

Czechowska, Iwona Dorota; Padaszyńska, Marta

Article

Satisfaction and trust in banks on the housing loan market

Contemporary Economics

Provided in Cooperation with:

VIZJA University, Warsaw

Suggested Citation: Czechowska, Iwona Dorota; Padaszyńska, Marta (2026) : Satisfaction and trust in banks on the housing loan market, Contemporary Economics, ISSN 2300-8814, VIZJA University, Warsaw, Vol. 20, Iss. 1, pp. 77-93,
<https://doi.org/10.5709/ce.1897-9254.583>

This Version is available at:

<https://hdl.handle.net/10419/340150>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Primary submission: 05.07.2023 | Final acceptance: 08.11.2024

Satisfaction and Trust in Banks on the Housing Loan Market

Iwona Czechowska  and Marta Paduszyńska 

ABSTRACT

The interest in consumer attitudes and role in economic and social life becomes increasingly evident among the representatives of economic sciences and has become a focal point in the financial industry. This issue is not only important for financial institutions in terms of building long-term relationships with customers, but also in terms of maintaining the stability of the financial system and the entire economy. The aim of the article is to assess the relationship between the satisfaction with the bank's products and the customer trust in the bank, considering sociodemographic characteristics and credit profile. Nonparametric tests such as Mann-Witney U test and Kruskal-Wallis H test, and the ordinal logistic regression model were used as research methods. The study was conducted based on information obtained from a survey questionnaire (CAWI method) provided to the respondents in June and July 2022. The research sample included borrowers living in Poland, aged 18 or older, with housing loans secured by a mortgage. The study found that there is a strong positive relationship between the satisfaction with bank's products and the customer's trust in the bank, meaning that satisfaction translates positively into the trust in the bank, which is important for earning and maintaining customer loyalty.

KEY WORDS: satisfaction, trust, banking sector, mortgage, housing loans.

JEL Classification: G21, G510, M31.

University of Lodz, Faculty of Economics and Sociology, Poland

1. Introduction

In the activity of business entities, it is necessary to constantly strive not only to stay on the market, but also ensure the entities' development (Michalczyk, 2013; Santos et al., 2015). In this process, the importance of intangible assets of a company, such as product branding and the ability to build relationships with consumers, is increasing (Murè et al., 2021). Ensuring consumers' satisfaction is essential to earn their loyalty. It allows for strengthening of the competitive position on the market (Ostrowska, 2010; Raza et al., 2020; Winstanley, 1996). The aim

of financial institutions to ensure high satisfaction and, therefore, customer loyalty should be achieved through their fair and honest conduct (Czechowska, 2009, 2015; World Bank Group, 2017). It is not possible to earn the loyalty of customers without inspiring their trust (Radomir et al., 2015).

Housing loans play a significant role on the market of banking products and services (Kowalewska, 2016). House or flat owned is recognized as an asset that fulfills basic welfare needs and is the basis for the proper functioning of human beings, and for the conditions necessary for human development. The subprime crisis showed how imprudent lending policies can become a source of instability for

Correspondence concerning this article should be addressed to:

Marta Paduszyńska, University of Lodz, Faculty of Economics and Sociology, ul. Rewolucji 1905 roku 41, 90-001 Łódź, Poland

E-mail: marta.paduszyńska@uni.lodz.pl

the entire financial system (Ackermann, 2008; Bar-Gill, 2009; Hellwig, 2009). The defectiveness of the adopted sales models led to a situation in which the financial products offered were not tailored to the needs or capabilities and financial situation of consumers (Allen et al., 2019; Djankov et al., 2007). As a result, the consumers made decisions hastily, without thinking about the possible consequences of the incurred commitments, which caused financial problems. Given that the problems of the functioning of the economy result from demand slump and bad consumer sentiment, i.e., a deteriorating consumer economy (Śleszyńska-Świdorska, 2017), it is justified to analyse consumer attitudes. The presented considerations show how important it is to build positive relations between the bank and the customer (Kieźel & Smyczek, 2013). This was the motivation behind the research.

The purpose of the study is to assess the relationship between the satisfaction with the bank's products and the customer trust in the bank, considering sociodemographic characteristics and credit profile. Data used in the analyses was obtained through a survey questionnaire completed using the CAWI research method on a representative sample of respondents with a housing loan secured by a mortgage, in the period from 23 June 2022 to 29 July 2022. The scope of the study was nationwide. Funds for the implementation were obtained under the "Doctoral Research Grant" financed under the Excellence Initiative - Research University (IDUB) (Project code: B2111209000078.07). The surveyed borrowers evaluated various aspects of the banks' operations and indicated whether they were satisfied with the products provided by the banks.

The study consists of several parts. The introduction presents the theoretical basis of the analyzed issue, referring to the concepts and meaning of consumer behavior and attitudes. It includes the analysis of the theoretical relationships between trust toward banking institutions and customer satisfaction. The next section describes the research method and the method-specific procedures. Then the results of the author's study are presented. The author's study evaluated the relationships between customers' trust in the banks and the sociodemographic characteristics and credit profile parameters of the respondents.

Nonparametric statistical tests were used for this purpose. Furthermore, the ordinal regression method was used to assess the (multivariate) relationship between the declared satisfaction with the products and the customers' trust in the banks, considering the sociodemographic characteristics and credit profiles of the respondents. The final section is to present and discuss the results obtained from the empirical analyses carried out, and also to draw conclusions.

2. Literature Review

The analysis of the literature identifies the current state of knowledge about the attitudes and behaviors of entities on the market of banking services. Allowedly, consumers play a key role as participants on the consumer goods and services market, but also as participants in the labor and financial markets (Kieźel & Smyczek, 2013; Śleszyńska-Świdorska, 2017). Their behaviors on these markets affect not only their budgets, but also the state budget (Śleszyńska-Świdorska, 2017). It is worth emphasizing that consumers' behaviors are significantly shaped by their attitudes (Żuchowski & Brelik, 2007). The term "attitudes" according to G. Sobczyk means "a relatively constant inclination towards a positive or negative attitude towards an attitude object, which can be a physical or abstract thing, person, or event" (Sobczyk, 2018). Attitudes are associated with beliefs about the object (product), the affective component (emotions and attitudes towards the product in question), or the behavioral component, i.e., the intention to purchase the product (Falkowski & Tyszka, 2009). Attitudes influence consumer behavior; they are shaped through the customers' own experiences but also by the external environment (Sobczyk, 2018). The definition of the "attitude" concept is very broad and multifaceted. Therefore, attitude can be described as the result of an individual's mental processes, expressed beliefs, and feelings towards a given object which can be obtained based on specific actions (Bakanauskas et al., 2020).

One of the areas where consumers exhibit certain behaviors and attitudes is the market of banking products. The consequences of the financial crisis have caused the trust that customers put in banks to decline (Acharya & Richardson, 2009; Bernardelli

et al., 2023; Mian & Sufi, 2008; Wallison, 2009). Therefore, one of the key actions taken by banks should be to seek the trust of customers (Armstrong, 2012; Bülbül, 2013; Knell & Stix, 2015). Trust is an important pillar of any activity undertaken on the market (Kieźel, 2015; Nugraha, 2021). It is a mechanism that assumes the common, cooperative behavior of members of a given community (Fukuyama, 1997). The basis of trust is respecting the mutually accepted norms (Hurley et al., 2014; Nowakowski, 2008). Consideration of this value was also included in J. Penc's definition (2011) according to which "trust is the belief that the person with whom one interacts has proper qualifications, is competent and righteous". Trust deserves a positive assessment, as it shows advantageous correlations with the effectively operating economy (Algan & Cahuc, 2013; Bilan et al., 2019; Morrone et al., 2009). Consumer trust can be strained by several negative actions taken by banks (whether intended or not). The consumer trusts the bank to provide a product that has all the required parameters (Rudzewicz, 2018). As Frankowska (2011) points out, it is necessary to constantly examine the level of customer satisfaction with services to improve the quality of service, since the degree of customer satisfaction is a determinant of such quality. The source literature further shows that trust between consumers and financial institutions is an important pillar to ensure adequate protection on the financial services market. Trust should be built on both sides and be connected to a change in acceptable social norms (Stopczyński & Ziemba, 2021). Understanding this aspect, in addition to the scientific value, is important for financial institutions in the process of building and managing long-term customer relationships (Hunt, 2012).

