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# FACTORS AFFECTING PERSONAL CUSTOMERS' TRUST IN TRADITIONAL BANKING: CASE OF THE BALTICS

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**Abstract.** Nobody disputes that trust is an important issue in choosing a financial service provider, especially in the area of new forms of banking. The goal of this paper is to assess the most important determinants of trust in traditional banking. The study was conducted in the Baltics and personal customers had to rank the distinguished factors. Using correlation analysis and binary logistic regression model it was found that the most significant factor influencing trust in all countries is provided information by the bank. In addition, in Lithuania – bank's characteristics, in Latvia – customers' risk perception and bank's characteristics, in Estonia – respondents' experience of cooperation with a bank were highlighted as significant. The following measures of fit are used in order to describe the created logistic models: contingency table test, Nagelkerke pseudo-$R^2$, Pearson chi-square test, Wald test. However, there is a limitation – the survey was conducted online. Nevertheless, as Internet penetration rate is high enough in investigated countries (from 76 percent in Latvia to 91 percent in Estonia), survey results can be adapted for at least seventy-five percent of each country's population. The findings have implications on the development of the strategy and the policy of commercial banks.

**Keywords:** trust, traditional banking, factors influencing trust, correlation analysis, logistic (logit) regression, Baltic States.

**JEL Classification:** G21.

## Introduction

Scientists agree that trust is a crucial element of successful banking sector development (Wetzel, Van Gorp 2014; Ling, Tran 2012; Phan, Nham 2015). Hence, researchers from all over the world pay close attention to trust in Internet/online banking (Boateng *et al.* 2016; Szopiński 2016; etc.) and mobile banking (Baptista, Oliveira, 2016; Chong *et al.* 2010; Malaquias, Hwang 2016; etc.). Despite the fact that relationship between a client and a bank starts from traditional banking, there have been few studies on trust in traditional banking in the last decade. In the current study, traditional banking is understood as services conducted in physical branches of commercial banks. In fact, many scientists agree that trust in traditional banking has a positive direct correlation with trust in Internet and mobile banking. For instance, Chiou and Shen (2012) state

that customers' experience with traditional banking influences their decision to adopt Internet banking services. Montazemi and Qahri-Saremi (2015) claim that trust in traditional banking compels clients to use Internet banking, and Liao *et al.* (2016) assert that there is a transfer of trust from traditional to Internet banking. Hence, it could be stated that trust in traditional banking is considered as antecedent of trust in Internet and mobile banking services. Therefore, it is crucial to determine factors that improve trust-building process in traditional banking as trust in traditional banking increases customers' propensity to trust other banking services. Consequently, the goal of this paper is to assess the most important determinants of trust in traditional banking. Basically, the following objectives are set: to systemise the key factors influencing individuals' trust in traditional banking; to develop a model for testing the determinants of individuals' trust in traditional banking; to assess the level of determinants' impact on individuals' trust in traditional banking in Baltic States. Correlation analysis and binary logistic (logit) regression model were used to assess the results of residents' answers. For the purpose of created logistic models description the following measures of fit are used: contingency table test, Nagelkerke pseudo-$R^2$, Pearson chi-square test, Wald test. However, there is a limitation – the survey was conducted online in all three Baltic States, and it was found that provided information is one of the key factors influencing trust in traditional banking in all analysed countries. Moreover, for the respondents from Lithuania and Latvia the characteristics of the commercial bank were recognised as an important factor in the process of building trust. In addition, Latvian respondents noted the perception of risk as a significant factor affecting the level of trust in traditional banking while Estonians highlighted respondents' experience of cooperation with a bank. The article is divided into three parts each of which is designed to address mentioned objectives.

## 1. Factors influencing trust in traditional banking

Researchers investigating trust distinguish a large number of factors influencing trust formation. For instance, Jasienė and Staroselskaja (2010) claim that one of the elements of trust model in Lithuania is quality and reliability of provided information. Ibragimova (2012) states that transparency of provided information is the determinant leading to customers' trust. Polyakov (2012) distinguishes transparency of information as positive trust affecting factor. Hence, *provided information* is the factor influencing clients' trust in traditional banking.

