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Demographic factors and customers' bank choice criteria

Abstract
The main objective of the presented research is to verify the influence of demographic factors on retail customers' bank selection criteria in Poland. We compiled descriptive and inferential statistics and did factor analysis using Principal Component Analysis. Our dataset is based on a sample of 515 questionnaires that were gathered in the first quarter of 2022. The results proved that there are significant differences among various groups of respondents and their bank selection criteria. The highest number of differences appear in the case of demographic factors of age, and then income and gender. In general, the most important factors are the cost of service and mobile and online banking. The study has direct implications for all types of banks that operate in developing markets, especially in East-Central Europe, as having this knowledge can help to appropriately target customers using bank selection criteria that are valued by different groups of customers.

Keywords
banks | selection criteria | customer behaviour | factor analysis | Poland

JEL Codes
G21, J10, D90

1. Introduction

The issue of how customers select banks has been given considerable attention by researchers (Almossawi, 2001; Lee & Marlowe, 2003; Devlin & Gerrard, 2005; Blankson et al., 2007; Amin, 2008; Sayani & Miniaoui, 2013; Arora & Kaur, 2019; Narteh & Braimah, 2020). However, in recent years, after the global financial crisis of 2007–2009 and then the Covid-19 pandemic crisis, we have seen an intensification of competition among banks all over the world. The digital revolution, changes in the way people bank, and the appearance of new institutions – FinTechs, or digital-only banks – create the need for the reevaluation of what we already know (Romānova & Kudinska, 2016; Hassani et al., 2018). At the same time, a significant number of widely cited studies regarding bank selection criteria were conducted in the previous century (to mention just a few: Anderson et al., 1976; Martenson, 1985; Javalgi et al., 1989; Denton & Chan, 1991; Thwaites & Vere, 1995; Edris, 1997; Phuong & Yin, 2000) analysing the topic in totally different circumstances and on a completely different level of the development of the banking sector. Even current research is largely based on studies conducted many years ago. For example, Arora and Kaur (2019) cite 108 references in their study, with more than half (61) from the previous century and 34 studies from the period up to 2010.

As banking is one of the many service industries characterised by high customer involvement, with individually customised service solutions, special attention should be paid to the demographic characteristics of customers. The better the bank knows its customers, the better, and more suitable, marketing strategy it can create. Indeed, researchers have noted that within the banking industry, there is an ongoing effort to enhance customer retention (Al-Ajmi et al., 2009; Echchabi & Nafiu Olaniyi, 2012) which seems to be especially crucial now with the pending digital revolution and high competition in the banking sector. Customers in banking come from a wide variety of sources, and considering how customers are attracted and retained is necessary. Over the years, Boyd et al. (1994), Kennington et al. (1996), Amin (2008), Devlin (2002) Narteh & Owusu-Frimpong (2011) and Kreituss et al. (2021) tried to verify the differences in bank selection factors among different genders, marital status, age, education groups or people with various occupations. Very often, however, these factors were treated as additional or supplementary aspects.

Moreover, many great authors (Almossawi, 2001; Blankson et al., 2007, Blankson et al., 2009; Rao & Sharma, 2010; Narteh & Owusu-Frimpong, 2011; Mohd Suki, 2018; Tucker & Jubb, 2018) based their research exclusively on a group of students, which cannot be perceived as a sufficient explanation for the bank choice factors among various groups of people characterised by different demographic factors.

Besides, much of the conducted research refers to countries such as the USA, UK, or Australia, which have highly developed economies (Boyd et al., 1994; Devlin, 2002; Devlin & Gerrard, 2004, 2005; Tucker & Jubb, 2018). There are also many studies that focus on countries with specific religions – Islam (Amin, 2008; Mansour et al., 2010; Awan & Shahzad Bukhari, 2011; Sayani & Miniaoui, 2013) or those less developed economies such as Ghana, Pakistan or India (Blankson et al., 2009; Arora and Kaur, 2019; Butt et al., 2022). However, not many studies – available in English – were performed in East-Central Europe (Kennington et al., 1996; Katircioglu et al., 2011; Kreituss et al., 2021). And even though all these and other past studies have substantially contributed to the existing literature on bank selection, their findings may not be applicable to other countries as a result of cultural, historical, economic, and legal differences.

Given that it is known that the bank selection process diverges from one population segment to another and from one country to another it seems necessary to explore the customers with different demographic characteristics. This research is therefore designed to contribute to the limited and obsolete current body of literature focusing on the factors determining customers' selection of bank. The main objective is to verify the influence of demographic factors on retail customers' bank selection criteria in Poland. There are two main research questions that we aim to answer:

1) *What are the main important bank choice criteria for Polish retail bank customers?*
2) *Are there significant disparities in bank selection criteria between people of different genders, ages, education, occupation, places of residence, and net incomes?*

This study contributes to the literature on bank choice criteria and market segmentation by providing current and detailed information about the decisions of retail customers in Poland, which is a country with a developing financial system. In addition, these analyses, together with a summary matrix of customer profiles, will allow bankers and researchers to formulate a more effective competitive marketing strategy, which indirectly helps the process of acquiring new customers and retaining them.

The rest of the paper proceeds as follows. The next section pertains to the detailed literature review. Thereafter, the data and methodology are discussed. Later, we present the findings and discussion, and managerial implications to be drawn from them. The paper concludes with a reflection on study limitations and future research directions.

2. Literature review

The concept of bank selection has been extensively explored in extant literature. Most of this research is geographically delineated (Kennington et al., 1996; Lee & Marlowe, 2003; Devlin & Gerrard, 2005; Kamakodi & Khan, 2008; Arora and Kaur, 2019; Narteh & Braimah, 2020), as well as delineated by market segment, such as undergraduate/postgraduate students (Blankson et al., 2007; Rao & Sharma, 2010; Narteh & Owusu-Frimpong, 2011; Mohd Suki, 2018). Some are religion-centered (Amin, 2008; Mansour et al., 2010; Awan & Shahzad Bukhari, 2011; Sayani & Miniaoui, 2013). There are also studies that focus on financial products such as mortgages or credit cards (Devlin, 2002; Lymperopoulos et al., 2006; Amin, 2013). Some of these studies have also tried to capture the disparities between different groups of people according to demographic factors, but few have put much emphasis on this part. This is quite interesting, especially as, now more than ever, there is a need for an individual approach to the customers and their experience. An et al. (2018) explained that customer segmentation might lead to a deeper understanding of customer preferences, needs, and wants by isolating what each segment finds most valuable.