In recent years, increased interest has been expressed in the source literature on studying the impact of customers' satisfaction on trust towards banks. Satisfaction can be understood as an evaluation that follows a purchase decision (Bearden & Teel, 1983) or as a reaction to the evaluation of a perceived discrepancy between prior expectations and the actual performance of the product/service that is assessed after the

product consumption has ended (Chan et al., 2003; Trif, 2013). Consumer satisfaction includes both tangible and intangible elements (Szopiński, 2021). This term can also be understood as the subjective position of a given recipient based on personal parameters (Arszułowicz, 2020).

Customer satisfaction has a favorable impact on trust in the banking industry, as empirical research regularly shows (Bhat et al., 2018; Geebren & Jabbar, 2021). Bhat et al. (2018) proved that customer knowledge management (CKM) and satisfaction have a significant positive impact on customer trust, and customer trust has a significant impact on loyalty. Researchers have attempted to answer the question of how customer satisfaction affects trust, but also how this trust builds loyalty among those who purchase banking services (Hoq et al., 2010; Leninkumar 2017; Rafiq et al., 2020; Rizan et al., 2014; van Esterik-Plasmeijer & Van Raaij, 2017). For example, Hoq et al. (2010) have shown a significant positive relationship between trust loyalty of customers of Malaysian banks, that is, that high levels of trust lead to earning customers' loyalty.

As part of a detailed analysis of the issues of customer satisfaction, the literature has attempted to determine which factors affect the satisfaction of bank customers and also trust in banks. Al Qaisi and Alrosan (2020) assessed the impact of service quality, trust, and image of the institution on customer satisfaction in Islamic banks. In their research, they have shown that there is a significant positive impact of the above-mentioned variables on customer satisfaction. Geebren and Jabbar (2021) discussed the application of the Delone and Mclean model in the context of customer trust and satisfaction. Furthermore, they proposed a model to evaluate the impact of a range of factors on the trust of mobile banking customers. Five factors were used in this model, that is, system quality, information quality, service quality, structural insurance, and tasks and features. The study showed that there is a relationship between independent variables and customer satisfaction when trust is used as a mediating variable. Giemza and Materna (2015) showed that the determinants of customer satisfaction in banks in Poland are the external and

internal appearance of the bank branch, response time, the competence and reliability of the bank employee, and the information the customers receive about the bank's products. The study by other authors showed that trust in the banking industry is affected by customer satisfaction which is determined by tangibility, staff, technological quality, and dependability (Dandis et al., 2021; Haron et al., 2020; Kavita et al., 2022). Trust can be assessed at both organizational and service levels (Anjalika & Priyanath, 2018). Banks can increase both consumer satisfaction and trust at the same time by streamlining their product offerings, utilizing behavioral approaches, and emphasizing customer support. Analyzing the impact of a range of factors on satisfaction and trust in the banking sector is evident in the literature. There are studies devoted to examining the impact of customer demographics on bank service evaluation, satisfaction, and trust (Ahmed, 2023; Chan et al., 2003; Caruana, 2002; Chu et al., 2012). Gonçalves and Sampaio (2012) showed that when using customer repurchase intention (RI), the gender and age of the customer have a positive effect on the relationship between customer satisfaction and loyalty. On the other hand, considering repurchase behavior (RB), measured by the number of transactions made by credit card owners, an important factor is the period of the relationship with the customer. Seiler et al. (2013) showed that customer satisfaction has a strong positive impact on loyalty, while service value was shown to have no significant direct impact, since it is mediated by satisfaction. On the other hand, considering customer demographics that affect customer satisfaction, significant differences were shown in average scores for: employment status, type of private banking provider, and size of liquid assets. Studies included in the source literature show evidence that gender and age can be substantial to customer satisfaction or trust (Faqih & Jaradat, 2015; Homburg & Giering, 2001; Marinković et al., 2020; Moraru & Ilie, 2021; Walsh et al., 2008).

The model of meeting housing needs based on credit and ownership is being perpetuated, and there is a phenomenon of depersonalization and diversification of credit. The need for research

dedicated to the protection and satisfaction of customers contracting housing loans is timely and important due to the dynamic growth in the number and value of loans granted. Review of the source literature shows that trust and customer satisfaction in the banking sector is an important issue, but there is a research gap in the analysis of a particular type of banking products - housing loans (Josipović, 2014; Perry & Blumenthal, 2012; Póltorak, 2019). An attempt has been made to fill this gap. Taking the above into account, the following research hypotheses were adopted:

- H1: There is a statistically significant positive relationship between the satisfaction with the banks' products in general and customer trust in the banks.

- H2: Sociodemographic and economic characteristics (gender, age, place of residence, level of education, net income) of customers with a housing loan significantly differentiate the statistically declared level of trust in the banks.

- H3: The credit profile parameters (bank type, year of contracting the loan, loan term, loan amount, share of instalment in net income, and loan currency) significantly differentiate the statistically declared level of trust that the customers with housing loans put in the banks.

3. Research Method

The evaluation of the respondents' satisfaction and trust in banks was the subject of a survey conducted among adult Poles using the CAWI (computer-assisted web interview) method. This quantitative data collection technique consists in providing information through an online survey questionnaire. A total of 993 people aged 18 years or older were surveyed. The selection of the research sample was made taking into account the population of borrowers with a housing loan secured by a mortgage with consideration of the borrowers age and gender, and in accordance with the data obtained from the Credit Information Bureau in Poland. The sampling was quota-based. In the survey, 49.7% of respondents were women and 50.3% were men. Considering the age of the respondents, people aged between 18 to 34 accounted for 21.5% of all respondents, people aged

35 to 44 - 40.4%, people aged 45 to 54 - 23.7%, and people aged 55 and older accounted for 14.5% of all respondents. An original research questionnaire was used, containing, among others, questions related to the housing loan and the declared satisfaction with the loan and ancillary products, and trust in the bank in which the respondent has contracted their housing loan. The respondents could make their assessment based on a 5-point Likert scale (in terms of satisfaction: from 1 - definitely dissatisfied to 5 - definitely satisfied, while in terms of trust towards the bank, the scale was between 1 - definitely not, to 5 - definitely yes).

The results were compiled using IBM SPSS Statistics (version 28.0.1.0) software. Firstly, the relationship between the customer trust in the bank and sociodemographic characteristics and credit profile parameters was assessed based on nonparametric tests, such as the Mann-Whitney U test and the Kruskal-Wallis H test. The Mann-Whitney U test is a nonparametric equivalent of the Student's t test (a method for comparing two mean values with each other. Student's t distribution is described by a family of curves with characteristics $=0$ and $\sqrt{\sigma = \frac{n}{n-2}}$ (Malarska, 2005; Spanos, 2002). Nonparametric tests are used when the dependent variable is measured on an ordinal scale or when a quantitative variable does not meet the assumptions for parametric tests (Fay & Proschan 2010). The Mann-Whitney U test is used to test differences between two independent groups. The effectiveness of this test, that is, the ability to reject the null hypothesis when it is false, is like that of Student's t -test (Bedyńska & Brzezicka, 2007).

The following hypotheses are tested:

$$H_0 : F_1 = F_2$$

$$H_1 : \sim H_0$$

where:

F_1 and F_2 mean the distribution function of the probability distributions of the examined feature in the compared populations.

If $p < \alpha$, the differences between the groups are considered statistically significant; therefore, we reject the null hypothesis H_0 in favor of the alternative hypothesis H_1 . Otherwise, that is, when $p > \alpha$, there is no reason to reject H_0 , which means that the distribution of the dependent variable does

not differ significantly in the compared subgroups (Wiktorowicz et al., 2020).