A great number of researchers claim that trust correlates with risk (Fairley *et al.* 2016; Groß 2016; Guill 2016; Kerrache *et al.* 2016; etc.). In fact, all the clients who understand the risks of business relationships have to be ensured that banks manage risks, which could help to reduce the probability of potential unfavourable situations. Therefore, *risk* is the factor that could have impact on customers' trust in traditional banking.

For instance, Coelho and Henseler (2012) state that service customisation could increase the level of customers' trust. Aurier and N'Goala (2010) claim that high service evaluation could be converted into trust. According to Afsar *et al.* (2010), the availability of

services increases the level of trust in banks. Based on these assumptions, it could be claimed that *provided services* influence customers' trust in commercial bank.

Scientists claim that there is a direct relationship between the image of commercial banks and customers' trust (Amin *et al.* 2013; Skvarciany, Iljins 2015). There are scientists who state that bank's reputation is the factor that could increase the level of customers' trust (Debab, Yateem 2012; Gul 2014). Consequently, it could be stated that commercial *bank's characteristics,* such as image and reputation, affect the level of consumers' trust in traditional banking.

What is more, it is important for a customer that bank staff provide him up-to-date information, propose the latest range of services, etc. For instance, Ozatac *et al.* (2016) claim that bank's personnel is one of the crucial elements of trust building. In other words, bank employees ought to do their job in a good quality in order to retain a client. This is to say, *bank's employees* are one of the determinants in trust building process.

Yemelyanova (2013) distinguishes customer relations experience with financial institutions as the factor influencing customers' trust in traditional banking. Hence, *clients' experience with financial institution*s is one of the key factors influencing trust in traditional banking.

Yemelyanova (2013) notes the following factors underlying trust: country's general economic situation, instability of the political situation, the degree of perfection of the legal system, mechanisms used for state economic entities activities regulation. In other words, *the state* plays a significant role in reaching trust in traditional banking.

To sum up, the following seven trust-building determinants are distinguished:
- provided information (i.e. quality, reliability, transparency, etc.);
- risks related to the relationship with the bank (i.e. risk perception by a client and risk management by a bank);
- provided services (i.e. reliability, efficiency, quality, satisfaction, etc.);
- bank's characteristics (i.e. bank's reputation, image, etc.);
- bank's employees (i.e. employees' courtesy, competence, honesty, goodwill, etc.);
- customers' experience (i.e. customers' experience with bank accounts, loans, investments, pensions in the bank they use, etc.);
- the state (i.e. general economic situation in the country; instability of the political situation, mechanisms used for state economic entities activities regulation, etc.).

Actually, building trust in commercial banks is a serious issue.

## 2. Methodology

The following methods were used for the assessment of the *singled out* factors affecting customers' trust in traditional banking (Fig. 1).

One of the main methods used in social studies is questionnaire. Questionnaire is a set of formalised questions used to obtain information from respondents (Dikčius 2011). Respondents are asked questions in order to get summarised results and make conclusions,

which can be applied to the whole population. The questionnaire could be made in different forms – by means of oral interview, phone, mail, etc. However, one of the most popular forms of a survey is the online, which makes it easier to connect with the right number of respondents. Besides, there must be properly formulated questions in order to perform a survey. Questions must be submitted in a form that can be easily understood by all the respondents, since only then the analysis of respondents' views will be reliable.

Moreover, it is necessary to choose the right method for respondents' views assessment. Scientists engaged in social research use the Stapel scale method (Ahmed *et al.* 2014; Sreejesh *et al.* 2014), semantic differential scale method (Ciabuca 2015; Kahveci 2015), Likert scale method (Breffle *et al.* 2011; Petsky *et al.* 2012). However, Likert scale method continues to be the most popular one. The respondent ought to evaluate the statements on a five-scale basis, i.e. respondent has to indicate the level of his/her consent/disagreement with the submitted statement.

Moreover, before conducting the survey the study sample, which reflects the whole population, was identified. In order to estimate the strength of the relationship between two variables, a correlation analysis was used.