Boyd et al. (1994) surveyed households in a southeastern city of the USA taking into consideration a broad scope of demographic characteristics such as marital status, size of household, age of children, occupation, household income, age, and gender of the household head. It was proved that white-collar households indicate greater importance for reputation, modern facilities, and location in the city, while blue-collar households placed a greater emphasis on the availability of current accounts and drive-in service. Boyd et al. (1994) showed also that lower-income

families often choose to rely on favourable publicity or word of mouth and young households' heads place a very high emphasis on hours of operation and location in the city.

Kennington et al. (1996) studied consumer selection criteria for banks in Poland. They showed that although men and women agree on the top four criteria – reputation, rates, convenience, and service – there are some differences in how they view these criteria. For example, for females, family/friend influence is much more important than it is for men. The women also ranked rates as being more important than reputation. It was also proved that wealthier customers are not concerned with price but want reputation, service, and convenience, while for lower-income groups price is the main concern.

Devlin (2002) analysed the choice criteria in the home loans market in the UK, showing that females were significantly more likely to choose a mortgage where they have another account and were less likely to choose a mortgage primarily on the basis of professional advice. Devlin (2002) proved that lower social classes are more likely to act on the basis of a recommendation and professional advice, while higher classes are more likely to choose on the basis of interest rates. It was also proved that those of low educational attainment are significantly more likely to choose a mortgage provider on the basis of branch location.

Amin (2008) investigated the choice criteria for Islamic financing in Malaysian Islamic banks, proving that there is a statistically significant difference when it comes to gender, marital status, and age in some factors. According to research, for a single person, the main choice criterion was a lower monthly payment, while for those who were married the main criterion was the 'Shariah principle'. It was also shown that professional advice and branch location were insignificant for different age groups.

Jahiruddin and Haque (2009) carried out a study with a group of bank customers in Khulna, Bangladesh, revealing significant differences among the customers of different genders, education levels, and income levels when it comes to the choice of a bank from the three types – private, foreign, and public. Jahiruddin and Haque (2009) showed that males tended to choose private and foreign banks more than female customers while customers having the lowest and the highest educational background took advantage of the services of a public bank most. At the same time, it was proved that people of lower income levels preferred public banks. However, as their income level rose, their preference changed from public to private and foreign banks.

Narteh and Owusu-Frimpong (2011) verified a bank selection criterion of Ghanaian students, proving that the five most important bank selection factors for males were minimum deposit, networked branches, fast service, variety of service delivery, and a number of bank branches. For females, the critical factors were evidence of information technology, minimum deposit, safety in bank transactions, number of bank branches, fast service, and prestigious image. The difference was also shown between undergraduates and postgraduates. For the former group, the most important bank selection factor was minimum deposit while for the latter it was fast service.

Katircioglu et al. (2011) analysed bank selection criteria of customers in Romania. They proved that bank selection criteria do not statistically differ between personal characteristics such as gender and age but do differ between different regions of Romania and income levels. Overall, the most important bank selection factor was the number of ATM booths.

Kreituss et al. (2021) conducted research in the Latvian banking sector analysing such factors as services, service level, costs, branches, ATMs, reputation, financial situation, recommendation, advertising, and ownership. They found that the importance of a bank's reputation and image increases with customers' age, reaching its maximum value in the demographic group over the age of 56. It was also proved that place of residence has a low impact on the bank choice and only some small regional differences came out: for instance, advertising is less important for inhabitants of the capital and more important for residents of the countryside.

3. Data and methodology

3.1. Sampling

The present study samples are based on 515 customers of the banks. The data were gathered online, using Computer-Assisted-Web-Interview (CAWI) in March 2022. The questionnaire was distributed among Polish residents who 1) 18 years old or older, 2) have a bank account, and 3) were diversified in terms of gender, age, education, occupation, place of residence, and net

Table 1. Demographic profile of the respondents

Category	Description	N	%	Category	Description	N	%
gender	women	299	58.06	**occupation**	unemployed	36	6.99
	men	216	41.94		student	28	5.44
age	<=25	63	12.23		working	364	70.68
	26–35	114	22.14		retired	87	16.89
	36–45	125	24.27	**place of residence**	village	90	17.48
	46–55	89	17.28		town below 50,000 inhabitants	117	22.72
	56–65	80	15.53		town of 50 to 15,000 inhabitants	98	19.03
	>=66	44	8.54		city of 150 to 500,000 inhabitants	106	20.58
education	primary	10	1.94		city above 500,000 inhabitants	104	20.19
	vocational	39	7.57	**average net income per person***	less than 435 EUR	125	24.27
	secondary	225	43.69		436–870 EUR	287	55.73
	higher	241	46.80		871–1,305 EUR	70	13.59
					1,306 EUR and more	33	6.41

**Net Income was originally in Polish zloty. In order to convert it to euro, we used the exchange rate from 31 December 2021. According to the National Bank of Poland exchange rate table the exchange rate was EUR/PLN 4.5594.*

income. The six demographic factors chosen are the most common variables that were verified by many previous authors (Kennington et al., 1996; Devlin, 2002; Jahiruddin & Haque, 2009; Kreituss et al., 2021)

In the study sample of 515 people, 58.10 percent was female and 41.90 percent was male. The age range for the study population was 18–80 years, with a median of 42 years. Most respondents had higher (46.80 percent) or secondary education (43.69 percent). A small percentage were people with vocational education (7.57 percent) or primary education (1.94 percent). Most respondents were employed (70.68 percent). Analysing the place of residence of respondents, we noted that specific categories had similar response rates, with the highest number of people living in a town up to 50 thousand inhabitants (22.72 percent), and the lowest in a village (17.48 percent). The average net income per person in the household of most respondents (55.73 percent) was between 436 EUR and 870 EUR. Detailed characteristics of the studied population are presented in Table 1.

3.2. Measurement

The questionnaire for this study was constructed into two sections. The first section consisted of demographic elements, namely, gender, age, education, occupation, place of residence, and net income. The second section consisted of the selection criteria. The measures employed in this study are extracted from previous studies. The following, in Table 2, are the selection criteria employed.

In measuring the above choice criteria, the respondents were allowed to choose three out of seven factors that did influence their decision about choosing the bank. We used a nominal non-alternative scale with multidivisional classification. The questionnaire was written in Polish and for the purpose of the article translated to English. The pre-test was performed to ensure the questionnaire possessed appropriate sequential arrangement, clarity of asked questions, and the words used (Kumar et al., 2013).

