

INDIVIDUAL AND BANK  
CHARACTERISTICS THAT IMPACT  
AN INDIVIDUAL'S DEMAND FOR  
SERVICES

by

Aleksyeyenko Alina

A thesis submitted in partial fulfillment of  
the requirements for the degree of

MA in Economics

Kyiv School of Economics

2010

Thesis Supervisor: \_\_\_\_\_ Professor Vakhitova Hanna

Approved by \_\_\_\_\_  
Head of the KSE Defense Committee, Professor Roy Gardner

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

Kyiv School of Economics

Abstract

INDIVIDUAL AND BANK  
CHARACTERISTICS THAT  
IMPACT AN INDIVIDUAL'S  
DEMAND FOR SERVICES

by Aleksyeyenko Alina

Thesis Supervisor:

Professor Vakhitova Hanna

Investigation of factors that may impact a customers' choice of bank shows that such factors vary from service to service. Besides, factors that influence a choice of a bank can be insignificant for a choice of a bank service and vice versa. This study utilizes data from GfK Survey that combines customers' preferences concerning bank services in 2005 and 2006. Overall, results indicate that choice of a service depends mostly on such socio-demographic variables as age, income and education level and place of living. Bank characteristics affecting the choice of services vary for different services. Thus, banks aiming to promote certain service should pursue more precise targeting of particular groups.

## TABLE OF CONTENTS

Chapter 1. Introduction .....	1
Chapter 2. Literature review .....	4
Chapter 3. Model and methodology .....	8
Chapter 4. Data .....	10
Chapter 5. Empirical results .....	16
Chapter 6. Conclusion .....	21
Works cited .....	23
Appendix A. Geography of questionnaire .....	25
Appendix B. Descriptive statistics for bank characteristics .....	26
Appendix C. Empirical results .....	27

## LIST OF TABLES

<i>Number</i>	<i>Page</i>
TABLE 1. Share of people who use current services.....	11
TABLE 2. Share of respondents who use bank services and are served by a bank.....	11
TABLE 3. Descriptive statistics for bank characteristics.....	12
TABLE 4. Distribution of respondents by region.....	13
TABLE 5. Distribution of respondents by age.....	14
TABLE 6. Distribution of respondents by income level .....	14
TABLE 7. Distribution of respondents by education .....	15
TABLE 8. Significant results for “payments” and “current account” services...	17
TABLE A1. Geography of questionnaire.....	25
TABLE B1. Descriptive statistics for bank characteristics.....	26
TABLE C1. Empirical results.....	27

## ACKNOWLEDGMENTS

I would like to express my sincere gratitude to Professor Hanna Vakhitova for her supervision and guidance.

## *Chapter 1*

### INTRODUCTION

Since the crisis began, a lot of companies worry about the diminishing demand for their products (Lee et al., 2009) and, as a consequence, about falling revenues. For example, in 2009 Ukrainian biggest banks have large losses. According to *Correspondent* in 2009, PrivatBank's net income decreased by 19%; Ukrsocbank declined by 84%. Therefore, nowadays all companies should think more about the factors that compel people to pay for some good or service. This topic can be developed for each field of business. This paper is focusing on banks given their crucial role in transition economies (Hainz, 2003).

Factors that influence a choice of a bank service are grouped into two large categories, i.e. individual and bank characteristics. If bank characteristics play more important role for the choice of a service, it is possible to increase the demand for services by investing into bank services quality. If individual characteristics are more important in explaining a structure of the demand for a service, bank should invest into more targeted marketing strategy. So, the goal of this research is to investigate whether consumers' characteristics, such as education, age, place of living and income level, and bank characteristics, such as diversity of services, bank's reliability, size of bank's fee, proximity to place of living or work, number of branches, speed and quality of services, privacy policy, ownership, working hours, size, etc. explain consumer's choice of a bank service.

The paper has both academic and practical merit. From the point of view of academic significance, it emphasizes the need of considering the demand as an outcome of joint decisions, i.e. controls for factors that characterize both customers and sellers. Other papers consider these elements separately. In

particular, Ardic and Yuzereroglu (2007) show that bank size and the form of ownership (such as private, public, or foreign) have impact on a choice of a bank. Seshaiyah & Narender (2007) and Ezirim (2005) have looked at the importance of the overall quality of banking for customers' choice of a bank. They found that people choose a bank based on such characteristics as safety of deposits, size and strength, accuracy, general service quality, speed of delivery, proximity, security of environment, cordiality of staff, price and service charges, product packaging, general public impression, peer group impression, face lift, friendship with staff, advertisement and publicity. Hui (2004) confirms that company's performance indeed influences consumer preferences. He has observed that higher product variety of a firm has a decreasing return because products of one firm are considered as substitutes. At the same time wide product line helps to build a long-term brand reputation. We investigate this issue for a bank industry.

However, banks offer very heterogeneous services. This heterogeneity means independence between pricing of one service and supplied quality of another service within the same bank (Shy, 1996). That is why it is necessary to consider whether Hui's (2004) results can be applied for bank sector. While characteristics of the bank are definitely important, clients do not buy a seller, they buy a good or a service. We argue that in first turn customers choose a product. The closest bank may not be the most secure for those who need to open deposit. But such bank is the most convenient for those who regularly make some payments at a bank.