In addition, the Kruskal-Wallis test was used, which is a nonparametric equivalent of the F test (this is a parametric test used in the analysis of variance, which, like the Student's t test, requires the fulfilment of assumptions regarding the distribution of the dependent variable being compared in populations). It needs to be used when dealing with more than two compared groups (Wiktorowicz et al., 2020). This test does not require the fulfilment of many assumptions (Singh et al., 2013). The distributions of the variables do not need to be close to the standard distribution. There is no requirement for the groups to be equal in terms of the number of people, and equality of variances in the groups is not required. In the Kruskal-Wallis test, the values of the dependent variable are replaced by ranks; therefore, we can compare not the arithmetic means of the variable values, but the rank means (Wiktorowicz et al., 2020). On this basis, we conclude that the distribution of the dependent variable in at least one of the compared subpopulations is significantly different. The following hypotheses are tested:

$$H_0 : F_1 = F_2 = F_3 = F_k$$

$$H_1 : \sim H_0$$

where:

F - is the distribution function of the dependent variable distribution.

If each of the subgroups has a size of at least 5, then the distribution of the H statistic is well approximated by the χ^2 distribution with $df = k - 1$ degrees of freedom. In the Kruskal-Wallis test, when $p < \alpha$, the differences between the groups are considered statistically significant, therefore, we reject the null hypothesis H_0 in favor of the alternative hypothesis H_1 . Otherwise, that is, when $p > \alpha$, there is no reason to reject H_0 , which means that the distribution of the dependent variable does not differ significantly in the compared subgroups. As in the case of variance analysis, if we reject H_0 in the Kruskal-Wallis test, post hoc tests should be used in the next step (Wiktorowicz et al., 2020). Making multiple comparisons allows one to find which subgroups differ significantly. The analysis involved the Kruskal-Wallis one-way analysis of

variance test for multiple comparisons (Ostertagova et al., 2014).

The test of the null hypothesis is the module from the difference between the average ranks in the compared groups (Osterlagova et al., 2014; Wiktorowicz et al., 2020):

$$D = |\bar{R}_i - \bar{R}_j|$$

where:

\bar{R}_i – means the average rank in the i -th group.

The tests are carried out by comparing the value of the D statistic with the value calculated for the CKW critical point of χ^2 decomposition of the α level of significance.

The V-Cramer coefficient and the Spearman's rank correlation coefficient were used to assess the direction of the relationship between the variables.

Before the development of the multivariate ordinal regression model, the frequency distribution of individual responses was presented using the counts of each category and their distribution expressed as percentages. To exclude the multicollinearity effect from the forthcoming estimated model, we investigated the existence of monotonic relationships between two variables, the Spearman correlation coefficient was used, both for the general analysis and subgroups. The statistically significant result for the Spearman correlation coefficient proves the existence of monotonic dependencies between the variables. This coefficient takes values from -1 to 1. If the coefficient becomes positive, it means that as one variable grows, the value of the other variable grows as well. However, if the correlation is negative, it means that, as the value of one parameter increases, the value of the other parameter decreases. The correlation can be low, moderate, high, or very high. It may also not be present. The following classification of the correlation strength was used (Guilford, 1965):

- $|r|=0$ – no correlation,
- $0<|r|\leq 0,3$ – very weak correlation,
- $0,3<|r|\leq 0,5$ – weak correlation,
- $0,5<|r|\leq 0,7$ – moderate correlation,
- $0,7<|r|\leq 0,9$ – high correlation,
- $0,9<|r|<1,0$ – very high correlation,
- $|r|=1$ – full correlation.

The multivariate ordinal regression model was then performed to test the relationship between the declared satisfaction with the products and the customers' trust in the banks, considering the sociodemographic characteristics and credit profile of the respondents. This is a method for modeling variables presented on an ordinal scale, which means that they are ranked according to a specific, predetermined hierarchy. The ordinal regression model predicts the category value for each respondent by returning the probabilities of each possible response. The category with the highest probability is chosen. To determine these probabilities, we need to consider a series of logistic regressions of the form:

$$\Pr(y > 1) = \text{logit}^{-1}(X\beta)$$

$$\Pr(y > 2) = \text{logit}^{-1}(X\beta - c_2)$$

$$\Pr(y > 3) = \text{logit}^{-1}(X\beta - c_3)$$

...

$$\Pr(y > K - 1) = \text{logit}^{-1}(X\beta - c_{K-1})$$

where:

y is the dependent variable (category);

X is the matrix of explanatory variables;

β is the vector of model parameters;

c_i is the cutpoint.

Thus, the probability of determining the value for a specific category can be calculated using the following formula:

$$\Pr(y = k) = \Pr(y > k - 1) - \Pr(y > k) = \text{logit}^{-1}(X\beta - c_{k-1}) - \text{logit}^{-1}(X\beta - c_k)$$

Based on the Akaike Information Criterion (AIC) the best-fit multivariate model was selected. The formula for AIC is as follows:

$$AIC = -2 \sum_j \ln(\pi_j) + 2q,$$

where π_j denotes the estimated probability, under the assumptions of the given model, of obtaining the observed value, and q is the number of model parameters.

Based on the coefficients β , the value of their exponents: $\exp(\beta)$ was calculated: $\exp(\beta)$, which means the unit odds ratio, i.e. the value of how many times the odds of an event described by the

dependent variable will increase (decrease), if the value of the given predictor will change compared to its reference level (which is 1 by default). By odds we mean the ratio of probabilities: the occurrence of a given event to its non-occurrence. Additionally, 95% confidence intervals for OR were calculated for each variable included in the final model.

4. Research Results and Discussion

The following elements comprising the attitudes of the surveyed consumers toward banks were measured: satisfaction with a housing loan, satisfaction with products ancillary to the loan, satisfaction with the bank's products in general, and trust in the bank. The analysis was carried out considering the sociodemographic characteristics of the respondents, such as age, place of residence, level of education, net income, as well as variables related to the credit profile of the respondents, such as: loan amount, share of the instalment in net income, loan currency, loan period, year of contracting the loan, bank type. The descriptive statistics for the variables are presented in Table 1. Frequency and percentages were used to highlight the descriptive result, considering the ordinal or nominal character of the variables.

Considering the sociodemographic variables, the surveyed borrowers were mainly male (50.7%), aged 35 to 44 (40.4%), living in cities of 11,000 to 100,000 residents (27.9%) and cities of 101,000 to 500,000 residents (27.3%). Most borrowers had higher education (63.4%) and net monthly income of more than PLN 2,500 to PLN 5,000 (57.8%). Borrowers mainly contracted loans for amounts between PLN 100 to 300 thousand (61.2%), in Polish zlotys (87.9%), for a period of up to 30 years (44.3%), between 2015 and 2020 (42.4%), in commercial banks (96.8%), with loan instalments of less than half of net income (69.3%).

Information presented in Table 1 shows that borrowers predominantly declared satisfaction with their housing loans (that is, more than half of the respondents chose the option that indicates satisfaction with the loans), 43.2% of the respondents declared to be *rather satisfied*, while 8.3% declared to be *very satisfied*. When evaluating the satisfaction with the housing loan ancillary products,

38.1% of the respondents declared themselves to be *neither satisfied nor dissatisfied*. 42.8% of the respondents expressed satisfaction with ancillary products in general, 8.7% selected the *very satisfied* option, and 34.1% selected the option *rather satisfied*. In the case of satisfaction with the bank's products in general, 59.1% of the respondents expressed satisfaction, 11.4% selected the *very satisfied* option, and 47.7% selected the *rather satisfied* option. The last aspect surveyed was whether the respondent declared trust in the bank in which they contracted the housing loan. The respondents mainly declared having trust in the bank (64.5% chose the option: *definitely yes* or *rather yes*).

In the next step of the study, the relationship between the customers' trust in the banks and customer satisfaction as well as the relationship between the trust and sociodemographic characteristics and credit profile of the respondents were assessed using nonparametric tests (showing the relationship in terms of each of the borrowers' characteristics considered). There were significant differences between respondents depending on the place of residence. There were no differences in terms of gender, age, education level and net income received (Table 2).