3.3. Data analysis

To recap, it is the purpose of this study to understand the influence of demographic factors on the retail customers' bank selection criteria. To address this aim, we performed a two-step analysis. The first step includes descriptive and inferential statistics, and the second step is factory analysis, using Principal Component Analysis (PCA).

Table 2. Bank selection criteria

No	Criteria	Criteria - abbreviation	Literature
1	recognisable brand	brand	Narteh & Owusu-Frimpong (2011), Saleh et al. (2013); Narteh & Braimah (2020)
2	reputation	reputation	Almossawi (2001), Devlin & Gerrard (2005), Arora & Kaur (2019)
3	friends/family recommendation	recommendation	Kennington et al. (1996), Almossawi (2001), Blankson et al. (2007)
4	cost of services	cost	Devlin & Gerrard (2005), Blankson et al. (2007), Amin (2008), Arora & Kaur (2019),
5	convenient bank's localisation	localisation	Boyd et al. (1994), Lee & Marlowe (2003), Amin (2008), Devlin & Gerrard (2004), Blankson et al. (2009), Jahiruddin & Haque (2009)
6	easy and friendly online and mobile banking	e-banking	Devlin & Gerrard (2005), Mohd Suki (2018) , Butt et al. (2022)
7	others	others	Martenson (1985) , Kennington et al. (1996)

As part of the first step, for the investigation to examine differences between choice criteria and demographic factors, two tests were used, notably the independent proportion Z-Test and F-Snedecor test. The former was employed in order to compare the proportion for two groups of cases and used to test whether the difference in proportions of one variable in two groups of respondents is statistically significant. It is used to test gender. Unlike the Z-test, the F-Snedecor test is used to compare proportions for more than two independent groups of cases such as age range or education. The F-Snedecor is used to test the whole sample and then age, education, occupation, place of residence, and net income. For those factors that obtained statistically significant results in the F-Snedecor tests, we conducted post hoc tests to see which specific groups differ. We did not implement the ANOVA analysis as the data set does not have a normal distribution.

As part of the second step, the principal component analysis (PCA) was performed with the direct Oblimin rotation method to examine whether items load onto the intended factors or not. PCA analyses a data table representing observations described by several dependent variables, which are, in general, inter-correlated. Its goal is to extract the important information from the data table and to express this information as a set of new orthogonal variables called principal components (Abdi & Williams, 2010). The PCA is very common for this type of research and was also used by Blankson et al. (2009), Narteh and Owusu-Frimpong (2011), and Tucker and Jubb (2018), Arora and Kaur (2019). The criteria used when determining the number of factors were: eigenvalue greater than one through PCA and a cumulative percentage of variance explained being greater than 50 percent (Costello & Osborne, 2005).

4. Results

In this section, we present the two-step analysis. The first step in the analysis of the influence of demographic factors on bank choice criteria. The second step includes the PCA. During the demographic factor analyses and PCA, the criterion "others" was omitted as it was statistically insignificant and deteriorated results.

4.1. General bank selection factors

Analysing the results for the whole studied population it was proved that there are statistically significant differences between the bank selection criteria. The most important for respondents was the cost of services and the least important criterion was the bank's reputation. At the same time, the second most important criterion was easy and friendly mobile and online banking. The localisation of the bank and the bank's brand were third and fourth respectively. The general bank selection factors for the whole sample are presented in Table 3.

Table 3. Bank selection factor – the whole sample

Bank choice criteria	whole sample			F
	n	p	r	
brand	162	0.315	4	75,738**
reputation	112	0.217	6	
recommendation	142	0.276	5	
cost	344	0.668	1	
localisation	212	0.412	3	
e-banking	297	0.577	2	

Note: n – number, p – proportion, r – ranking, F – test statistics, ** - significance at 0.05 level. The explanation relates to all tables

Table 4. Comparison of bank selection between men and women

Bank choice criteria	Women (299)			Men (216)			z
	n	p	r	n	p	r	
brand	76	0.254	5	86	0.398	4	-3.472**
reputation	65	0.217	6	47	0.218	6	-0.005
recommendation	94	0.314	4	48	0.222	5	2.309**
cost	205	0.686	1	139	0.644	1	1.001
localisation	119	0.398	3	93	0.431	3	-0.741
e-banking	172	0.575	2	125	0.579	2	-0.078

Note: z – test statistics. In brackets, there is the total number of respondents in a given group. The explanation relates to all tables

4.2. Comparison of bank selection between men and women

The verification of bank selection criteria between men and women proved that both groups chose as the most important reason the cost of services provided by the bank. The consistency of results was also presented for the second and third most crucial determinants, which were convenient mobile and online banking and localisation of the bank. The statistically significant differences were proved for the criteria brand and recommendations from family and friends. The latter was more important for women. The results of the comparison of bank selection between men and women is shown in Table 4.

4.3. Comparison of bank selection between different age groups

There were many differences in the bank choice criteria between various age groups, as four out of six tests were proved to be statistically significant. The biggest discrepancies appeared in the case of the recommendation factor. It was quite important for young people and the least crucial for the middle-aged (46–55 years old). The post hoc test proved that there are statistically significant differences in the recommendation factor between the youngest respondents and all groups besides those 26–35 years old. According to the ranking, the cost of services was the most important criterion for all age groups; however, the differences in the proportions were statistically significant. We can observe that for people between 36 and 45 years old almost 77 percent indicated is as the crucial factor and in the case of people under 25 years, around 50 percent. The post hoc tests confirmed a statistically significant difference between this pair. The differences were also found for the reputation criterion and localisation of the bank. The reputation of the bank was the least key factor for all age groups, excluding the youngest (fourth place) and the middle-aged group (fifth place). The comparison of bank selection between different age groups was presented in Table 5.

4.4. Comparison of bank selection between different education groups

The analysis of education was performed for three categories: namely, secondary education, higher, and vocational. It could not be performed for primary education as there were not enough respondents to conduct the test. The cost of services was the factor that divides the whole sample significantly. There is a great difference between people with vocational education and secondary, and higher. For the latter groups, it was the most important determinant of bank choice whereas for the first group, it was only in third place. The post hoc tests confirmed statistically significant differences between those pairs. For those with vocational education equally and the most crucial were easy and friendly online and mobile banking as well as convenient bank localisation. The comparison of bank selection between different education groups is presented in Table 6.