Another example of separate investigation of the factors that influence a customers' choice is the analysis of horizontal and vertical product differentiation that has been discussed by Martin (2002). He shows the product characteristics influence a customer's choice of a good or a service. Importance of demographic variables has been revealed by Cortez & Senauer (1996) for food products. Since

demand varies for different demographic groups it has been decided to include such variables into model for bank services and test explicitly whether they matter.

From the practical point of view, the idea developed in this research could be applied to improve bank performance and help managers get better understanding on how to raise profitability. Knowing which characteristics influence the customers' choice of each service, managers of banks can determine the most important directions for improvement. Such improvement increases the quality of the most wide-spread services and, consequently, bank performance (Krishnan et al., 1999).

The rest of the paper proceeds as follows. Section 2 presents literature review that discusses different approaches to the choice of a bank or a service. Logit model is considered in Section 3. Section 4 describes the data. Results are shown in Section 5. And the last section concludes.

## *Chapter 2*

### LITERATURE REVIEW

Consumers' behavior varies. It can be different even for the same customer in different periods of time; it varies with fashion, tastes, environment, etc. And reasons why people change their behavior are not the same for various fields of activities as has been mentioned by Pessemier & Handelsman (1984). They show that some people may have "ideal" product or brand in mind, while other may not. On the one hand, it is difficult to analyze drivers that push people to make a decision. On the other hand, there is a variety of motives that differs from a sector to a sector. That is why recognition of variety-seeking motives is very important for modeling. The current research investigates motives that push people to choose one or another bank service.

The structure of literature review is the following. First, it discusses the existing studies in the area of customers' choice of a bank. Particularly, we describe what directions have been covered, the main results and shortcomings. Then we glance at the researches that address the same issue in other fields. It is important to understand whether there are the same difficulties in different business areas and what the proposed solutions are. After that, there is a literature that covers the theoretical model, employed methodology, and the estimation procedure.

The current problem can be considered from different angles. An extensive body of literature concentrates on a choice of a services' provider. Examples of such works mostly come from management and business fields. For instance, Krishnan et al. (1999) have analyzed the drivers of the total customer satisfaction with a bank. The list includes the variety of services, the existence of different channels of service delivery, service design factors and others. Knowledge of the

most important drivers helps to develop good questionnaire for data gathering because according to such information it has been found that such bank characteristics as speed of services or staff competence are most valuable for customers. Seshaiyah & Narender (2007) have showed that customers' attitude to a bank is the least important factor determining the choice of a bank.

Besides, existing literature does not analyze the influence of individual characteristics on decision making process. The importance of this criterion in the model has been analyzed by Kadushin (2006) and Malkina & Ivanova (2007). They found that when choosing a bank a customer takes into consideration reputation of the bank and personal level of trust to this bank. The last factor depends on the education level, riskiness, income and age of customers. The empirical evidence confirms that more educated people are more likely to trust banks. Thus, demographical characteristics are important determinants of the choice. Similar results but for demand on food, tobacco, health, transport, and leisure have been shown by Molina & Gil (2005). For the bank sector it is assumed that education as well as age has positive influence on a customer's choice of a service. It means that elder and more educated people use bank services more often. Region of living differentiates the average income level. It is supposed that people from the richer regions such as Kyiv or East region use bank services more frequently. As for bank characteristics, it is assumed that different factors will matter for different services. If factors that influence a customers' choice of a bank service are the same for different services, then clients, in first turn, choose a bank. Otherwise, choice of a bank follows choice of a service.

Problem of customer's behavior is discussed in papers on choice of a brand and choice of a product under brand influence. Here we can treat bank as a brand and bank services can be considered as products. So, there are two directions of

choices analyses. The first one is choice of a brand. Example of such research is a paper of Baltas et al. (1997). They consider price, brand awareness and previous purchase experience as determinant variables. Dependent variable is a probability that customers choose the current brand. According to their model, customers who use branded products on regular basis are more likely to switch to another brand rather than to a private-label alternative in case of increased price. Raju et al. (1994) show how different marketing strategies influence a brand choice. So, investigations of a brand choice help to understand what companies' actions compel people to choose a specific brand. The second stream of literature considers the choice of products under brand influence. In particular, Hui (2004) analyzes factors that may influence consumer preferences for personal computers. He underlines that products of one brand are considered as similar goods, and customers do not distinguish them. Consequently, some products can substitute other products of the same company. This research has been made for PC market. Still, due to different variety-seeking motives results for different fields of business may differ. That is why it is important to analyze joint influence of brands and products variety on customers' decision making process. Current paper takes into consideration these results and applies them to banking.