In the study, post hoc tests were applied using the Kruskal-Wallis one-way variance test for k independent samples, and the value of the V -Cramer coefficient or Spearman's rank correlation ρ coefficient between studied variables was determined.

In the case of the variable connected with the satisfaction with the bank's products in general, significant differences were observed in terms of each subgroup after performing a multiple pairwise comparison (except for the relationship between the *neither satisfied nor dissatisfied* category and the *rather dissatisfied* category). In the case of satisfaction with the bank's products in general and trust in the bank, a moderate positive correlation can be indicated (Spearman rank correlation $\rho = .583$). This means that with the increase in the declared satisfaction with the bank's products, the level of declared trust in the bank increases as well.

In the case of satisfaction with a housing loan, there were also significant differences in the level of trust in the bank within the scope of the analyzed

subgroups (except for the comparison of the *very dissatisfied* category with the *rather dissatisfied* category). In general, the higher the level of satisfaction with the housing loan, the higher the level of trust in the bank (Spearman rank correlation $\rho = .562$, indicating a moderate positive correlation). For ancillary products, there was also a positive yet weak correlation (Spearman rank correlation $\rho = .490$), indicating that satisfaction with ancillary products translates into higher levels of trust.

In terms of the place of residence, significant differences were observed between borrowers from cities of more than 500,000 residents and those living in cities and rural areas. Specifically, those from cities with more than 500,000 residents rated their level of trust in the bank lower. Borrowers from cities with 101,000 to 500,000 residents differed significantly in their declared trust in the bank relative to people from cities with 11,000 to 100,000 residents and to rural residents. Their declared trust in the bank was lower than in the compared groups. A negative yet weak correlation was recorded between trust in the bank and borrower's city size (Spearman rank correlation $\rho = -.082$), which means that the smaller the borrower's city (counted in number of residents), the lower the level of trust.

Statistically significant differences were observed in terms of the credit profile, considering the bank type, the loan period, the share of the instalment in net income, and the loan currency (Table 2). Borrowers with a loan in cooperative banks declared a higher level of trust in the bank than borrowers in commercial banks. However, a weak correlation was shown between trust in the bank and the bank type ($V = .119$).

In terms of the loan period, differences were shown between borrowers with a loan period of up to 35 years and borrowers where the declared loan period was between 15 and 10 years. Borrowers with a loan period of up to 35 years, compared to the others mentioned here, declared a lower level of trust in the bank. There was a very weak negative correlation between the level of trust in the bank and the loan period (Spearman's rank correlation $\rho = -.111$). This result means that the longer the loan period, the lower the level of trust in the bank.

In addition, the borrowers whose loan instal-

ments were less than half of their net income declared a higher level of trust in the bank. In this regard, a weak negative correlation ($V = .127$) was shown, and this means that the higher the share of the instalment in net income, the lower the level of trust in the bank. Considering the loan currency, the differences were shown between borrowers with a loan in Swiss francs and borrowers with a loan in Polish zlotys. Borrowers with a loan in Polish zlotys declared a relatively higher level of trust in the bank than those with a loan in Swiss francs. A significant yet weak correlation was noted between the loan currency and trust in the bank ($V = .166$).

Following the purpose of the article, the next stage of the study was to evaluate the relationship between satisfaction with the bank's products and the trust in the bank, considering the sociodemographic variables and the credit profiles of the respondents (control variables). Analysis of the correlation matrix between the variables preceded the actual regression analysis. To exclude the multicollinearity effect from the forthcoming estimated model, we investigated the existence of monotonic relationships between two variables. The Spearman correlation coefficient was used both for the general analysis and subgroups.

Quite strong correlations (exceeding the 0.5 level) were shown for:

- satisfaction with a housing loan and satisfaction with ancillary products (Spearman rank correlation $\rho = .59$); satisfaction with a housing loan and satisfaction with the bank's products in general ($\rho = .64$),
- satisfaction with ancillary products and satisfaction with the bank's products in general ($\rho = .60$).

In view of the strong correlation of variables relating to the respondents' satisfaction, further analysis in this scope used the variables connected with the satisfaction with the bank's products in general. This choice was made due to the highest correlation coefficient (at .60) between the explanatory variable (trust in the bank) and the variable connected with the satisfaction with the bank's products in general. Furthermore, the variable connected with the year of contracting the loan was excluded from the analysis due to its strong correlation with the variable connected with the age of the borrower (correlation $\rho = .527$).

Table 1
Descriptive Statistics for the Variables

Variables	Percentage (Frequency N)
Sociodemographic variables and credit profile variables	
Gender	
Female	49.3 (490)
Male	50.7 (503)
Age (in years)	
18 -34	21.5 (213)
35-44	40.4 (401)
45-54	23.7 (235)
55 and above	14.5 (144)
Place of residence (in thousand inhabitants)	
Village	14.2 (141)
City up to 10	5.8 (58)
City from 11 to 100	27.9 (277)
City from 101 to 500	27.3 (271)
City with over 500,000	24.8 (246)
Educational level	
Primary and/or junior high school	0.8 (8)
Essential vocational	9.1 (90)
Secondary and/or post-secondary	26.7 (265)
Higher	63.4 (630)
Net income (in thousand zloty)	
Below 2.5	9.6 (95)
Over 2.5– 5	57,8 (574)
Over 5– 7.5	20.8 (207)
Over 7.5	5.5 (55)
Refusal to answer	6.2 (62)
Amount of credit (in thousand zloty)	
Up to 100	12.1 (120)
From 100 up to 300	62.1 (617)
From 300 up to 500	21.2 (211)
Above 500	4.5 (45)
Share of the instalment in net income	
Less than half	69.3 (688)
More than half	30.7 (305)
Currency of the loan	
Polish zloty	87.9 (873)
Swiss franc	10.2 (101)
Euro	1.8 (18)
Other (pound)	0.1 (1)

Table 1
Descriptive Statistics for the Variables (Continued)

Variables	Percentage (Frequency N)
Sociodemographic variables and credit profile variables	
Loan period (in years)	
Up to 10	4.8 (48)
Up to 15	7.7 (76)
Up to 20	16.4 (163)
Up to 25	19.5 (194)
Up to 30	44.3 (440)
Borrowing year	
Up to 2008	17.3 (172)
2009 to 2014	28.5 (283)
2015 to 2020	43.4 (431)
2021 to 2022	10.8 (107)
Type of bank	
Commercial bank	96.8 (886)
Cooperative bank	3.2 (29)
Borrowers' attitudes towards the bank	
Satisfaction with the housing loan	
Very dissatisfied	7.8 (77)
Rather dissatisfied	13.3 (132)
Neither satisfied nor dissatisfied	27.5 (273)
Rather satisfied	43.2 (429)
Very satisfied	8.3 (82)
Satisfaction with the bank's products in general	
Very dissatisfied	4.5 (45)
Rather dissatisfied	9.7 (96)
Neither satisfied nor dissatisfied	26.7 (265)
Rather satisfied	47.7 (474)
Very satisfied	11.4 (113)
Satisfaction with the accompanying (ancillary) products of the loan	
Very dissatisfied	5.9 (59)
Rather dissatisfied	13.2 (131)
Neither satisfied nor dissatisfied	38.1 (378)
Rather satisfied	34.1 (339)
Very satisfied	8.7 (86)
Trust in the bank	
Definitely not	5.2 (52)
Rather not	7.7 (76)

Table 2*Results of Univariate Analysis of the Relationship Between Declared Trust in the bank and Selected Variables*

Variable	Test statistic*	df	p	Cramér's V / Spearman's ρ^{**}
Satisfaction with the bank's products in general	H = 343.55	4	< .001	.583
Satisfaction with the loan	H = 318.05	4	< .001	.562
Satisfaction with the loan ancillary products	H = 246.69	4	< .01	.490
Gender	$\chi^2 = 119263.00$	—	.349	.031
Age	H = 2.23	3	.526	.039
Place of residence	H = 9.82	4	.044	-.082
Level of education	H = 6.22	3	.101	-.033
Net income	H = 0.73	3	.867	-.029
Bank type	$\chi^2 = 8687.50$	—	.002	.119
Year of contracting the loan	H = 4.96	3	.175	.041
Loan period	H = 17.30	6	.008	-.111
Loan amount	H = 3.69	3	.297	-.051
Share of the instalment in net income	U = 87946.50	—	< .001	-.127
Loan currency	$\chi^2 = 41.73$	3	< .001	.162

Note. * χ^2 - chi-square test; U - Mann-Whitney U test; H - Kruskal-Wallis H-test.