After calculation of correlation coefficients, the data analysis was performed within binary logistic (logit) regression. Only independent variables $X_i$ $(i = 1,2,\ldots,n)$ that correlate with dependent variable $Y$ are included into logistic analysis. Logistic regression is a powerful tool used for investigating socio-economic factors (Smart, Harrison 2017) when the relationship between variables is not linear. One of the advantages of using the logistic regression model is to obtain a relationship between the probability of the oc-

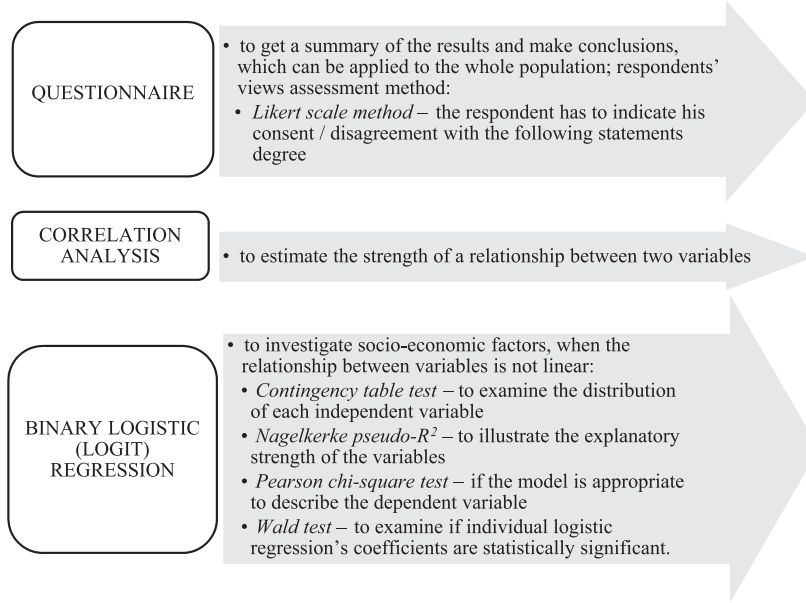


Fig. 1. Model used for the assessment of customers trust in traditional banking
*Source*: created by authors.

currence of a dependent and independent variable (de Menezes *et al.* 2017). The model of multiple logistic regression is presented below (1) (Pandya *et al.* 2014):

$$\ln\left(\frac{\mathbb{P}(Y=1)}{\mathbb{P}(Y=0)}\right)=\beta_0+\sum_{i=1}^{n}\beta_i x_i, \quad (1)$$

where: $Y=1$ – customers trust traditional banking; $Y=0$ – customers do not trust traditional banking; $\beta_0$ – intercept; $\beta_i\,(i=1, 2, \ldots, n)$ – coefficient associated with explanatory variables $x_1, x_2, \ldots, x_n$.

In order to describe the created logistic model, the following measures of fit were used (Allison 2014; Awa *et al.* 2016; Chen, Zhang 2016; Chun-Hung 2015; Nagelkerke 1991; Peng *et al.* 2002):

- *Contingency table test* was used to examine the distribution of each independent variable.
- *Nagelkerke pseudo-$R^2$* was used in order to illustrate the explanatory strength of the variables. The model is considered to be acceptable if Nagelkerke pseudo-$R^2 > 0.15$.
- *Pearson chi-square test* showed if the model is appropriate to describe the dependent variable. The model is acceptable if $p \geq 0.05$.
- *Wald test* was used in order to examine if individual logistic regression's coefficients $\beta_i$ are statistically significant, i.e. if $p < 0.05$.

While using the logistic regression, it is calculated which value of the dependent variable is more likely to occur when the particular category variable is selected. Dependent variable *Y* can acquire a value of 0 and 1. If $Y=0$, it means that customers do not trust traditional banking, while $Y=1$ stands for clients' trust into traditional banking. Respondents' age was marked as categorical variable, which could gain a value of 0 and 1 (0 means that the respondent is 35 years old or under, 1 means that the respondent is above 35). The age of the respondents was chosen as a categorical variable as there is often a difference between the view of young and elder people on the same object.