Analysis of characteristics that influence a choice of bank services is grounded on choice model. Choice model is usually written as

$$U_{ij} = X_{ij} + e_{ij}, \quad (1)$$

where  $U_{ij}$  shows the utility for  $i^{th}$  individual from consumption of  $j^{th}$  good;  $X_{ij}$  is a deterministic component, and  $e_{ij}$  is a random one. Based on individual indicators, choice model provides an approximation of aggregate-choice probabilities. Properties of this model are discussed by Steckel & Vanhonacker

(1988). The most important properties are heterogeneity and independence of irrelevant alternatives.

Binomial logit model has been chosen for this research. This choice is grounded on papers that forecast behavior of customers in different fields (see, for example, the study of Guadagni and Little's (1983) about coffee purchases, paper by Jimenez & Salas-Velasco (2000) on the demand for higher education, Train's (1986) on transportation-mode choice). The results of such estimation help to analyze the influence of explanatory variables on the probability of choosing a current bank service. They show how demographic characteristics and banks' peculiarities influence a customer's choice of a bank product.

So, overview of literature shows the existence of two directions in which other authors investigate the problem of consumer choice, choice of a brand and choice of a product. In banking just first direction has been researched. It means that current paper takes into account some shortcomings of previous studies as well as develops a direction of customer choice of a product in the bank sphere.

### Chapter 3

#### MODEL AND METHODOLOGY

There are a lot of factors which influence a customers' choice of a product. These factors can be individual specific, such as age, education, income level, or common, such as reliability of a seller, proximity to home or work, etc.

Output is the probability of using the determined service. It can be 0, if a customer does not use it or 1 if a customer uses it. Since this paper discusses just two main for Ukrainians services, all considered banks provide these services.

So, the model can be represented:

$$y_{pi} = \frac{e^{\beta_0 + \sum_{j=1}^n (\beta_j x_{ji} + \alpha_j r_{ji} + \phi x_{ji} r_{ji}) + \sum_{r=1}^m \gamma_r k_{ri} + \varepsilon_i}}{1 + e^{\beta_0 + \sum_{j=1}^n (\beta_j x_{ji} + \alpha_j r_{ji} + \phi x_{ji} r_{ji}) + \sum_{r=1}^m \gamma_r k_{ri} + \varepsilon_i}}, \quad (2)$$

where  $y_{pi}$  is probability of usage of the  $p^{th}$  service for customer  $i$ ;  $x_{ji}$  is the importance of the  $j^{th}$  characteristic of a bank for the  $i$ th customer;  $r_{ji}$  shows whether main bank of a customer represents  $j^{th}$  bank characteristic (hereinafter referred to as correspondence of  $j^{th}$  characteristic);  $k_{ri}$  is a dummy variable that represents such individual characteristics as age, income and education level, region of residence.

Parameter  $\beta_j$ ,  $j = \overline{1, n}$  shows whether importance of  $j^{th}$  bank characteristic drives customers to use observed bank service. If  $\beta_j$  is positive then people for

whom  $j^{th}$  characteristic is important are more likely to use the  $p^{th}$  service. Since banks differ by their characteristics, model includes parameter  $\alpha_j$  that shows the influence of characteristics' presence in a bank on choice of a service. If  $\alpha_j > 0$  then banks that represent the  $j^{th}$  characteristic will have larger demand on  $p^{th}$  service. Joint influence of two above variables is described by parameter  $\varphi_j$ . Positive sign of  $\varphi_j$  ( $\varphi_j > 0$ ) means that if  $j^{th}$  characteristic exists in a bank and this characteristic is important to a customer then such individual is more likely to use  $p^{th}$  service. Parameter  $\gamma_r$  corresponds to demographical data. If person belongs to  $r^{th}$  category, she is more likely to use  $p^{th}$  service.

Numerical interpretation of parameters can be described as following. Increase in  $\beta_i$  by 1 unit raises  $y_{ip}$  by  $(e^{\beta_i} - 1)$  per cent. It means that a bank which wants to direct its opportunities for some service development should pay attention to the characteristics that have the largest weight in the customers' choice. According to this model it is possible to forecast the probability of use of a certain service at the current bank ( $y_p$ ) given a certain level of characteristics ( $x_j$ ). As for academic application, it is possible to analyze whether characteristics that influence a choice of a bank and choice of a certain bank service are the same. If they are the same then products within one bank brand should be considered as a single offer.

The model can be estimated by logit because  $y_i \in [0,1]$ . This model is chosen due to binary responses of respondents. Besides, effect of each input factor on output in such model is not constant. It means that each further increase in  $x$ 's by 1 unit causes the less increase in  $y_p$ .

## *Chapter 4*

### DATA

This study uses two waves of the survey conducted among bank customers in 2005 and 2006 by GfK Ukraine<sup>1</sup>. Interviewees in two waves are not the same. Data set includes 1621 interviews from different Ukrainian cities in all regions. The data has been collected by face-to-face interviews. The shares of males and females as well as their place of residency are the same as in the Ukrainian population aged 25 – 55 (see Appendix A).

Paper estimates the probability of usage of more than 1 service to compare results. It is necessary to know whether factors that impact a choice of a bank service are the same for different services. That is why it has been decided to take top-2 most popular services, which are payments execution and using a current account (see Table 1).

