs in many dimensions to the group of searcher/switchers. We next analyse how the results change if we estimate the model excluding this group from the sample. The incidence of switching in that subsample is 3%. The results are presented in Table 3.

15. Some results change once the NS group is excluded. These changes are in line with the differences between the SS and NS groups found in the descriptive analysis. In particular:
- (a) The effect of gender is no longer significant.
 - (b) The effect for those aged between 35 and 54 is no longer significant.
 - (c) The effect for customers aged between 55 and 64 is not significant in all specifications.
 - (d) We find an average effect of 1 percentage point for financial literacy, although this is not significant in all specifications.
 - (e) Customers who hold high credit balances are 1 to 2 percentage points more likely to switch.
 - (f) The effect of the relative size of the banks' regional branch network is no longer significant.
 - (g) Customers who indicate never using internet banking are 1 percentage point less likely to switch (the effect for mobile apps is unchanged).
 - (h) Customer who report their working status as 'not working' are 2 percentage points less likely to switch.

Table 3: Switching model (probit) excluding non-searcher/switchers

	(1) Coefficients	(2) Marginal effects	(3) Coefficients	(4) Marginal effects	(5) Coefficients	(6) Marginal effects	(7) Coefficients	(8) Marginal effects
Female	-0.146 (0.090)	-0.009 (0.006)	-0.118 (0.089)	-0.007 (0.005)	-0.125 (0.092)	-0.008 (0.006)	-0.086 (0.091)	-0.005 (0.005)
Income below £24,000	-0.111 (0.101)	-0.007 (0.006)	-0.080 (0.100)	-0.005 (0.006)	-0.098 (0.102)	-0.006 (0.006)	-0.134 (0.111)	-0.008 (0.007)
Aged 35 to 54	-0.105 (0.115)	-0.006 (0.007)	-0.141 (0.114)	-0.009 (0.007)	-0.172 (0.118)	-0.010 (0.007)	-0.074 (0.113)	-0.004 (0.007)
Aged 55 to 64	-0.145 (0.136)	-0.008 (0.007)	-0.243* (0.137)	-0.013** (0.007)	-0.246* (0.140)	-0.013** (0.007)	-0.161 (0.137)	-0.009 (0.007)
Aged 65 or abov	0.097 (0.141)	0.006 (0.010)	-0.062 (0.158)	-0.004 (0.009)	-0.040 (0.161)	-0.002 (0.009)	-0.012 (0.159)	-0.001 (0.010)
Degree	0.030 (0.089)	0.002 (0.006)						
Financial literacy	0.197* (0.102)	0.012** (0.006)	0.158 (0.099)	0.010* (0.006)	0.149 (0.102)	0.009 (0.006)	0.143 (0.102)	0.008 (0.006)
Internet confidence	0.285* (0.147)	0.015** (0.006)	0.277* (0.141)	0.015** (0.006)	0.260* (0.143)	0.014** (0.007)	0.205 (0.167)	0.011 (0.008)
Overdraft user			-0.237** (0.109)	-0.013** (0.006)	-0.227** (0.111)	-0.013** (0.006)	-0.180 (0.111)	-0.010* (0.006)
High credit balance			0.219** (0.107)	0.015* (0.008)	0.193* (0.111)	0.013 (0.008)	0.292*** (0.108)	0.020** (0.008)
Local branch closed			0.404** (0.159)	0.035* (0.018)	0.415** (0.162)	0.035* (0.018)	0.347** (0.164)	0.027* (0.017)
Relative size of branch network					-0.266 (0.163)	-0.016 (0.010)		
Never uses internet banking							-0.214 (0.133)	-0.012* (0.007)
Never uses mobile app							-0.204** (0.094)	-0.013** (0.006)
Number of transactions							-0.006*** (0.002)	-0.0003*** (0.000)
Constant	-2.131*** (0.191)		-2.081*** (0.195)		-1.872*** (0.217)		-1.681*** (0.226)	
Observations	3,427	3,427	3,560	3,560	3,486	3,486	3,524	3,524
F-statistic	2.954		4.271		3.452		5.819	
P-value	0.003		0.000		0.000		0.000	

Source: CMA analysis based on banks' transaction and branch data and GfK survey data.