Table 5. Comparison of bank selection between different age groups

Bank choice criteria	<=25 (63)			26-35 (114)			36-45 (125)			
	n	p	r	n	p	r	n	p	r	
brand	18	0.286	5	35	0.307	5	35	0.280	4	
reputation	22	0.349	4	28	0.246	6	28	0.224	6	
recommendation	31	0.492	3	39	0.342	3	34	0.272	5	
cost	32	0.508	1	73	0.640	1	96	0.768	1	
localisation	18	0.286	5	38	0.333	4	51	0.408	3	
e-banking	32	0.508	1	66	0.579	2	76	0.608	2	
Bank choice criteria	**46-55 (89)**			**56-65 (80)**			**>=66 (44)**			**F**
	n	**p**	**r**	**n**	**p**	**r**	**n**	**p**	**r**	
brand	33	0.371	4	24	0.270	4	17	0.386	4	0.678
reputation	20	0.225	5	10	0.125	6	4	0.091	6	3.253**
recommendation	18	0.202	6	15	0.188	5	5	0.114	5	6.303**
cost	58	0.652	1	58	0.725	1	27	0.614	1	3.055**
localisation	43	0.483	3	41	0.513	3	21	0.477	3	2.675**
e-banking	51	0.573	2	49	0.613	2	23	0.523	2	0.535

Note: Post hoc tests conducted proved that – when it comes to reputation, there are statistically significant differences between the youngest and the oldest respondents (two groups – 56–65 and over 66 years old). When it comes to the recommendation, there are statistically significant differences between the youngest (<=25) and all age groups, excluding 26–35 years old. When it comes to cost, there are statistically significant differences between two pairs – the youngest and both middle-aged groups (36–45 and 46–55 years old). When it comes to localisation, there are three pairs of significant differences, the first two for the youngest and the oldest (both groups) and the third between the youngest and 46–55 years old

Table 6. Comparison of bank selection between different education groups

Bank choice criteria	Secondary (225)			Higher (241)			Vocational (39)			F
	n	p	r	n	p	r	n	p	r	
brand	74	0.329	4	72	0.299	4	11	0.282	5	0.334
reputation	53	0.236	6	52	0.216	6	5	0.128	6	1.253
recommendation	60	0.267	5	64	0.266	5	13	0.333	4	0.399
cost	149	0.662	1	175	0.726	1	14	0.359	3	10.447**
localisation	99	0.440	3	91	0.378	3	20	0.513	1	1.745
e-banking	129	0.573	2	141	0.585	2	20	0.513	1	0.159

Note: Post hoc tests conducted proved that – when it comes to the cost of services, there are two statistically significant differences for the pairs secondary and vocational education, as well as higher and vocational education

4.5. Comparison of bank selection between different occupation groups

The conducted tests did not show large discrepancies between people with different occupations. There was only one difference proved for the reputation determinant as it was the least important factor for all groups excluding those who were unemployed. For this particular group, the factor of reputation was in fourth place. The post hoc test conducted proved that there is statistically significant difference for reputation between the unemployed and retired.

Table 7. Comparison of bank selection between different occupation groups

Bank choice criteria	Unemployed (36)			Retired (87)			Working (364)			Student (28)			F
	n	p	r	n	p	r	n	p	r	n	p	r	
brand	9	0.250	5	29	0.333	4	116	0.319	4	8	0.286	5	0.337
reputation	12	0.333	4	9	0.103	6	85	0.234	6	6	0.214	6	3.439**
recommendation	13	0.361	3	17	0.195	5	103	0.283	5	9	0.321	4	0.357
cost	20	0.556	1	57	0.655	1	250	0.687	1	17	0.607	1	1.010
localisation	9	0.250	5	38	0.437	3	155	0.426	3	10	0.357	3	1.692
e-banking	18	0.500	2	48	0.552	2	214	0.588	2	17	0.607	1	0.460

Note: Post hoc tests conducted proved that – when it comes to reputation there are two statistically significant differences, for the pair unemployed and retired and for the pair retired and working

For all groups, the most important criterion was the cost of services, with the highest percentage for the working group (almost 69 percent). For students, however, e-banking was the most important, equal to costs. The comparison of bank selection between different occupation groups is shown in Table 7.

4.6. Comparison of bank selection between different place of residence groups

Analysing the place of residence of respondents, it was observed that for all groups the two most important criteria were the cost of financial services and e-banking. The conducted test allowed us to identify one statistically significant difference for the determinant – localisation. It was in third place for all groups besides the respondents who indicated living in the largest cities. For this specific group, the brand of the bank was more important than the localisation of the bank. The post hoc tests proved that there is an especially significant difference between people living in the smallest towns and those living in the largest cities. It could be easily explained as people who live in big cities have easy access to all different kind of institutions and services therefore the localisation of the bank branch is not their concern. The comparison of bank selection between different place of residence groups is shown in Table 8.

4.7. Comparison of bank selection between different income groups

Analysing the differences between people with different levels of net income per person in the household, it was shown that there are two statistically significant differences between proportions. The first one was for the criterion of reputation. For all groups, it was the least important factor excluding those with an average income of 871 EUR up to 1,305 EUR. The second difference was proved for the determinant localisation of the bank. For all groups it was in third place, excluding again the middle-income group (871–1,305 EUR). At the same time, for the richest group, the factor cost of services is not in the first place in ranking whereas for others it is the most important criterion. For the richest, the most important is easy and friendly mobile and online banking. The comparison of bank selection between different income groups is presented in Table 9.

4.8. Summary matrix of demographic factors and the most and the least important criteria

The analyses performed created a possibility of a summary of the results in form of a matrix. The matrix can be especially useful for banks as they can easily identify the profile of their customers and the factors that make them choose the bank. We identified the two most important determinants for specific groups: these are the cost of services and e-banking. As the least important criteria, reputation and recommendation can be indicated. A detailed description of specific demographic groups can be found in Figure 1.