According to Table 2 a half of customers uses only one bank service. In fact, it is possible that one person uses different banks for the same service. If share of such observations is large, then estimated results can be less accurate, because model considers only one bank as main and it can be difficult for a person who uses the same service at different banks to choose the main bank. Fortunately, only 8.6% and 2.5% of all respondents use several banks for the services “Payments” and “Current account”.

---

<sup>1</sup> GfK Ukraine is the largest market research company in Ukraine, member of the worldwide GfK Group – one of the largest market research companies in the world.

TABLE 1. Share of people who use current services.

Service	Freq. of positive answer	Percent
Payments execution (especially communal)	1335	82.36
Current account (for pension, scholarship)	1036	63.91
Plastic card	947	58.42
Credit for buying of commodities	313	19.31
Currency exchange	286	17.64
Money transmission	218	13.45
Deposit account	100	6.17
Credit for other goods	49	3.02
Credit for buying of a car	36	2.22
Current account of plastic card	16	0.99
Credit for mortgage	14	0.86
Mobile banking	11	0.68
Rent of lock box	4	0.25
Travel checks	2	0.12
Internet-banking	2	0.12
Do not use bank services	2	0.12
Buying and selling of stocks	1	0.06
Buying and selling of bank metals	0	0.00

TABLE 2. Share of respondents who use bank services and are served by a bank.

Alternatives	% of respondents
Use 1 service	50.40
Use 2 services	17.19
Use 3 services	20.37
Use more than 3 services	12.05
Served by 1 bank	67.95
Served by 2 banks	7.30
Served by more than 2 banks	1.25
Do not use banks	23.50

Table 2 shows that 68% of all respondents are served by one bank. But there are still 23.5% of interviewed people who do not use any bank at all. They may use non-bank institution or did not answer this question. The survey lists 13 bank characteristics without in-between correlation (see Table 3).

TABLE 3. Descriptive statistics for bank characteristics

Name of group	Variable	Mean	Std. Dev.	Min	Max
Importance	Bank proposes a lot of services	4.423	0.773	1	5
	Bank is reliable	4.591	0.649	1	5
	Charges for services are small	4.540	0.686	1	5
	Bank is close to home	4.300	0.850	1	5
	Bank is close to work	4.146	0.998	1	5
	Bank has a lot of branches	4.333	0.849	1	5
	Services are quick	4.576	0.634	1	5
	Bank keeps privacy	4.519	0.696	1	5
	Bank is Ukrainian	4.044	1.129	1	5
	Schedule is comfortable	4.467	0.718	1	5
	Bank has a lot of clients	4.162	0.961	1	5
	Bank is honest with a client	4.574	0.645	1	5
	Bank is quick-growing	4.403	0.745	1	5
Correspondence	Bank proposes a lot of services	4.213	0.764	1	5
	Bank is reliable	4.188	0.795	1	5
	Charges for services are small	3.943	0.908	1	5
	Bank is close to home	3.886	1.039	1	5
	Bank is close to work	3.748	1.145	1	5
	Bank has a lot of branches	4.080	0.881	1	5
	Services are quick	4.103	0.861	1	5
	Bank keeps privacy	4.216	0.783	1	5
	Bank is Ukrainian	4.264	0.910	1	5
	Schedule is comfortable	4.147	0.799	1	5
	Bank has a lot of clients	4.189	0.792	1	5
	Bank is honest with a client	4.159	0.796	1	5
	Bank is quick-growing	4.125	0.822	1	5

Interviewees should determine for each factor whether each considered bank characteristic is important for them and whether their main bank represents this characteristic. So, these observations can be considered as two large groups, importance and correspondence of a factor. Each group consists of 13 characteristics. Each category has been evaluated with 5-score grades where one is the least value and five is the largest value.

Since values of bank characteristics are integers, they should be included in the logit model as dummy variables. For simplification value of each factor has been replaced by 0 (in case when it is less or equal to 3) or 1 (in case when it is more than 3). Such decision has been taken according results represented in Appendix B. Other methods of values combination give insignificant results in model estimation.

Demographical data includes age, education, income level and place of living.

Information about the region is represented by 5 dummy variables, “center”, “south”, “west”, “north” and “Kyiv\_city”. Variable “east” is the base category, since its share in the sample is the largest (see Table 4).

TABLE 4. Distribution of respondents by region.

Region	Freq.	Percent
Center	109	6,72
East	726	44,79
South	351	21,65
West	192	11,84
North	96	5,92
Kyiv	147	9,07
Total	1621	100,00

Age is observed as one of three groups, from 25 to 35, from 35 to 45, from 45 to 55. The 3<sup>rd</sup> group serves as a base (see Table 5).

TABLE 5. Distribution of respondents by age.

Age	Freq.	Percent
25-35	578	35.66
35-45	513	31.65
45-55	530	32.70
Total	1,621	100.00

Income level is described within 10 groups, the first 9 of which show different borders of income and the last one corresponds to the refuse from the answer. The 10<sup>th</sup> group is a base (see Table 6).

TABLE 6. Distribution of respondents by income level.