## 3. Empirical findings

The impact of the factors distinguished in the theoretical part on the level of trust in traditional banking was tested in the Baltic States as these countries suffered heavily in financial crisis. For instance, *Parex bank* in Latvia was nationalised and restructured and currently is named *Citadele bank*. This has led people to perception that the most important matter is trust in banks. The case of bankruptcy of *Snoras* and *Ukio bankas* in Lithuania and *Krajbanka* in Latvia proves it strongly. It is widely argued that bankruptcy accrued due to intended mismanagement of financial assets by bank owners. This is to say, the study of trust is important and relevant in the current situation in the banking sector. As a result, the soundness of commercial banks was questioned.

In order to get respondents' answers, an online survey was conducted in 2016. The number of respondents in Lithuania was 342, and reliability level was 94.75%. The number of respondents in Latvia was 351, which represents 94.8% of population. The

number of respondents in Estonia reaches 320 people, and reliability level is 94.6%. As reliability levels in all the countries were approximately 95%, this number was used in further calculations.

Respondents were given a questionnaire consisting of 10 questions, divided into two groups:

– personal information (demographic aspects, age, sex, education),
– factors influencing trust in traditional banking assessment.

The study took place in cyberspace using "Solid Data", UAB website www.manoapklausa.lt. Since the survey was conducted online, the study has limitations – the results can be applied only to Internet users. Statistics representing Internet users in the Baltic countries on July 1, 2016 are presented in Figure 2.

Internet penetration rates in the Baltic countries are high (Fig. 2). 77.2 percent of residents in Lithuania, 76.3 percent of that in Latvia and 91.4 percent of residents in Estonia are Internet users (Internet Live Stats 2016). Thus, it can be said that the survey results can be adapted for at least seventy-five percent of each country's population.

Respondents were also asked about their education, as it is important to examine population in all education groups. The respondents represent different education groups (Fig. 3).

Respondents were not offered any choice for "incomplete higher" because it could have a negative impact on the statistics (for example, a reduction of the respondents with only a high school education).

The following determinants were distinguished for the examination of consumer confidence in traditional banking ($Y_{tr.}$):

– Information provided to customers ($X_{tr.1}$);
– Customer risk perception ($X_{tr.2}$);
– Bank services ($X_{tr.3}$);
– Bank's characteristics ($X_{tr.4}$);

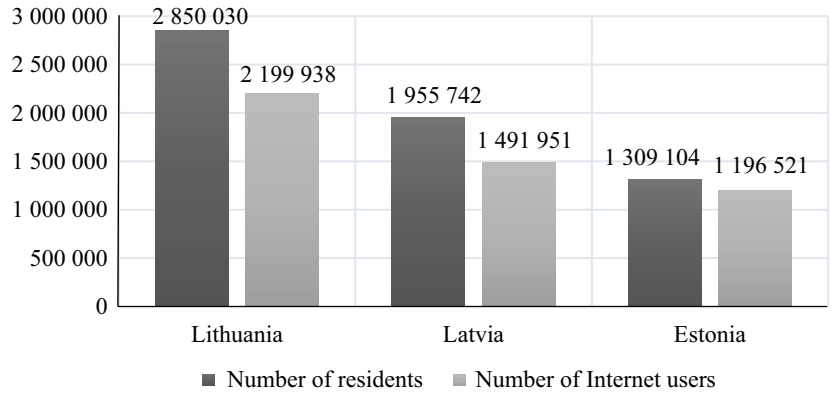


Fig 2. Comparison of population and the number of Internet users
*Source*: authors' compilation based on Internet Live Stats 2016.

– Bank employees ($X_{tr.5}$);
– Customer experience ($X_{tr.6}$);
– The state ($X_{tr.7}$).

Table 1 represents correlation coefficient matrix of trust in traditional banking and its determinants in all three countries.