The PCA was executed to simplify the description of the data set and analyse the structure of the observations and the variables. Table 10 exhibits the results of PCA, which reveal three factors

Table 8. Comparison of bank selection between different place of residence groups

Bank choice criteria	Town below 50 thous. inhabitants (117)			Town of 50 to 150 thous. inhabitants (98)			City of 150 to 500 thous. inhabitants (106)		
	n	p	r	n	p	r	n	p	r
brand	43	0.368	4	32	0.327	4	25	0.236	6
reputation	17	0.145	6	17	0.173	6	31	0.292	5
recommendation	31	0.265	5	26	0.265	5	36	0.340	3
cost	72	0.615	1	70	0.714	1	79	0.745	1
localisation	58	0.496	3	45	0.459	3	36	0.340	3
e-banking	66	0.564	2	57	0.582	2	59	0.557	2

Bank choice criteria	City above 500 thous. inhabitants (104)			Village (90)			F
	n	p	r	n	p	r	
brand	40	0.385	3	22	0.244	5	2.315
reputation	26	0.250	5	21	0.233	6	2.271
recommendation	24	0.231	6	25	0.278	4	0.841
cost	65	0.625	1	58	0.644	1	1.610
localisation	34	0.327	4	39	0.433	3	2.511**
e-banking	64	0.615	2	51	0.567	2	0.234

Note: Post hoc tests conducted proved that – when it comes to localisation, there is a statistically significant difference between people living in the smallest towns and the largest cities, as well as between those living in the smallest towns and those living in cities of 150 to 500 thousand inhabitants

Table 9. Comparison of bank selection between different income groups

Bank choice criteria	Less than 435 EUR (125)			436-870 EUR (287)			871 EUR - 1.305 EUR (70)			1.306 EUR and more (33)			F
	n	p	r	n	p	r	n	p	r	n	p	r	
brand	28	0.224	5	101	0.352	4	22	0.314	5	11	0.333	4	2.282
reputation	23	0.184	6	59	0.206	6	25	0.357	3	5	0.152	6	3.355**
recommendation	38	0.304	4	75	0.261	5	19	0.271	6	10	0.303	5	0.304
cost	84	0.672	1	193	0.672	1	49	0.700	1	18	0.545	2	0.853
localisation	64	0.512	3	107	0.373	3	24	0.343	4	17	0.515	3	3.305**
e-banking	65	0.520	2	177	0.617	2	36	0.514	5	19	0.576	1	1.543

Note: Post hoc tests conducted proved that – when it comes to reputation there are three statistically significant differences, between those of 871–1.305 EUR income and the other three groups. When it comes to localisation, there are two statistically significant differences, for those who have less than 435 EUR and two middle-income groups

with eigenvalues of greater than 1, explaining approximately 65 percent of the total variance. Barlett's test of sphericity measure of sampling adequacy was computed for all measured items (excluding criterion 'others'), with statistics χ^2=216.63 (p<0.001). Additionally, in Table 10 factor loadings were presented (after suppressing the coefficient below 0.50).

The first factor correlates the most with the criteria cost of services and easy and friendly mobile and online banking and accounts for 25.25 percent of

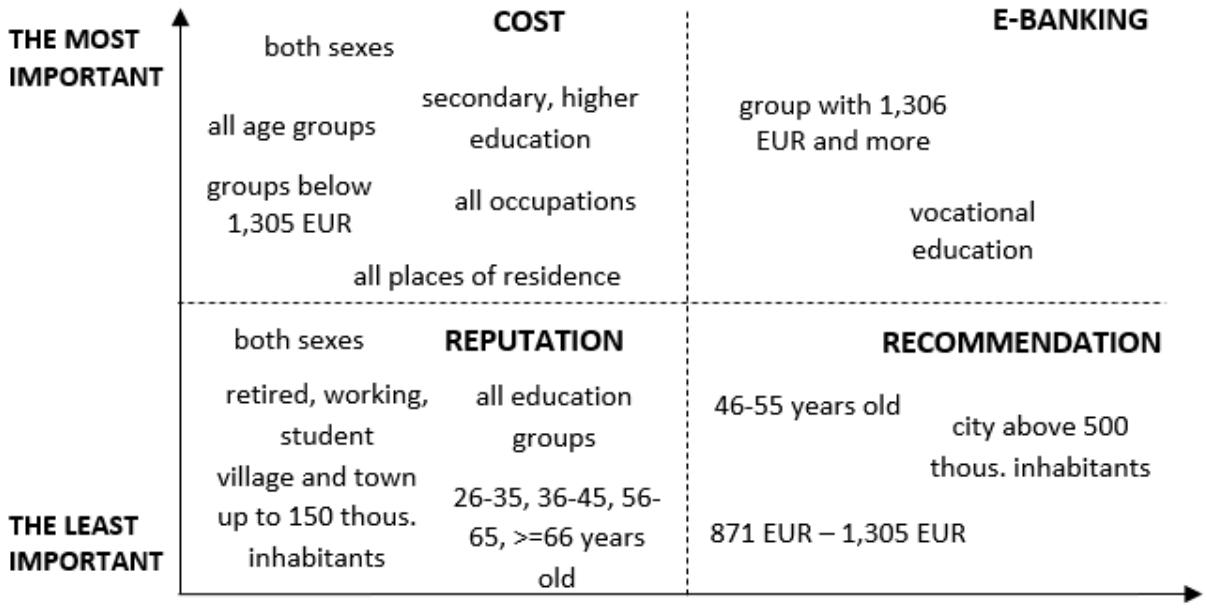


Figure 1. The most and the least important criteria of the bank's choice and demographic factors of the customers

Table 10. Principal components analysis – all respondents

Factor	Eigenvalue	% of total variance	% of cumulative variance	Factor loading
Factor 1	1.515	25.251	25.251	
cost of services				0.736
e-banking				0.765
Factor 2	1.244	20.726	45.977	
reputation				0.679
localisation				-0.815
Factor 3	1.117	18.612	64.589	
brand				-0.742
recommendation				0.763

Note: n=515

Source: own compilation

the total variance. The second component refers to the reputation and localisation of the bank (here we have a negative coefficient). This factor accounts for 20.73 percent of the total variance. The last component correlates with the brand of the bank (negatively) and the recommendations from friends and family. It accounts for 18.61 percent of the total variance. The correlation matrix and communalities were presented in Appendix A.