Range, UAH	Freq.	Percent
0 - 500	79	4.87
501 - 1000	341	21.04
1001 - 1500	304	18.75
1501 - 2000	279	17.21
2001 - 2500	116	7.16
2501 - 3000	63	3.89
3001 - 3500	23	1.42
3501 - 4000	23	1.42
More than 4001	25	1.54
No answer	368	22.70
Total	1621	100.00

Education is represented by 4 groups. There are people with secondary education, technical school, specialized school, and high education. People with high education are the base (see Table 7).

TABLE 7. Distribution of respondents by education.

Education	Freq.	Percent
Secondary	54	3,33
Technical school	344	21,22
Special school	499	30,78
High	724	44,66
Total	1621	100,00

Interviewees are the clients of 33 banks.

## *Chapter 5*

### EMPIRICAL RESULTS

Parameters of two equations have been estimated. The first regression is for “payments” service, and the second one is for “current account” service. Significant results are shown in Table 8. All results are presented in Appendix C.

Table 8 is constructed in such way that column “Payments” shows results for regression that represents service “payments”. Parameters that show influence of individual characteristics are in one column. Impact of bank characteristics is represented by three columns. Column “Importance” shows how probability of client’s demand for “payments” changes if this characteristic is important for her. Column “Correspondence” notifies about change in probability for demand if a client’s bank represents a current characteristic. Column “Cross” shows the influence of a fact that a current characteristic is represented by a bank and simultaneously is important for a client on the probability of demand for “payments”. The structure of column “Current Account” is the same. The only difference is that it corresponds to “current account” service.

It is possible to conclude from Table 8 that influence of the same bank characteristics may differ for demand of different services. It means that different services cannot be considered only as the same brand. So, it is necessary to estimate the probability that they will be chosen by customers separately.

All demographical categories of characteristics impact a customers’ choice of bank services but this influence varies. For instance, education has no influence on demand for “payments”, since less educated people are less likely to use “current account” service.

TABLE 8. Significant results for “payments” and “current account” services<sup>2</sup>

Type	Variable	Payments	Current Account
Individual characteristics	Education (technical school)	0.226	<b>-0.570</b>
		(0.182)	(0.140)**
	Education (specialized school)	0.076	<b>-0.423</b>
		(0.151)	(0.125)**
	Age (25 - 35)	-0.308	<b>0.278</b>
		(0.158)	(0.127)*
	Region (Center)	0.491	<b>0.785</b>
		(0.275)	(0.257)**
	Region (South)	<b>0.534</b>	<b>-0.830</b>
		(0.180)**	(0.138)**
	Region (Kyiv)	0.137	<b>-0.640</b>
		(0.233)	(0.179)**
	Income (UAH, 1001 - 1500)	<b>-0.458</b>	<b>0.486</b>
		(0.198)*	(0.165)**
	Income (UAH, 1501 - 2000)	<b>-0.754</b>	<b>0.460</b>
		(0.197)**	(0.168)**
Income (UAH, 3501 - 4000)	-0.060	<b>-1.303</b>	
	(0.586)	(0.452)**	

<sup>2</sup> Only significant variables are presented

TABLE 8. Significant results for “payments” and “current account” services  
(Cont.)

Type	Variable	Payments			Current Account		
		Importance	Correspondence	Cross	Importance	Correspondence	Cross
Bank characteristics	Bank is reliable	-0.172 (0.208)	0.114 (0.328)	-0.548 (0.364)	<b>0.456</b> (0.161)**	0.227 (0.240)	-0.156 (0.278)
	Bank is close to home	-0.094 (0.199)	<b>0.732</b> (0.291)*	-0.401 (0.354)	-0.135 (0.165)	-0.323 (0.212)	0.089 (0.266)
	Bank is close to work	-0.319 (0.194)	-0.398 (0.264)	0.430 (0.328)	<b>-0.542</b> (0.155)**	0.164 (0.222)	0.250 (0.277)
	Bank has a lot of clients	0.173 (0.214)	<b>0.527</b> (0.246)*	-0.549 (0.317)	0.174 (0.170)	0.066 (0.197)	-0.193 (0.254)
	Bank is honest with a client	-0.398 (0.208)	<b>-0.886</b> (0.321)**	<b>1.047</b> (0.363)**	0.222 (0.167)	-0.425 (0.281)	-0.016 (0.313)
	Bank is quick-growing	-0.086 (0.215)	<b>-0.740</b> (0.274)**	0.236 (0.336)	<b>-0.385</b> (0.172)*	0.247 (0.242)	0.429 (0.290)
	Constant	<b>1.734</b> (0.259)**			<b>0.498</b> (0.217)*		
	Observations	1621			1621		

Standard errors in parentheses

\* significant at 5%; \*\* significant at 1%

Comparing these results with study of Malkina & Ivanova (2007), it is possible to conclude that “current account” and bank as a single institution have the same behavior under change of clients’ education. People with better education are more likely to use banks on the whole and “current account” service particularly.

Age has negative influence on probability of use of “current account” and has no influence on “payments” service. As for banks on the whole, influence of age on the probability of bank choice has not been confirmed.