Table 1. Correlation coefficients between distinguished factors and trust in traditional banking

| | | Trust | Information provided | Risk perception | Services | Bank | Bank employee | Customer experience | State |
|---|---|---|---|---|---|---|---|---|---|
| Trust: Lithuania | $r_{xy}$ | 1 | 0.462** | 0.208** | 0.334** | 0.392** | 0.314** | 0.314** | 0.218** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | *N* | 342 | 342 | 342 | 342 | 342 | 342 | 342 | 342 |
| Trust: Latvia | $r_{xy}$ | 1 | 0.585** | 0.374** | 0.500** | 0.515** | 0.430** | 0.471** | 0.347** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | *N* | 351 | 351 | 351 | 351 | 351 | 351 | 351 | 351 |
| Trust: Estonia | $r_{xy}$ | 1 | 0.415** | 0.142** | 0.335** | 0.322** | 0.330** | 0.389** | 0.226** |
| | Sig. (2-tailed) | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | *N* | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 |

**Correlation is significant at significance level 0.01.

*Source*: authors' calculations.

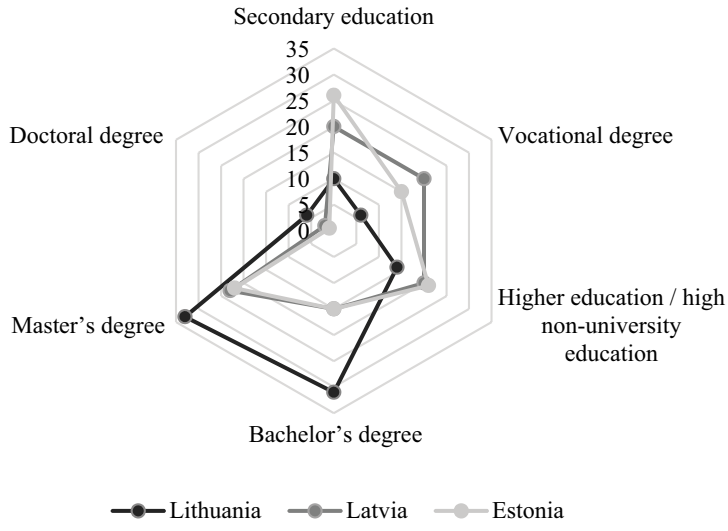


Fig. 3. Distribution of the respondents by education, %
*Source*: authors' compilation.

The correlation coefficients are statistically significant at a significance level 0.01 (Table 1). The analysis of correlation coefficients shows that in all cases there is a positive linear relationship between trust in traditional banking and the information provided, i.e. the more transparent and the better quality information is provided to customers, the more customers rely on it. This relationship is the strongest in Latvia – the correlation coefficient is equal to 0.585. The analysis of the relationship between trust and risk perception shows that in Lithuania and Estonia this dependence is weak, whereas in Latvia's case the correlation coefficient reaches 0.374. This ratio indicates that Latvian banking consumer's risk perception and trust in traditional banking are directly proportional dimensions with a moderate relationship between them. Thus, it can be concluded that higher perception of risk leads to a higher degree of trust in traditional banking. The examination of the relationship between trust in traditional banking and bank services shows that there is a moderate relationship between them in all countries. However, the strongest relationship was observed in Latvia. In all cases, there is a moderate positive linear relationship between service provider's (the bank's) characteristics, such as image, reputation, asset size, etc., and trust in traditional banking. However, the highest coefficient value is in the case of Latvia (Table 1). The analysis of the relationship between the bank staff performance (courtesy, integrity, competence, and so on) and trust in traditional banking shows that in all countries there is a linear positive relationship between factors, and the correlation coefficient is moderate.

Thus, there is a moderate dependence among these factors, specifically, the improvement of the characteristics of bank's employees leads to increasing the level of customers' trust in traditional banking. There is also a positive linear relationship between trust in traditional banking and customer experience in all countries: the more experiences are positive, the more customers rely on traditional banking. In Latvia's case, the relationship between these factors is the strongest (the correlation coefficient is equal to 0.471). The correlation coefficient between the state (its policies, the legal situation and so on) and trust in traditional banking in Latvia equals to 0.347 (moderate dependence), while in Lithuania and Estonia, this relationship is weak and equals to 0.218 and 0.226 respectively. In all cases, the correlation coefficients are greater than zero, which means that in all countries there are relationships between investigated factors.