5. Discussion

The purpose of this research was to verify the influence of demographic factors on retail customers' bank selection criteria in Poland. A set of criteria was developed and then tested on a sample of 515 respondents. Responding to the first research question, the findings revealed that in general, the most important bank selection criterion is the cost of services, which is in line with most current research (Arora & Kaur, 2019; Kreituss et al., 2021). The

cost/price factor is perceived to portray the worth of fair rates of interest on loans and advances, low service charges, and high interest rates on deposits (Kennington et al., 1996). Nowadays, with the change in the course of monetary policy and rapid increase in the level of interest rates, customers seem to pay more attention to the cost of services than in previous years of lower rates (Awan & Shahzad Bukhari, 2011; Narteh & Owusu-Frimpong, 2011; Sayani & Miniaou, 2013; Wei & Lu, 2013). It is also worth noting that with the development of mobile and online banking, localisation of the bank is no longer such an important factor as it was before (Denton & Chan, 1991; Boyd et al., 1994; Thwaites & Vere, 1995; Almossawi, 2001), excluding areas with high scores of financial exclusion (Abbam et al., 2015; Jahiruddin & Haque, 2009). The confirmation of the importance of the cost of services and e-banking was also found in PCA, as the first factor consists of those two components and explains more than 25 percent of total variance.

Considering the second research question, we have found that banks' selection criteria differ between different groups of respondents when considering gender, age, education, occupation, place of residence, and income. These findings are in contradiction to one of the newest studies by Tucker and Jubb (2018), who suggested that bank selection has little to do with demographic factors. However, it seems to be an overstatement as Tucker and Jubb (2018) based their study exclusively on the student population.

The results demonstrated that both males and females choose the bank according to the cost of services and accessibility of easy and friendly mobile and online banking. However, they differ in the case of the brand of the banks and recommendations. Female customers rely more on recommendations and opinions of family and friends rather than the brand of the bank, which is in line with the results of Mohd Suki (2018) and Narteh and Owusu-Frimpong (2011). The recommendation was also a more important factor for young customers than for middle-aged and elder customers. The results are current with the findings of Foscht et al. (2009). The reliance on the opinion of parents and friends may arise from a lack of financial knowledge or from such a prosaic factor as opening an account in the bank before being legal adults (Denton & Chan, 1991).

The education level will also determine the way customers choose their bank. For those with secondary and higher education, the most important factors are the cost of services and e-banking; however, for those with vocational education the main important criteria were localisation of the bank and e-banking. Similar results were presented by Devlin (2002) who proved that those with lower education are more likely to choose a mortgage provider on the basis of branch location. The same was proved for the lower classes (Devlin, 2002). This may lead to the conclusion that those from villages and of low income would also highly appreciate the location of the bank. However, for those groups, the most important factors were the cost of services and e-banking. E-banking was also the most important factor for the richest group of people, who paid less attention to the cost of services. Wealthier customers are not concerned with price while for lower income groups, price is the main concern (Kennington et al., 1996).

6. Managerial implications

When discussing the results, we need to remember the specific geographic context of the research. Poland is a country whose economy is classified as either developed (United Nations, 2022) or emerging and developing (IMF, 2022) and is the part of so-called Eastern Bloc. The level of development of the financial system is average and this market cannot be compared with highly developed ones like the USA or the UK. At the same time, it is hard to compare the East-Central European population with populations from Asia, as the significant differences in culture, history, and religion may influence the results (Blankson et al., 2009; Arora & Kaur, 2019). As was pointed out by Blankson et al. (2007, p. 471), 'consumers in industrialized, newly industrialized and liberalized developing countries employ different and embedded cultural dimensions in the selection of service offerings such as banks'.

The Polish banking sector is a highly innovative part of the economy and might be perceived as well diversified, especially through the presence of 535 cooperative banks and 30 commercial banks (KNF, 2023), which means that there is room for differentiated services and strategies. The only way of gaining a competitive advantage, acquiring new customers, and retaining existing customers is to provide what customers need and what they look for (Sayani & Miniaouri, 2013). As it is harder and harder for banks to compete at the cost level (Hawkins & Mihaljek, 2001) all efforts should be put into the innovativeness and development of mobile and online banking. Makaduza

(2020) and Mbama and Ezepue (2018) proved that digital banking platforms enhance customer satisfaction, employee-customer engagement, and perceived usability, thereby improving customer experience. In the light of profound changes driven by advances in information technology and pressure from Fintech companies (Jakšič & Marinč, 2019; Vives, 2020), easy and friendly e-banking may pose an important competitive advantage that will allow a bank to differentiate in the market and gain significant market share. At the same time, the importance of relationship banking (Jakšič & Marinč, 2019) indicates the significance of demographic factors and the need for customer segmentation as well as diversification of the marketing strategy in the direction of individual approach to the customer.

7. Conclusions and limitations

The research shows the significance of demographic factors in bank selection. The study is based on diversification by gender, age, education, occupation, place of residence, and net income group of 515 respondents. The results proved that there are significant differences between various groups of respondents and the bank selection criteria. The highest number of differences appear in the case of demographic factors of age and then income and gender. In general, the most important factors are the cost of service and easy and friendly mobile and online banking.

This study contributes to the literature in several respects. Firstly, it gives special attention to the demographic factors, whereas in many studies this was neglected or treated as additional analysis (Blankson et al., 2007; Kamakodi & Khan, 2008; Rao & Sharma, 2010); Arora & Kaur, 2019; Butt et al. 2022). Secondly, to the best of our knowledge, this study is one of the very few that refers to a country from East-Central Europe (Kennington et al., 1996; Katircioglu et al., 2011; Kreituss et al., 2021). And thirdly, the results are based on a well-diversified group of respondents, not the widely used one of a very restricted group of students (Thwaites & Vere, 1995; Almossawi, 2001; Blankson et al., 2007; Blankson et al., 2009; Narteh & Owusu-Frimpong, 2011; Rao & Sharma, 2010; Mohd Suki, 2018; Tucker & Jubb, 2018).

Nevertheless, this study poses some limitations. Firstly, the reader should be aware that bank selection criteria were given to the customers and not gathered in the qualitative research via focus groups. As it is the limitation of the study, it is also a great possibility for conducting future research that will combine these two approaches, qualitative and quantitative. Secondly, the limitation might be perceived in a geographical context. It should be clearly understood that the differences in culture, economy, history, and legal matters make it extremely difficult to compare the results with other studies. As there are not many studies conducted on populations from East-Central Europe there is also a great need for future research in countries from that region. We would also recommend that future research should focus on exploring the leading factors prompting customers to switch to other banks and thereby shift to the competitors.

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References

Abbam, A., Dadson, I., & Say, J. (2015). An empirical analysis of customer choice of banks in Ghana. *European Journal of Business & Management*, 7(12), 49-55.