Demand for “payments” service does not differ through most regions of clients’ residency. Only in southern part of Ukraine people are more likely to use “payments” service. At the same time clients from this region are less likely to use “current account” service. It means that residency in South Ukraine may have opposite influence on demand for different bank services.

The same contrast is observed for people with different income level. People with average income level (UAH 1001 – 2000) are less likely to use “payments” service and more likely to use “current account” service. As for latter one, it is in inverse relationship with clients’ income level.

Significant bank characteristics for different services are not the same. The following factors are significant for “payments” service:

- Proximity to home
- Number of clients
- Bank honesty
- Simultaneous fulfillment of two conditions, bank represents its honesty and this characteristic is important for a client.

If bank is close to client’s home or has a lot of customers, then people are more likely to use “payments” service there. There is some paradox with bank’s honesty characteristic. If bank is honest with a client and customers are indifferent to this characteristic then individuals are less likely to use “payments” in this bank. But if bank is honest with clients and this factor is important for customers then individuals are more likely to use “payments”. According to Wald test, difference of parameters of the two variables is significant.

Factors that influence demand for “current account” service are different. People for whom reliability of a bank is important are more likely to use “current

account” service. People for whom proximity to work or speed of bank growing matters are less likely to use the latter service.

Difference in results for considered services supports a hypothesis about the difference in factors that influence a choice of a service even in terms of one bank. That is why considering the characteristics that influence a choice of a bank, it is necessary to expand the investigation with choice of factors that influence a choice of each supplied service. Besides, received results prove a necessity of including the individual characteristics in the model.

## *Chapter 6*

### CONCLUSION

This study shows that probability of different services usage is influenced by different characteristics. That is why forecast of demand for bank services cannot be observed as a single probability of current bank usage. Demand for different services should be estimated separately.

There are following findings among results. Education has no influence on demand for “payments” and has a positive impact on demand for “current account”. Age does not matter for “payments” demand and has negative influence on demand for “current account”, i.e. youth is more likely to use this service. Place of living, except South, is insignificant for clients’ demand for “payments”. At the same time people from Center are more likely and people from North or Kyiv are less likely than customers from East or West to use “current account” service. Clients from South are more likely to use “payments” and less likely to use “current account”. People with average income level (UAH 1001 – 2000) are less likely to use “payments” and more likely to use “current account”. So, all demographic characteristic influence a customer choice of a bank service. This finding can be applied by bank managers for better targeting the services.

As for bank characteristics, influence of bank’s reliability, proximity to work or home, number of clients, speed of development, and bank’s honesty matter for at least one service. Impact of other bank characteristics has not been confirmed.

These results can be applied both in theory and practice. Since the results confirm the difference between probability of bank and bank service choice, they will help to develop the separate outstanding of brand and products within this brand. As

for practical application, bank managers can target the clients or improve some bank characteristics according to the priority services.

## WORKS CITED

- Abe, Makoto. 1999. A Generalized Additive Model for Discrete-Choice Data. *Journal of Business & Economic Statistics* 17 (July): 271 – 284.
- Ardic, Oya Pinar, and Uygur Yuzereroglu. 2007. How Do Individuals Choose Banks? An Application to Household Level Data from Turkey. *Munich Personal RePEc Archive* 6096 (November): 1 – 24.
- Baltas, G., P. Doyle, and P. Dyson. 1997. A Model of Consumer Choice for National vs Private Label Brands. *The Journal of the Operational Research Society* 48 (October): 988 – 995.
- Cortez, Rafael, and Ben Senauer. 1996. Taste Changes in the Demand for Food by Demographic Groups in the United States: A Nonparametric Empirical Analysis. *American Journal of Agricultural Economics* 78 (May): 280 – 289.
- Ezirim, Chinedu B. 2005. Empirical Investigation of Customers' Choice of Retail Banks in Nigeria. *The Icfai University Journal of Applied Economics* 4 (September): 31 – 48.
- Guadagni, Peter M., and John D. C. Little. 1983. A Logit Model of Brand Choice Calibrated on Scanned Data. *Marketing Science* 2 (Summer): 203 – 238.
- Hainz, Christa. 2003. Bank Competition and Credit Markets in Transition Economies. *Journal of Competitive Economics* 31 (June): 223 – 245.
- Hui, Kai-Lung. 2004. Product Variety under Brand Influence: An Empirical Investigation of Personal Computer Demand. *Management Science* 50 (May): 686 – 700.
- Jain, Dipak C., Naufel J. Vilcassim, and Pradeep K. Chintagunta. 1994. A Random-Coefficients Logit Brand-Choice Model Applied to Panel Data. *Journal of Business & Economic Statistics* 12 (July): 317 – 328.
- Jimenez, Juan de Dios, and Manuel Salas-Velasco. 2000. Modeling Educational Choices. A Binomial Logit Model Applied to the Demand for Higher Education. *Higher Education* 40 (October): 293 – 311.