Multi-logistic regression model has also been used in the examination of trust in traditional banking. Categorical variable in this case is the age. Respondents are split into two groups: age group of 18–35 years old (inclusive) and above 36. Younger category is set to 0, the elder – 1. There was 50 percent of each categorical group representatives in the sample. Likelihood ratio criterion of model feasibility $p$ value is less than 0.05, so the model fits the data. Not all regressors used were statistically significant, so only the variables fulfilling conditions were left in the model.

Logistic regression was also applied for the analysis of the research findings. The total sample correctly classified by the number of respondents in the examination of the Baltic commercial banks' customer confidence in traditional banking was 85.6 percent in Lithuania, 82.8 percent in Latvia and 81.3 percent in Estonia. Nagelkerke pseudo coefficients of determination $R^2$ are 0.283, 0.452, and 0.193 respectively in Lithuania,

Latvia, and Estonia. Model likelihood ratio criterion $\chi^2$ statistics is 65.879 in Lithuania, 133.783 in Latvia, 46.066 in Estonia. In all cases $p < 0.01$. In addition, statistically insignificant variables were removed from the analysis – $X_{int.2}$ and $X_{int.3}$ in Lithuania, $X_{int.3}$ in Latvia and $X_{int.3}$ in Estonia. Statistical significance of unmentioned factors confirmed Wald criterion.

$$\ln\frac{\hat{\mathbb{P}}\left(Y_{tr.LT}=1\right)}{\hat{\mathbb{P}}\left(Y_{tr.LT}=3\right)}=6.021-1.713X_{tr.1}-1.090X_{tr.4}+\begin{cases}-0.410, & if\ X_{cat.}=0,\\ 0, & if\ X_{cat.}=1.\end{cases} \quad (2)$$

Two statistically significant variables were identified in the examination of Lithuanian respondents: information provided for customers ($X_{tr.1}$) and characteristics of the service provider (the bank) ($X_{tr.4}$). Decrease in transparency, reliability, quality of information provided increases the total distrust of traditional banking probability in Lithuania (2). In addition, it can be seen from (2) that increase of the bank's image, reputation assessment contributes to the probability of full trust in traditional banking. Dual value of categorical variable shows that if the respondent trusts traditional banking the probability that he/she is 35 years old or under increases.

$$\ln\frac{\hat{\mathbb{P}}\left(Y_{tr.LV}=1\right)}{\hat{\mathbb{P}}\left(Y_{tr.LV}=3\right)}=9.205-1.783X_{tr.1}-1.032X_{tr.2}-1.076X_{tr.4}++\begin{cases}1.065, if\ X_{cat.}=0,\\ 0, \quad if\ X_{cat.}=1.\end{cases} \quad (3)$$

Three statistically significant variables were identified in the examination of Latvian respondents: information provided for customers ($X_{tr.1}$), customer risk perception ($X_{tr.2}$) and characteristics of the bank ($X_{tr.4}$). Decrease of transparency, reliability, and quality of information provided increases the probability that bank service users do not trust traditional banking (3). In addition, decrease of the bank's image and reputation assessment increases the probability of complete distrust in traditional banking (3). Dual value of categorical variable shows that if the respondent trusts traditional banking the probability that he/she is above 35 years old increases.

$$\ln\frac{\hat{\mathbb{P}}\left(Y_{tr.EE}=1\right)}{\hat{\mathbb{P}}\left(Y_{tr.EE}=3\right)}=3,159-0,993X_{tr.1}-0,851X_{tr.6}+\begin{cases}-0,50, & if\ X_{cat.}=0,\\ 0, & if\ X_{cat.}=1.\end{cases} \quad (4)$$

Two variables appeared to be statistically significant, developing the logistic regression model of describing Estonian residents' trust in traditional banking. They are as follows: information provided to the clients ($X_{tr.1}$) and respondents' experience of cooperation with financial institutions ($X_{tr.6}$). The probability of overall trust in traditional banking will increase if the quality, transparency, and reliability of information provided to the clients increase (4). Additionally, according to the respondents' opinion, the level of probability of overall trust in traditional banking depends on customers' experience with other financial institutions. In other words, the greater the clients' experience with other financial institutions is, the higher the level of probability of trust in traditional banking gets. The two-level categorical variable shows that if the respondent trusts traditional banking the probability that he/she is 35 years old or younger increases.