Abdi, H., & Williams, L. J. (2010). Principal component analysis. *Wiley Interdisciplinary Reviews: Computational Statistics*, 2(4), 433-459. https://doi.org/10.1002/wics.101

Al-Ajmi, J., Abo Hussain, H., & Al-Saleh, N. (2009). Clients of conventional and Islamic banks in Bahrain: How they choose which bank to patronize. *International Journal of Social Economics*, 36(11), 1086-1112. https://doi.org/10.1108/03068290910992642

Almossawi, M. (2001). Bank selection criteria employed by college students in Bahrain: an empirical analysis. *International Journal of Bank Marketing*, 19(3), 115-125. http://dx.doi.org/10.1108/02652320110388540

Amin, H. (2008). Choice criteria for Islamic home financing: Empirical investigation among Malaysian bank customers. *International Journal of Housing Markets & Analysis*, 1(3), 256-274. https://doi.org/10.1108/17538270810895105

Amin, H. (2013). Factors influencing Malaysian bank customers to choose Islamic credit cards: Empirical evidence from the TRA model. *Journal of Islamic Marketing*, 4(3), 245-263. https://doi.org/10.1108/JIMA-02-2012-0013

An, J., Kwak, H., Jung, S. G., Salminen, J., & Jansen, B. J. (2018). Customer segmentation using online platforms: isolating behavioral and demographic segments for persona creation via aggregated user data. *Social Network Analysis & Mining*, 8(54), 1-19. https://doi.org/10.1007/s13278-018-0531-0

Anderson Jr, W. T., Cox III, E. P., & Fulcher, D. G. (1976). Bank Selection Decisions & Market Segmentation: Determinant attribute analysis reveals convenience and service-oriented bank customers. *Journal of Marketing*, 40(1), 40-45. https://doi.org/10.1177/002224297604000107

Arora, S., & Kaur, H. (2019). Exploring the bank selection criteria in India: scale development and validation. *International Journal of Bank Marketing*, 37(3), 666-690. https://doi.org/10.1108/IJBM-09-2017-0199

Awan, H. M., & Shahzad Bukhari, K. (2011). Customer's criteria for selecting an Islamic bank: evidence from Pakistan. *Journal of Islamic Marketing*, 2(1), 14-27. https://doi.org/10.1108/17590831111115213

Blankson, C., Ming-Sung Cheng, J., & Spears, N. (2007). Determinants of banks selection in USA, Taiwan and Ghana. *International Journal of Bank Marketing*, 25(7), 469-489. https://doi.org/10.1108/02652320710832621

Blankson, C., Omar, O. E., & Cheng, J. M. S. (2009). Retail bank selection in developed and developing countries: A cross-national study of students' bank-selection criteria. *Thunderbird International Business Review*, 51(2), 183-198. https://doi.org/10.1002/tie.20257

Boyd, W.L., Leonard, M., & White, C. (1994). Customer Preferences for Financial Services: An Analysis. *International Journal of Bank Marketing*, 12(1), 9-15. https://doi.org/10.1108/02652329410049562

Butt, I., Ul-Haq, S., Shareef, M. A., Chowdhury, A. H., & Ahmed, J. U. (2022). Ethical reputation and retail bank selection: a sequential exploratory mixed-methods study in an emerging economy. *International Journal of Bank Marketing*, 40(7), 1526-1554. https://doi.org/10.1108/IJBM-03-2021-0104

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical assessment, research, and evaluation*, 10(7), 1-9. https://doi.org/10.7275/jyj1-4868

Denton, L., & Chan, A. K. K. (1991). Bank Selection Criteria of Multiple Bank Users in Hong Kong. *International Journal of Bank Marketing*, 9(5), 23-34. https://doi.org/10.1108/02652329110007129

Devlin, J. F., & Gerrard, P. (2005). A study of customer choice criteria for multiple bank users. *Journal of Retailing and Consumer Services*, 12(4), 297-306. https://doi.org/10.1016/j.jretconser.2004.10.004

Devlin, J. F., & Gerrard, P. (2004). Choice criteria in retail banking: an analysis of trends. *Journal of Strategic Marketing*, 12(1), 13-27. https://doi.org/10.1080/0965254032000171882

Devlin, J. F. (2002). An analysis of choice criteria in the home loans market. *International Journal of Bank Marketing*, 20(5), 212-226. https://doi.org/10.1108/02652320210437661

Echchabi, A., & Nafiu Olaniyi, O. (2012). Malaysian consumers' preferences for Islamic banking attributes. *International Journal of Social Economics,* 39(11), 859-874. https://doi.org/10.1108/03068291211263907

Edris, T. A. (1997). Services considered important to business customers and determinants of bank selection in Kuwait: a segmentation analysis. *International Journal of Bank Marketing*, 15(4), 126-133. https://doi.org/10.1108/02652329710189393

Foscht, T., Schloffer, J., Maloles, C., & Chia, S.L. (2009). Assessing the outcomes of Generation-Y customers' loyalty. *International Journal of Bank Marketing*, 27(3), 218-241. https://doi.org/10.1108/02652320910950204

Hassani, H., Huang, X., & Silva, E. (2018). Banking with blockchained big data. *Journal of Management Analytics,* 5(4), 256-275. https://doi.org/10.1080/23270012.2018.1528900

Hawkins, J., & Mihaljek, D. (2001). The banking industry in the emerging market economies: competition, consolidation and systemic stability: an overview. *BIS papers*, 4(4), 1-44.

IMF. (2022). *World Economic Outlook. Countering the Cost-Of-Living Crisis.* Washington, DC. October.

Jahiruddin, A. T. M., & Haque, R. (2009). Bank selection criteria of retail customers in Bangladesh: A study on Khulna City. *Journal of Business & Management*, 15(2), 159-169.

Jakšič, M., & Marinč, M. (2019). Relationship banking and information technology: The role of artificial intelligence and FinTech. *Risk Management*, 21, 1-18. https://doi.org/10.1057/s41283-018-0039-y

Javalgi, R. G., Armacost, R. L., & Hosseini, J. C. (1989). Using the analytic hierarchy process for bank management: Analysis of consumer bank selection decisions. *Journal of Business Research*, 19(1), 33-49. https://doi.org/10.1016/0148-2963(89)90039-8

Kamakodi, N., & Khan, B. A. (2008). An insight into factors influencing bank selection decisions of Indian customers. *Asia Pacific Business Review*, 4(1), 17-26. https://doi.org/10.1177/097324700800400102

Katircioglu, S. T., Tumer, M., & Kilinc, C. (2011). Bank selection criteria in the banking industry: An empirical investigation from customers in Romanian cities. *African Journal of Business Management*, 5(14), 5551-5558. https://academicjournals.org/journal/AJBM/article-full-text-pdf/7FA9A4922988

Kennington, C., Hill, J., & Rakowska, A. (1996). Consumer selection criteria for banks in Poland. *International Journal of Bank Marketing*, 14(4), 12-21. https://doi.org/10.1108/02652329610119283

KNF. (2023). *Entities in the banking sector.* Access: https://www.knf.gov.pl/en/ENTITIES (23.03.2023)

Kreituss, I., Vasiljeva, T., & Rokjane, B. (2021). Factors important for banks in attracting and retaining customers. In *Reliability and Statistics in Transportation and Communication: Selected Papers from the 20th International Conference on Reliability and Statistics in Transportation and Communication, RelStat2020, 14-17 October 2020, Riga, Latvia* (691-702). Springer International Publishing.