- Krishnan, M.S., Venkatram Ramaswamy, Mary C. Meyer, and Paul Damien. 1999. Customer Satisfaction for Financial Services: The Role of Products, Services, and Information Technology. *Management Science* 45 (September): 1194 – 1209.
- Lee, Seung-Hyun, Paul W. Beamish, Hp-Uk Lee, and Jong-Hun Park. 2009. Strategic Choice During Economic Crisis: Domestic Market Position, Organizational Capabilities and Export Flexibility. *Journal of World Business* 44 (June): 1 – 15.
- Malkina, M., and A.Ivanova. 2007. Consumer Choice in Bank Deposits Market in the Modern Russian Conditions. *Bulletin of Nizhniy Novgorod Lobachevskiy University* 2 (February): 223 – 226.
- Martin, Stephen. 2002. *Advanced Industrial Economics*, 2<sup>nd</sup> ed. Amsterdam: Blackwell Publishers.
- Molina, Jose Alberto, and Ana Isabel Gil. 2005. The Demand Behaviour of Consumers in Peru: A Demographic Analysis Using the Quaid. *The Journal of Developing Areas* 39 (Autumn): 191 – 206.
- Pessemier, Edgar, and Moshe Handelsman. 1984. Temporal Variety in Consumer Behavior. *Journal of Marketing Research* 21 (November): 435 – 444.
- Raju, Jagmohan S., Sanjay K. Dhar, and Donald G. Morrison. 1994. The Effect of Package Coupons on Brand Choice. *Marketing Science* 13 (Spring): 145 – 164.
- Seshaiah, S. Venkata, and Vunyale Narender. 2007. Factors Affecting Customers' Choice of Retail Banking. *The Icfai University Journal of Bank Management* 6 (February): 34 – 46.
- Shy, Oz. 1996. *Industrial Organization: theory and applications*. Massachusetts: The MIT Press.
- Steckel, Joel H., and Wilfried R. Vanhonor. 1988. A Heterogeneous Conditional Logit Model of Choice. *Journal of Business & Economic Statistics* 6 (July): 391 – 398.
- Train, E.E. 1986. *Qualitative Choice Analysis*. Cambridge, MA: MIT Press.

## APPENDIX A

TABLE A1. Geography of questionnaire

Oblast name	Freq.	Percent	Cum.
Donetsk	250	15.42	15.42
Dnepropetrovsk	219	13.51	28.93
Kyiv_city	147	9.07	38.00
Crimean	145	8.95	46.95
Odessa	132	8.14	55.09
Lugansk	102	6.29	61.38
Zaporozhie	79	4.87	66.26
Kharkov	76	4.69	70.94
Nikolaev	50	3.08	74.03
Zhytomyr	50	3.08	77.11
Poltava	49	3.02	80.14
Lvov	47	2.90	83.04
Kirovograd	32	1.97	85.01
Khmelnick	28	1.73	86.74
Zakarpacie	27	1.67	88.40
Kherson	24	1.48	89.88
Rovno	22	1.36	91.24
Sumy	22	1.36	92.60
Ivano-Frankovsk	21	1.30	93.89
Ternopol	20	1.23	95.13
Chernovey	16	0.99	96.11
Cherkassy	15	0.93	97.04
Kiev	15	0.93	97.96
Vinnica	13	0.80	98.77
Volyn	11	0.68	99.44
Chernigov	9	0.56	100.00
Total	1621	100.00	

## APPENDIX B

TABLE B1. Descriptive statistics for bank characteristics

Bank characteristic	Importance			Correspondence to the main bank		
	Share of respondents for whom the importance is equal to 5	Share of respondents for whom the importance is equal to 4 and 5	Share of respondents for whom the importance is equal to 3, 4 and 5	Share of respondents that think that it corresponds to a bank with grades 5	Share of respondents that think that it corresponds to a bank with grades 4 and 5	Share of respondents that think that it corresponds to a bank with grades 3, 4 and 5
Bank proposes a lot of services	48.9	79.5	88.8	24.3	53.3	61.4
Bank is reliable	64.5	87.8	92.3	23.1	52.4	60.8
Charges for services are small	59.1	84.9	90.2	17.7	44.2	57.3
Bank is close to home	48.8	77.3	88.7	22.8	48.0	58.7
Bank is close to work	34.4	60.1	75.2	15.3	35.8	48.1
Bank has a lot of branches	42.8	74.1	86.1	23.1	48.3	57.5
Services are quick	61.4	87.6	92.3	22.8	51.0	62.3
Bank keeps privacy	58.3	81.3	88.3	24.9	48.7	55.3
Bank is Ukrainian	41.0	59.8	76.8	35.4	53.9	58.9
Schedule is comfortable	55.5	85.4	90.8	24.6	54.6	63.2
Bank has a lot of clients	35.8	63.9	78.4	23.5	48.2	55.7
Bank is honest with a client	63.4	85.9	90.5	22.0	48.8	56.2
Bank is quick-growing	47.0	77.6	86.5	20.0	46.2	54.2