## Conclusions

Seven factors affecting personal customers' trust in traditional banking were distinguished from the scientific literature analysis. They are as follows: information provided to customers, customer risk perception, bank services, bank's characteristics, bank's employees, customers' experience, the state. Correlation and logistic regression analyses were used in order to examine these factors' influence on customers' trust in traditional banking. For the purpose of description the created logistic models, the following measures of fit were used: contingency table test, Nagelkerke pseudo-$R^2$, Pearson chi-square test, Wald test. What is more, the age of the respondents was marked as a categorical variable, as there is often a difference between the view of young (35 and under) and elder people (above 35) on the same object. After summarising the results of the correlation and logistic regression analyses, it was found that bank services, bank employees and the state are insignificant factors for respondents from all three Baltic countries. Meanwhile, it could be concluded that provided information is one of the vital factors that encourages the growth of trust in traditional banking in the Baltics. In fact, the client having sufficient information could analyse all the conditions of the bank's services and choose the appropriate ones. What is more, the client having information might not only overview the current situation, but also study the previous bank's activities and, therefore, based on historical data forecast the prospective behaviour of the bank. Moreover, the customer that has sufficient information concerning the bank activities feels more secure and is compelled to continue cooperation with the bank. Lithuanian and Latvian clients are quick to respond to signals other than provided information, such as the characteristics of a commercial bank, including bank reputation, image, bank interest in customers' welfare, shared values, etc. This is identified as key factor in the process of building trust. In addition, Latvian respondents distinguished risk perception also as a significant factor effecting the level of trust in traditional banking. It shows that before making a decision to trust/distrust traditional banking, a customer tries to figure out all the possible risks of cooperation with the particular institution and evaluate those risks. However, risk perception is not a vital factor neither for Lithuanian nor for Estonian respondents. Experience of cooperation with financial institution respondents' highlighted as a second significant factor in Estonia. Dual value of categorical variable (age) shows that if the respondent trusts traditional banking the probability that he/she is 35 years old or under increases in Lithuania and Estonia. However, the situation in Latvia is on the contrary, i.e. if the person trust traditional banking the probability that he/she is above 35 years old increases. What is more, the influence of age on trust is two time higher in Latvia than in other two countries. Regardless of the online survey, the results represent at least seventy-five percent of each country's population and are important for banks in trust-building process. The respondents in all three countries cover all possible education groups; hence, the results reflect the entire population.

From a theoretical perspective, the findings of this paper have implications for science on the determinants of trust in traditional banking. The current research would be valuable for the commercial banks that are making efforts to attract new clients and retain

the existing ones. Actually, the current paper summarises the factors influencing personal customers' trust in traditional banking and, consequently, could be used for trust research not only in the Baltic States, but also beyond their borders.

However, there are several limitations in this research. Firstly, the survey on personal customers' trust in traditional banking was conducted in the virtual space; hence, the results of the research represent only the opinions of Internet users. Secondly, the factors affecting personal consumers' trust in traditional banking were examined in Lithuania, Latvia, and Estonia, that is, the results may not fully reflect the real situation in other countries. Thirdly, trust is a relative concept and changing economic conditions can have an impact on the importance of trust-forming factors, therefore the influence of factors proposed in the current study on customers' trust in traditional banking ought to be periodically reviewed.

What is more, in order to get the whole picture of commercial bank's customers' trust in traditional banking, business customer's trust ought to be analysed. In fact, further studies should distinguish the factors of the business customers' trust in traditional banking in order to figure out how to evaluate the business customers' trust in traditional banking.

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