** Cramér's V was calculated for nominal variables, whereas Spearman's rho was calculated for ordinal and continuous variables.

In addition, the Variance Inflation Factor (VIF) was determined for the variables subject to this study (Daoud, 2017). This is because the key point is that the collinearity of the explanatory variables has a negative effect on the estimation of the model. Due to collinearity with other independent variables, variables such as the loan amount and loan currency were omitted in the final model.

Subsequently, the relationship between the satisfaction with the bank's products and the trust in the bank with consideration of the sociodemographic variables and credit profile of the respondents was examined. The ordinal regression method was used for this purpose. It demonstrated a more complex dependence structure. Ordinal logistic regression analysis uses the link function to explain the effects on the explanatory ordinal categorical variable, without the assumption of normality and homogeneity of variances (Eygu & Gulluce, 2017).

Table 3 consists of the results after choosing the best-fit multivariate model based on AIC criterion

(finally, the model included a variable connected with the satisfaction with the bank's products in general, gender, level of education, share of the instalment in net income, and bank type).

The reference category in the study was made according to the interpretations determined as the first category (for the satisfaction variable, level 1 *very dissatisfied* was taken as reference, for gender *female*, for education level *elementary and/or middle school*, share of the installment in net income, level 1 *less than half* and for type of bank level 1 *commercial bank* was taken as reference). The significance level was found to be statistically important when the p values were less than .05. Furthermore, when the independent variables that explain the expressions of trust in the bank are examined, there is a meaningful relationship for four categories in the case of satisfaction with the bank's product in general, one category of the share of the installment in net income, and one category of bank type. In such a case, ordinal regression mode

was introduced, and odds ratios were calculated for consecutive variables. The odds ratio is understood as the probability that a phenomenon will occur to the probability that a phenomenon will not occur. When the odds ratio > 1 , an increase in a variable by a unit increases the chances that a phenomenon will occur. When the odds ratio < 1 , an increase in a given variable by a unit decreases the chances that a given phenomenon occurs. To ensure the model fit, McFadden's adjusted pseudo R^2 was calculated. A value of .18 was obtained. According to McFadden (1977), values of .2-.4 indicate an excellent model fit, as the values of this pseudo R^2 are considerably lower compared to the ordinary R^2 .

For the variable related to the satisfaction with the bank's products in general at each of the analyzed levels, the p value is lower than .05, and the results are statistically significant. Considering the satisfaction with the bank's products in general at level 2 (*rather dissatisfied*), the obtained OR of 4.695 means that the odds of having higher trust in the bank are more than 4 times higher for individuals who are rather dissatisfied compared to those in the reference category, assuming all other variables are held constant. For the variable presenting the satisfaction with the bank's products in general at level 3 (*neither satisfied nor dissatisfied*), the obtained odds ratio means the odds of having higher trust in the bank are more than 12 times higher for individuals who are neither satisfied nor dissatisfied compared to those in the reference category, assuming all other variables are held constant. For the variables that presents the satisfaction with the bank's products in general at level 4 (*rather satisfied*), and level 5 (*very satisfied*), the obtained odds ratios means that the odds of having higher trust in the bank are higher (for individuals who are *rather satisfied* and for individuals who are *very satisfied*) compared to those in the reference category, assuming all other variables are held constant. These results suggest that customer satisfaction is key to improving the level of trust in banks.

For the gender variable, the change from female to male decreases the odds of moving to a higher category in the dependent variable (trust in bank) (OR is 0.805, and we can add that this change reduces the chance of moving to a higher category for

trust by 19.5%). Since the p is greater than .05, the result is not statistically significant.

For the variable related to the level of education at each of the levels analyzed, the p value is greater than .05, and the results are not statistically significant. At level 2 (*essential vocational*), change from level 1 (*elementary and/or middle school*, i.e. reference level) decreases the odds of moving to a higher category in the dependent variable (OR < 1). With successive levels of the education level variable, that is, level three (*secondary and/or post-secondary*), as well as level 4 (*higher*), we obtain the same conclusion (in each of these cases, the OR < 1 . Table 3).

For the share of the installment in net income, moving from level 1 (*less than half*) to level 2 (*more than half*) decreases the odds of moving to a higher category in the dependent variable by 30.8%. Since the p is less than .05, the result is statistically significant. For the bank type, moving from level 1 (*commercial bank*) to level 2 (*cooperative bank*) increases the odds of moving to a higher category in the dependent variable (the odds ratio is 2.287 and we can add that this change increases the chance of moving to a higher category for trust by 128,7%). Since the p is less than .05, the result is statistically significant.

The research hypotheses included in the introduction were partially positively verified. Hypothesis 1, which stated that there is a statistically significant positive relationship between the satisfaction with the bank's products in general and the customer trust in the bank, was positively verified. This is proven by the following reasoning. The results of the nonparametric Kruskal-Wallis H test indicated that customer satisfaction with the bank's products significantly differentiates the level of declared trust in the bank (see Table 2). A statistically significant moderate positive relationship was observed. This means that with the increase in the declared satisfaction with the bank's products, the level of declared trust in the bank increases as well. The results of the ordinal regression model confirmed these findings. Customer satisfaction is crucial to inspiring trust, and the more satisfied the customer, the greater the chance of increasing the level of trust (see Table 3). Hypothesis 2, that the sociodemographic and economic characteristics (gender, age, place of residence, level of education, net income)

Table 3
Result of Ordinal Regression Model for Trust in the Bank

Dependent Variable	Value	Odds Ratio (OR)	2.5 %	97.5 %	P
Satisfaction with the bank's products in general = 2	1.546	4.694	2.38	9.259	< .001
Satisfaction with the bank's products in general = 3	2.563	12.97	6.977	24.11	< .001
Satisfaction with the bank's products in general = 4	4.290	72.94	38.630	137.7	< .001
Satisfaction with the bank's products in general = 5	6.012	408.10	192.70	864.60	< .001
Gender = 2	-0.217	0.805	0.630	1.029	.083
Level of education = 2	-0.772	0.462	0.107	1.998	.301
Level of education = 3	-0.222	0.801	0.192	3.338	.761
Level of education = 4	-0.480	0.619	0.150	2.554	.507
Share of the instalment in net income = 2	-0.369	0.692	0.530	0.902	.007
Bank type = 2	0.827	2.287	1.071	4.884	.033

of customers with housing loans significantly differentiate the statistically declared level of trust in the bank, was verified negatively. The results of relationship analysis conducted using nonparametric statistical tests (Mann- Witney *U* test and Kruskal-Wallis *H* Test) indicated that the considered variables, except for the place of residence, did not significantly differentiate trust among customers (see Table 2). The results of the ordinal regression analysis confirmed these findings (i.e. sociodemographic and economic variables did not differentiate trust in the bank. See Table 3). Hypothesis 3, that the credit profile parameters (i.e., bank type, year of contracting the loan, loan term, loan amount, share of instalment in net income, and loan currency) differentiate the declared level of trust that the customers with a housing loan put in banks, was partially positively verified. The results of the relationship analysis conducted using non-parametric statistical tests (Mann- Witney *U* test and Kruskal- Wallis *H* Test), indicated that the listed credit profile parameters significantly differentiated trust in the bank, excluding the loan amount and the year of contracting the loan (see Table 2). The results of regression analysis of the respondents' credit profile showed that the level of trust was significantly differentiated by only some variables (i.e. the share of instalment in income and the bank type i.e. commercial, cooperative. See Table 3).