Kumar, M., Talib, S. A., & Ramayah, T. (2013). *Business Research Methods*. Oxford University Press, Selangor.

Lee, J., & Marlowe, J. (2003). How consumers choose a financial institution: decision-making criteria and heuristics. *International Journal of Bank Marketing*, 21(2), 53-71. https://doi.org/10.1108/02652320310461447

Lymperopoulos, C., Chaniotakis, I. E., & Soureli, M. (2006). The importance of service quality in bank selection for mortgage loans. *Managing Service Quality: An International Journal*, 16(4), 365-379. https://doi.org/10.1108/09604520610675702

Makudza, F. (2021). Augmenting customer loyalty through customer experience management in the banking industry. *Journal of Asian Business and Economic Studies*, 28(3), 191-203. https://doi.org/10.1108/JABES-01-2020-0007

Mansour, W., Ben Abdelhamid, M., Masood, O., & Niazi, G. S. K. (2010). Islamic banking and customers' preferences: The case of the UK. *Qualitative Research in Financial Markets,* 2(3), 185-199. https://doi.org/10.1108/17554171011091746

Martenson, R. (1985). Consumer Choice Criteria in Retail Bank Selection. *International Journal of Bank Marketing*, 3(2), 64-74. https://doi.org/10.1108/eb010755

Mbama, C. I., & Ezepue, P. O. (2018). Digital banking, customer experience and bank financial performance: UK customers' perceptions. *International Journal of Bank Marketing*, 36(2), 230-255. https://doi.org/10.1108/IJBM-11-2016-0181

Mohd Suki, N. (2018). Criteria for choosing banking services: gender differences in the university students' perspective. *International Journal of Social Economics*, 45(2), 300-315. https://doi.org/10.1108/IJSE-12-2016-0354

Narteh, B., & Braimah, M. (2020). Corporate reputation and retail bank selection: the moderating role of brand image. *International Journal of Retail & Distribution Management*, 48(2), 109-127. https://doi.org/10.1108/IJRDM-08-2017-0164

Narteh, B., & Owusu-Frimpong, N. (2011). An analysis of students' knowledge and choice criteria in retail bank selection in sub-Saharan Africa: The case of Ghana. *International Journal of Bank Marketing*, 29(5), 373-397. https://doi.org/10.1108/02652321111152909

Phuong Ta, H., & Yin Har, K. (2000). A study of bank selection decisions in Singapore using the Analytical Hierarchy Process. *International Journal of Bank Marketing*, 18(4), 170-180. https://doi.org/10.1108/02652320010349058

Rao, S., & Sharma, D. R. (2010). Bank selection criteria employed by MBA students in Delhi: An empirical analysis. *Journal of Business Studies Quarterly*, 1(2), 56-69. http://dx.doi.org/10.2139/ssrn.1597902

Romānova, I., & Kudinska, M. (2016). Banking and Fintech: A Challenge or Opportunity? *Contemporary Issues in Finance: Current Challenges from Across Europe (Contemporary Studies in Economic & Financial Analysis, Vol. 98)*, Emerald Group Publishing Limited, Bingley, 21-35. https://doi.org/10.1108/S1569-375920160000098002

Saleh, M. S., Rosman, M. R. M., & Nani, N. K. (2013). Bank selection criteria in a customers' perspective. *Journal of Business & Management*, 7(6), 15-20.

Sayani, H., & Miniaoui, H. (2013). Determinants of bank selection in the United Arab Emirates. *International Journal of Bank Marketing*, 31(3), 206-228. https://doi.org/10.1108/02652321311315302

Thwaites, D., & Vere, L. (1995). Bank selection criteria—a student perspective. *Journal of Marketing Management*, 11(1-3), 133-149. https://doi.org/10.1080/0267257X.1995.9964334

Tucker, M., & Jubb, C. (2018). Bank and product selection – an Australian student perspective. *International Journal of Bank Marketing*, 36(1), 126-146. https://doi.org/10.1108/IJBM-10-2016-0151

United Nations. (2022). *World economic situation and prospects. Statistical Annex.* Access *https://desapublications.un.org/file/728/download* (23.03.2023)

Vives, X. (2020). Digital disruption in banking and its impact on competition. *Organisation for Economic Co-operation & Development (OECD).*

Wei, S., & Lu, J. (2013). Determinants of Swedish bank selection choices by international students. Thesis. University of Gävle.

Appendix A

Correlation Matrix							
		brand	**reputation**	**recommendation**	**cost**	**localisation**	**e-banking**
Correlation	brand	1.000	0.018	-0.147	-0.117	-0.0133	-0.147
	reputation	0.018	1.000	-0.020	-0.068	-0.183	-0.177
	recommendation	-0.147	-0.020	1.000	-0.220	-0.075	-0.166
	cost	-0.117	-0.068	-0.220	1.000	-0.189	0.239
	localisation	-0.133	-0.183	-0.075	-0.189	1.000	-0.194
	e-banking	-0.147	-0.177	-0.166	0.239	-0.194	1.000
Sig. (1-tailed)	brand		0.342	<0.001	0.004	0.001	<0.001
	reputation	0.342		0.327	0.061	0.000	0.000
	recommendation	0.000	0.327		0.000	0.045	0.000
	cost	0.004	0.061	0.000		0.000	0.000
	localisation	0.001	0.000	0.045	0.000		0.000
	e-banking	0.000	0.000	0.000	0.000	0.000	

Communalities		
	Initial	**Extraction**
brand	1.000	0.688
reputation	1.000	0.527
recommendation	1.000	0.740
cost	1.000	0.550
localisation	1.000	0.775
e-banking	1.000	0.595