APPENDIX C

TABLE C1. Empirical results

Type	Variable	Payments	Current Account
Individual characteristics	Education (secondary school)	0.417	-0.023
		(0.386)	(0.287)
	Education (technical school)	0.226	<b>-0.570</b>
		(0.182)	(0.140)**
	Education (specialized school)	0.076	<b>-0.423</b>
		(0.151)	(0.125)**
	Age (25 - 35)	-0.308	<b>0.278</b>
		(0.158)	(0.127)*
	Age (35 - 45)	-0.007	0.008
		(0.167)	(0.129)
	Region (Center)	0.491	<b>0.785</b>
		(0.275)	(0.257)**
	Region (South)	<b>0.534</b>	<b>-0.830</b>
		(0.180)**	(0.138)**
	Region (West)	-0.035	-0.319
		(0.201)	(0.170)
	Region (North)	<b>1.138</b>	0.206
		(0.390)**	(0.233)
	Region (Kyiv)	0.137	<b>-0.640</b>
		(0.233)	(0.179)**
Income (UAH, less 500)	0.752	-0.040	
	(0.458)	(0.266)	

APPENDIX C

Empirical results (Cont.)

Type	Variable	Payments	Current Account
Individual characteristics	Income (UAH, 501 - 1000)	0.245	0.049
		(0.220)	(0.161)
	Income (UAH, 1001 - 1500)	<b>-0.458</b>	<b>0.486</b>
		(0.198)*	(0.165)**
	Income (UAH, 1501 - 2000)	<b>-0.754</b>	<b>0.460</b>
		(0.197)**	(0.168)**
	Income (UAH, 2001 - 2500)	-0.169	0.300
		(0.278)	(0.218)
	Income (UAH, 2501 - 3000)	-0.437	0.449
		(0.333)	(0.300)
	Income (UAH, 3001 - 3500)	-0.863	0.743
		(0.472)	(0.516)
	Income (UAH, 3501 - 4000)	-0.060	<b>-1.303</b>
		(0.586)	(0.452)**
	Income (UAH, more 4000)	-0.703	0.013
		(0.478)	(0.445)

APPENDIX C

Empirical results (Cont.)

Type	Variable	Payments			Current Account		
		Importance	Correspondence	Cross	Importance	Correspondence	Cross
Bank characteristics	Bank proposes a lot of services	-0.292	0.064	0.130	0.112	0.278	0.114
		(0.200)	(0.269)	(0.319)	(0.159)	(0.209)	(0.257)
	Bank is reliable	-0.172	0.114	-0.548	<b>0.456</b>	0.227	-0.156
		(0.208)	(0.328)	(0.364)	(0.161)**	(0.240)	(0.278)
	Charges for services are small	0.328	-0.305	0.012	-0.095	-0.166	-0.122
		(0.190)	(0.305)	(0.352)	(0.156)	(0.265)	(0.300)
	Bank is close to home	-0.094	<b>0.732</b>	-0.401	-0.135	-0.323	0.089
		(0.199)	(0.291)*	(0.354)	(0.165)	(0.212)	(0.266)
	Bank is close to work	-0.319	-0.398	0.430	<b>-0.542</b>	0.164	0.250
		(0.194)	(0.264)	(0.328)	(0.155)**	(0.222)	(0.277)
	Bank has a lot of branches	0.217	0.498	-0.400	-0.008	-0.116	-0.032
		(0.201)	(0.260)	(0.326)	(0.165)	(0.202)	(0.260)
	Services are quick	0.098	0.438	-0.196	0.174	0.101	0.004
		(0.206)	(0.304)	(0.348)	(0.169)	(0.239)	(0.278)
	Bank keeps privacy	0.024	-0.499	0.158	0.114	0.058	0.103
		(0.213)	(0.285)	(0.332)	(0.168)	(0.234)	(0.275)
	Bank is Ukrainian	0.355	0.069	-0.035	-0.333	0.019	0.064
		(0.217)	(0.204)	(0.286)	(0.171)	(0.169)	(0.229)
Schedule is comfortable	0.350	0.217	0.007	0.100	0.290	-0.293	
	(0.202)	(0.285)	(0.344)	(0.163)	(0.248)	(0.291)	
Bank has a lot of clients	0.173	<b>0.527</b>	-0.549	0.174	0.066	-0.193	
	(0.214)	(0.246)*	(0.317)	(0.170)	(0.197)	(0.254)	

## APPENDIX C

### Empirical results (Cont.)

Type	Variable	Payments			Current Account		
		Importance	Correspondence	Cross	Importance	Correspondence	Cross
Bank characteristics	Bank is honest with a client	-0.398 (0.208)	<b>-0.886</b> (0.321)**	<b>1.047</b> (0.363)**	0.222 (0.167)	-0.425 (0.281)	-0.016 (0.313)
	Bank is quick-growing	-0.086 (0.215)	<b>-0.740</b> (0.274)**	0.236 (0.336)	<b>-0.385</b> (0.172)*	0.247 (0.242)	0.429 (0.290)
	Constant	<b>1.734</b> (0.259)**			<b>0.498</b> (0.217)*		
	Observations	1621			1621		

Standard errors in parentheses

\* significant at 5%; \*\* significant at 1%