5. Conclusions

The aspects of satisfaction with the products offered by banks and trust in banks considered in this study are up-to-date and are subject to the ongoing discussion in scientific periodicals regarding the shape and importance of the issue in the economy. The active participation of consumers as market contributors in economic and social life requires constant research of their behavior.

The purpose of the study was achieved by presenting theoretical and empirical analyses on the relationship between customer satisfaction and trust in banks. Through own research, the relationship between satisfaction with bank's products and customer trust was evaluated with consideration of the customers' sociodemographic characteristics and credit profiles. The analysis shows that the surveyed borrowers had positive attitudes towards their banks. Most respondents declared trust in their banks and satisfaction with their housing loans and the bank's products in general.

It is important to highlight the limitations of the survey and potential directions for future research. The tool used (the survey questionnaire) can be expanded to include other factors that shape the satisfaction and trust of those contracting housing loans, as well as principles referring to ensuring protection to borrowers on the market. In addition, extending the analysis to other countries appears to

be an interesting direction for further research.

In conclusion, satisfaction is an important factor that affects the sense of trust, which is necessary to form loyalty among bank customers. These implications are important for the safety and stability of the banking sector, but also for the entire economy. The research findings can be a source of knowledge for banks and their customers. It is necessary to take measures that lead to earning customer satisfaction, including constant monitoring of customer perceptions. In this case, it is important to analyze not only factors that characterize the sociodemographic profile of customers, but also individual opinions based on their experiences.

References

- Acharya, V. V., & Richardson, M. (2009). Causes of the financial crisis. *A Journal of Politics and Society*, 21(2–3), 195–210. <https://doi.org/10.1080/08913810902952903>
- Ackermann, J. (2008). The subprime crisis and its consequences. *Journal of Financial Stability*, 4, 329–337. <https://doi.org/10.1016/j.jfs.2008.09.002>
- Ahmed, N. (2023). Factors affecting customer satisfaction towards mobile banking. *Education Management Review (EMR)*, 2(1), 18–34. <https://emr-journal.com/index.php/mpub/article/view/22>
- Al Qaisi, F., & Alrosan, M. (2020). Measuring customers satisfaction of Islamic banking sector in Jordan. *Humanities and Social Sciences Letters*, 8(3), 310–322. <https://doi.org/10.18488/journal.73.2020.83.310.322>
- Algan, Y., & Cahuc, P. (2013). Trust and growth. *Annual Review of Economics*, 5(1), 521–549. <https://doi.org/10.1146/annurev-economics-081412-102108>
- Allen, F., Qian, Y., Tu, G., & Yu, F. (2019). Entrusted loans: A close look at China's shadow banking system. *Journal of Financial Economics*, 133(1), 18–41. <https://doi.org/10.1016/j.jfineco.2019.01.006>
- Anjalika, W. P. W., & Priyanath, H. M. S. (2018). Effect of service quality on customer satisfaction: An empirical study of customers who have bank accounts in both public and private banks in Sri Lanka. *International Journal of Marketing and Technology*, 8(1), 11–36.
- Armstrong, A. (2012). Restoring trust in banking. *National Institute Economic Review*, 221(1), R4–R10. <https://doi.org/10.1177/002795011222100111>
- Arszulowicz, N. (2020). Rola satysfakcji klienta we współczesnym przedsiębiorstwie na przykładzie przedsiębiorstw w województwie podlaskim [Role of customer satisfaction in contemporary enterprises on the example of enterprises in Podlaskie Voivodeship]. In J. Kubiczek & A. Borcuch (Eds.), *Ekonomia i finanse w XXI wieku: Wyzwania dla zglobalizowanego świata* (pp. 49–68). Wydawnictwo ArchaeGraph.
- Bakanauskas, A. P., Kondrotienė, E., & Puksas, A. (2020). The theoretical aspects of attitude formation factors and their impact on health behaviour. *Management of Organisation: Systematic Research*, 83(1), 15–36. <https://doi.org/10.1515/mosr-2020-0002>
- Bar-Gill, O. (2009). The law, economics, and psychology of subprime mortgage contracts. *Cornell Law Review*, 94(5), 1073–1146. <http://scholarship.law.cornell.edu/clr/vol94/iss5/7>
- Bearden, W. O., & Teel, J. E. (1983). Selected determinants of consumer satisfaction and complaint reports. *Journal of Marketing Research*, 20(1), 21–28. <https://doi.org/10.2307/3151408>
- Bedyńska, S., & Brzezicka, A. (Eds.). (2007). *Statystyczny drogowskaz: Praktyczny poradnik analizy danych w naukach społecznych na przykładach z psychologii* [Statistical signpost: A practical guide to data analysis in the social sciences using examples from psychology]. Wydawnictwo SWPS Academica.
- Bernardelli, M., Korzeb, Z., Niedziółka, P., & Waliszewski, K. (2023). Channels for the impact of the war in Ukraine on the commercial banking sector in Poland—First results of the study. *Contemporary Economics*, 17(2), 234–249. <https://doi.org/10.5709/ce.1897-9254.504%0A>
- Bhat, S. A., Darzi, M. A., & Parrey, S. H. (2018). Antecedents of customer loyalty in banking sector: A mediational study. *Vikalpa*, 43(2), 92–105. <https://doi.org/10.1177/0256090918774697>
- Bilan, Y., Brychko, M. M., Buriak, A. V., & Vasylieva, T. A. (2019). Financial, business and trust cycles: The issues of synchronization. *Zbornik radova Ekonomskog fakulteta u Rijeci*, 37(1), 113–138. <https://doi.org/10.18045/zbfri.2019.1.113>
- Bülbül, D. (2013). Determinants of trust in banking networks. *Journal of Economic Behavior & Organization*, 85, 236–248. <https://doi.org/10.1016/j.jebo.2012.02.022>
- Caruana, A. (2002). Service loyalty: The effects of service quality and the mediating role of customer satisfaction. *European Journal of Marketing*, 36(7/8), 811–828. <https://doi.org/10.1108/03090560210430818>
- Chan, L. K., Hui, Y. V., Lo, H. P., Tse, S. K., Tso, G. K., & Wu, M. L. (2003). Consumer satisfaction index: New practice and findings. *European Journal of Marketing*, 37(5/6), 872–909. <https://doi.org/10.1108/03090560310465189>
- Chu, P. Y., Lee, G. Y., & Chao, Y. (2012). Service quality, customer satisfaction, customer trust, and loyalty in an e-banking context. *Social Behavior and Personality: An International Journal*