***/**/* indicate statistically significantly different from zero at 1, 5 and 10% confidence respectively.

Note: Standard errors, reported in round brackets, were adjusted to account for sample weights and stratification.

Results of joint model of searching and switching (recursive bivariate probit)

16. In this section we present the results of estimating the recursive bivariate probit model. As explained in paragraph 61, this model accounts for the fact

that the decision to search may precede switching and therefore has an impact on its probability. The model results are presented in Table 4.⁵⁰

17. For the case of the switching model, the reported coefficients correspond to the impact of the factor on switching once we account for whether the customer has searched or not.
18. The main results are in line with what we found with the separate models above. The new results emerging from this model are:
 - (a) the effect of gender on switching is not significant in all specifications;
 - (b) the effect for customers aged between 35 and 54 on switching is no longer significant;
 - (c) confidence in the use of the internet has a negative effect on switching conditional on searching. This is in line with the differences we find for the SS and NS groups in the descriptive analysis;
 - (d) overdraft usage is not statistically significant; and
 - (e) local branch closure is not statistically significant for switching conditional on searching.

⁵⁰ The calculation of marginal effects for this type of model is more complex than for a standard bivariate probit model. We are currently working on obtaining these estimates and plan publish them in the final report.

Table 4: Joint model of searching and switching (recursive bivariate probit)

	(1) <i>Searching</i>	(2) <i>Switching</i>	(3) <i>Searching</i>	(4) <i>Switching</i>
Searching		-0.199 (1.228)		2.020*** (0.634)
Female	-0.079 (0.0609)	-0.189** (0.0861)	-0.063 (0.0622)	-0.143 (0.0922)
Income below £24k	-0.136** (0.0648)	-0.124 (0.0825)	-0.157** (0.0748)	-0.054 (0.107)
Aged 35–54	-0.022 (0.0789)	-0.123 (0.0960)	-0.036 (0.0814)	-0.086 (0.109)
Aged 55–64	0.241*** (0.0918)	-0.147 (0.234)	0.230** (0.0958)	-0.449*** (0.138)
Aged 65 or above	0.145 (0.0963)	-0.063 (0.156)	0.116 (0.108)	-0.241* (0.140)
Degree	0.151** (0.0641)	-0.031 (0.117)	0.117* (0.0666)	-0.215** (0.0927)
Financial literacy	0.205*** (0.0653)	0.108 (0.107)	0.191*** (0.0674)	-0.075 (0.0951)
Internet confidence	0.619*** (0.0954)	0.218 (0.347)	0.575*** (0.106)	-0.267* (0.143)
Overdraft user			-0.044 (0.0738)	-0.163 (0.106)
High credit balance			0.187** (0.0779)	0.052 (0.107)
Local branch closed			0.309*** (0.114)	0.080 (0.169)
Relative size of branch network				-0.307** (0.151)
Changed work status			0.165* (0.0872)	
Never uses internet banking			-0.163** (0.0802)	
Never uses mobile app				-0.184** (0.0899)
Number of transactions			-0.002* (0.00139)	-0.003* (0.00196)
Constant	-1.506*** (0.127)	-1.661*** (0.483)	-1.372*** (0.156)	-1.406*** (0.230)
Observations	3,537		3,416	
F-statistics	7.228		10.299	
P-value	0.000		0.000	
Rho	0.936 (1.150)		-0.458 (0.412)	

Source: CMA analysis based on banks' transaction and branch data and GfK survey data.

***/**/* Indicate statistically significantly different from zero at 1, 5 and 10% confidence respectively.

Note: The table reports estimated coefficients. Standard errors, reported in round brackets, were adjusted to account for sample weights and stratification.