- nal, 40(8), 1271–1283. <https://doi.org/10.2224/sbp.2012.40.8.1271>
- Czechowska, I. D. (2009). Ochrona konsumenta rynku usług bankowych [Consumer protection on a bank services market]. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Ekonomiczne Problemy Usług*, 38, 407–413. <http://yadda.icm.edu.pl/yadda/element/bwmeta1.element.ekon-element-000171367821?q=bwmeta1.element.ekon-element-8fcd41a0-ad72-3822-bf76-442e885bf5c2>
- Czechowska, I. D. (2015). Kodyfikacja standardów etycznych w instytucjach bankowych [Codification of ethical standards in banking institutions]. *Bezpieczny Bank*, 1(58), 97–117. <https://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-e8eba642-ccf2-4d5e-ac64-252a7838ca6f>
- Dandis, A. O., Wright, L. T., Wallace-Williams, D. M., Mukattash, I., Al Haj Eid, M., & Cai, H. (2021). Enhancing consumers' self-reported loyalty intentions in Islamic banks: The relationship between service quality and the mediating role of customer satisfaction. *Cogent Business & Management*, 8(1), 1892256. <https://doi.org/10.1080/23311975.2021.1892256>
- Daoud, J. I. (2017). Multicollinearity and regression analysis. *Journal of Physics: Conference Series*, 949(1), 012009. <https://doi.org/10.1088/1742-6596/949/1/012009>
- Djankov, S., McLiesh, C., & Shleifer, A. (2007). Private credit in 129 countries. *Journal of Financial Economics*, 84(2), 299–329. <https://doi.org/10.1016/j.jfineco.2006.03.004>
- Eygu, H., & Gulluce, A. C. (2017). Determination of customer satisfaction in conservative concept hotels by sequential logistic regression analysis. *Journal of Financial Risk Management*, 6, 269–284. <https://doi.org/10.4236/jfrm.2017.63020>
- Falkowski, A., & Tyska, T. (2009). *Psychologia zachowań konsumenckich* [Psychology of consumer behavior]. Gdańskie Wydawnictwo Psychologiczne.
- Faqih, K. M., & Jaradat, M. I. R. M. (2015). Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. *Journal of Retailing and Consumer Services*, 22, 37–52. <https://doi.org/10.1016/j.jretconser.2014.09.006>
- Fay, M. P., & Proschan, M. A. (2010). Wilcoxon-Mann-Whitney or t-test? On assumptions for hypothesis tests and multiple interpretations of decision rules. *Statistics Surveys*, 4, 1–39. <https://doi.org/10.1214/09-ss051>
- Frankowska, E. (2011). Badanie stopnia zadowolenia klientów z jakości usług [Research on the client's satisfaction concerning service quality]. *Zeszyty Naukowe SGSP Szkoły Głównej Służby Pożarniczej*, 41, 203–217. <http://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-5b2a03c5-e120-481b-b7ab-56ebbd6953de>
- Fukuyama, F. (1997). *Zaufanie: Kapitał społeczny a droga do dobrobytu* [Trust. Social capital and the path to prosperity]. Wydawnictwo Naukowe PWN.
- Geebren, A., & Jabbar, A. (2021). Factors that influence customer trust and satisfaction in mobile banking: A problematization approach. *International Journal of E-Business Research (IJEER)*, 17(3), 66–82. <https://doi.org/10.4018/ijebr.2021070105>
- Giemza, M., & Materna, M. (2015). Wybrane czynniki determinujące satysfakcję klienta z usług banku [Selected factors determining customer satisfaction with bank services]. In U. Balon & T. Sikora (Eds.), *Funkcjonowanie i doskonalenie zarządzania: aspekty społeczne*. [Functioning and improving management: social aspects]. (pp. 57–73). Wydawnictwo Naukowe PTTŻ Polskie Towarzystwo Technologów Żywności.
- Gonçalves, H. M., & Sampaio, P. (2012). The customer satisfaction-customer loyalty relationship: Reassessing customer and relational characteristics moderating effects. *Management Decision*, 50(9), 1509–1526. <https://doi.org/10.1108/00251741211266660>
- Guilford, J. P. (1965). *Fundamental statistics in psychology and education*. McGraw-Hill, New York.
- Haron, R., Abdul Subar, N., & Ibrahim, K. (2020). Service quality of Islamic banks: Satisfaction, loyalty, and the mediating role of trust. *Islamic Economic Studies*, 28(1), 3–23. <https://doi.org/10.1108/ies-12-2019-0041>
- Hellwig, M. F. (2009). Systemic risk in the financial sector: An analysis of the subprime-mortgage financial crisis. *De Economist*, 157, 129–207. <https://doi.org/10.2139/ssrn.1309442>
- Homburg, C., & Giering, A. (2001). Personal characteristics as moderators of the relationship between customer satisfaction and loyalty—An empirical analysis. *Psychology & Marketing*, 18(1), 43–66. [https://doi.org/10.1002/1520-6793\(200101\)18:1<43::AID-MAR3>3.0.CO;2-I](https://doi.org/10.1002/1520-6793(200101)18:1<43::AID-MAR3>3.0.CO;2-I)
- Hoq, M. Z., Sultana, N., & Amin, M. (2010). The effect of trust, customer satisfaction and image on customers' loyalty in Islamic banking sector. *South Asian Journal of Management*, 17(1), 70–93. <https://doi.org/10.2139/ssrn.1851427>
- Hunt, S. D. (2012). Trust, personal moral codes, and the resource-advantage theory of competition: Explaining productivity, economic growth, and wealth creation. *Contemporary Economics*, 6(2), 4–19. <https://doi.org/10.5709/CE.1897-9254.38>
- Hurley, R., Gong, X., & Waqar, A. (2014). Understanding the loss of trust in large banks. *International Journal of Bank Marketing*, 32(5), 348–366. <https://doi.org/10.1108/IJBM-01-2014-0003>

- Josipović, T. (2014). Consumer protection in EU residential mortgage markets: Common EU rules on mortgage credit in the Mortgage Credit Directive. *Cambridge Yearbook of European Legal Studies*, 16, 223–253. <https://doi.org/10.1017/S152888700002603>
- Kavita, P., Wamitu, S., & Nzomoi, J. (2022). Relationship between bank customer retention strategies and customer satisfaction in commercial banks in Machakos Town. *European Journal of Business and Strategic Management*, 7(2), 23–38. <https://doi.org/10.47604/EJBMSM.1640>
- Kieźel, E., & Smyczek, S. (2013). Model zachowań prosumenckich konsumentów na rynku usług finansowych [Model of prosumer behaviour of consumers in the market for financial services]. *Konsumpcja i Rozwój*, 2(5), 94–107. <http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-67a34b36-3914-435a-bdd8-1955ae4be6e6>
- Kieźel, M. (2015). Zaufanie konsumentów do banków detalicznych oraz jego determinanty w dobie kryzysu w zintegrowanej przestrzeni europejskiej [Consumers' confidence in retail banks and its determinants in the epoch of crisis in the integrated European space]. *Handel Wewnętrzny*, 3(356), 100–109. <http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-cac0ad5-3435-414d-bccf-ec1e28715ae0>
- Knell, M., & Stix, H. (2015). Trust in banks during normal and crisis times: Evidence from survey data. *Economica*, 82, 995–1020. <https://doi.org/10.1111/ecca.12162>
- Kowalewska, E. (2016). Szczególna rola kredytów mieszkaniowych na rynku usług bankowych [The special role of housing loans on the banking services market]. In E. Kowalewska (Ed.), *Współczesne problemy bankowości i sektora finansów publicznych* [Contemporary problems of banking and the public finance sector]. (pp. 81–96). Uniwersytet Szczeciński.
- Leninkumar, V. (2017). The relationship between customer satisfaction and customer trust on customer loyalty. *International Journal of Academic Research in Business and Social Sciences*, 7(4), 450–465. <https://doi.org/10.6007/IJARBS/v7-i4/2821>
- Malarska, A. (2005). *Statystyczna analiza danych wspomagana programem SPSS* [Statistical analysis of data enhanced by SPSS program]. SPSS Polska.
- Marinković, V., Đorđević, A., & Kalinić, Z. (2020). The moderating effects of gender on customer satisfaction and continuance intention in mobile commerce: A UTAUT-based perspective. *Technology Analysis & Strategic Management*, 32(3), 306–318. <https://doi.org/10.1080/09537325.2019.1655537>
- McFadden, D. (1977). Quantitative methods for analyzing travel behavior of individuals: Some recent developments (*Cowles Foundation Discussion Paper No. 707*). Yale University. <https://elischolar.library.yale.edu/cowles-discussion-paper-series/70>
- Mian, A., & Sufi, A. (2008). The consequences of mortgage credit expansion: Evidence from the 2007 mortgage default crisis. *NBER Working Paper No. 13936*. National Bureau of Economic Research. <https://doi.org/10.3386/w13936>
- Michalczyk, G. (2013). *Zasoby niematerialne jako czynnik wartości przedsiębiorstwa: Luka informacyjna sprawozdawczości finansowej* [Intangible resources as a factor of enterprise value: Financial reporting information gap]. Wydawnictwo Uniwersytetu w Białymstoku. <https://repozytorium.uwb.edu.pl/jspui/handle/11320/13604>
- Moraru, A. D., & Ilie, M. (2021). Towards sustainability in banking services development: Customer satisfaction with banking services—Influences and perspectives. *Ovidius University Annals, Economic Sciences Series*, 21(2), 842–848. <https://stec.univ-ovidius.ro/html/anale/RO/2021-2/Section%204/38.pdf>
- Morrone, A., Tontoranelli, N., & Ranuzzi, G. (2009). How good is trust? Measuring trust and its role for the progress of societies (*OECD Statistics Working Papers*). OECD Publishing. <https://doi.org/10.1787/220633873086>
- Murè, P., Spallone, M., Mango, F., Marzioni, S., & Bitucci, L. (2021). ESG and reputation: The case of sanctioned Italian banks. *Corporate Social Responsibility and Environmental Management*, 28(1), 265–277. <https://doi.org/10.1002/csr.2047>
- Nowakowski, K. (2008). Dimensions of trust—The problem of negative trust in Poland [Wymiary zaufania i problem zaufania negatywnego w Polsce]. *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, 70(1), 213–233. <https://repozytorium.amu.edu.pl/handle/10593/5062>
- Nugraha, K. S. W. (2021). Internet banking service quality: Building satisfaction and customer trust. *International Journal of Social Science and Business*, 5(1), 52–59. <https://doi.org/10.23887/ijssb.v5i1.31861>
- Ostertagová, E., Ostertag, O., & Kováč, J. (2014). Methodology and application of the Kruskal-Wallis test. *Applied Mechanics and Materials*, 611, 115–120. <https://doi.org/10.4028/www.scientific.net/AMM.611.115>
- Ostrowska, I. (2010). *Model kształtowania lojalności konsumentów w stosunku do marki na podstawie wybranych produktów konsumpcyjnych* [Consumer loyalty formation model toward a brand based on selected consumer products]. Wydawnictwo Naukowe Uniwersytetu Szczecińskiego. <https://depot.ceon.pl/handle/123456789/11576>
- Penc, J. (2011). *Zachowania organizacyjne w przedsiębiorstwie: Kreowanie twórczego nastawienia i aspiracji* [Organizational behavior in the enterprise: Creating a creative attitude and aspira-

- tions]. Oficyna Ekonomiczna Wolters Kluwer.
- Perry, V. G., & Blumenthal, P. M. (2012). Understanding the fine print: The need for effective testing of mandatory mortgage loan disclosures. *Journal of Public Policy & Marketing*, 31(2), 131–143. <https://doi.org/10.1509/jppm.12.055>
- Półtorak, B. (2019). Development of the regulation of consumer protection instruments on the Polish mortgage market. *Studia Prawno-Ekonomiczne*, 108, 281–298. <https://doi.org/10.26485/SPE/2018/108/16>
- Radomir, L., Plăiaș, I., & Wilson, A. (2015). Bank service and relationship quality as drivers of consumers' attitudinal loyalty. *Romanian Journal of Marketing*, 2, 80–92. https://www.researchgate.net/publication/283210726_Bank_service_and_relationship_quality_as_drivers_of_consumers'_attitudinal_loyalty
- Rafiq, M. Z., Jun, J. C., Ali, R., Majeed, M. K., & Mohsin, M. (2020). Impact of corporate image, switching costs and customer trust on customer satisfaction: Evidence from listed banking sector. *SMART Journal of Business Management Studies*, 16(1), 26–34.
- Raza, S. A., Umer, A., Qureshi, M. A., & Dahri, A. S. (2020). Internet banking service quality, e-customer satisfaction and loyalty: The modified e-SERVQUAL model. *The TQM Journal*, 32(6), 1443–1466. <https://doi.org/10.1108/TQM-02-2020-0019>
- Rizan, M., Warokka, A., & Listyawati, D. (2014). Relationship marketing and customer loyalty: Do customer satisfaction and customer trust really serve as intervening variables? *Journal of Marketing Research & Case Studies*, 2014, 1–12. <https://doi.org/10.5171/2014.724178>
- Rudzewicz, A. (2018). *Wpływ zaufania do marki na zachowania konsumentów* [The impact of trust in the brand on consumer behavior]. Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego.
- Santos, F., Pache, A. C., & Birkholz, C. (2015). Making hybrids work: Aligning business models and organizational design for social enterprises. *California Management Review*, 57(3), 36–58. <https://doi.org/10.1525/cmr.2015.57.3.36>
- Seiler, V., Rudolf, M., & Krume, T. (2013). The influence of socio-demographic variables on customer satisfaction and loyalty in the private banking industry. *International Journal of Bank Marketing*, 31(4), 235–258. <https://doi.org/10.1108/IJBM-10-2012-0101>
- Trif, S. M. (2013). The influence of overall satisfaction and trust on customer loyalty. *Management & Marketing*, 8(1), 109–128. <https://www.proquest.com/scholarly-journals/influence-overall-satisfaction-trust-on-customer/docview/1348582335/se-2>
- Singh, N. U., Roy, A., & Tripathi, A. K. (2013). *Non-parametric tests: Hands on SPSS*. ICAR Research Complex for NEH Region.
- Śleszyńska-Świdarska, A. (2017). *Zachowania polskich konsumentów w warunkach globalnego kryzysu gospodarczego* [Behavior of Polish consumers in conditions of the global economic crisis] (Doctoral dissertation, University of Białystok). <http://hdl.handle.net/11320/6767>
- Sobczyk, G. (2018). *Zachowania konsumentów wobec nowych trendów konsumpcji – wyniki badań* [Consumer behavior towards new consumption trends: Research results]. *Annales Universitatis Mariae Curie-Skłodowska, Sectio H – Oeconomia*, 52(1), 171–180. <https://doi.org/10.17951/h.2018.52.1.171>
- Spanos, A. (2002). *Parametric versus non-parametric inference: Statistical models and simplicity*. In A. Zellner, H. A. Keuzenkamp, & M. McAleer (Eds.), *Simplicity, inference and modelling: Keeping it sophisticatedly simple* (pp. 181–206). Cambridge University Press. <https://doi.org/10.1017/CBO9780511493164.011>
- Stopczyński, A. R., & Ziemba, M. (2021). Rebuild trust or stigmatize unfair practices: How can consumer protection institutions shape prosocial attitudes of banks? *Social Entrepreneurship Review*, 1, 45–57. <https://doi.org/10.15678/SER.2021.1.03>
- Szopiński, T. (2021). Impact of consumer awareness on switching behavior in banking. *Contemporary Economics*, 15(4), 467–478. <https://doi.org/10.5709/ce.1897-9254.461>
- van Esterik-Plasmeijer, P. W., & Van Raaij, W. F. (2017). Banking system trust, bank trust, and bank loyalty. *International Journal of Bank Marketing*, 35(1), 97–111. <https://doi.org/10.1108/IJBM-12-2015-0195>
- Wallison, P. J. (2009). Cause and effect: Government policies and the financial crisis. *Critical Review: A Journal of Politics and Society*, 21(2–3), 365–376. <https://doi.org/10.1080/08913810902934158>
- Walsh, G., Evanschitzky, H., & Wunderlich, M. (2008). Identification and analysis of moderator variables: Investigating the customer satisfaction-loyalty link. *European Journal of Marketing*, 42(9–10), 977–1004. <https://doi.org/10.1108/03090560810891109>
- Wiktorowicz, J., Grzelak, M. M., & Grzeszkiewicz-Radulska, K. (2020). *Analiza statystyczna z IBM SPSS Statistics* [Statistical analysis with IBM SPSS Statistics]. Wydawnictwo Uniwersytetu Łódzkiego. <https://doi.org/10.18778/8220-387-5>
- Winstanley, M. (1996). What drives customer satisfaction in commercial banking? *Commercial Lending Review*, 12, 36–42.
- World Bank. (2017). *Good practices for financial consumer protection*. <https://doi.org/10.1596/28996>
- Zuchowski, I., & Brelik, A. (2007). Wybrane zagadnienia teorii zachowania konsumenta [Selected issues of the theory of consumer behavior]. *Zeszyty Naukowe Ostrołęckiego 21*, 207–214.