

# Application of European performance satisfaction index, net promoter score and customer loyalty ratio indicators to measure the correlation between client satisfaction and loyalty in relation to banking services

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## ABSTRACT

Loyal clients often make repeated purchases; they are less sensitive to the price and more willing to recommend a brand to others. Moreover, retaining loyal clients is much less expensive than acquiring new ones, which makes establishing long-term relationships with clients one of the key elements of a company's marketing strategy. Clients' loyalty and satisfaction are linked to a client's positive perception of a service, i.e. their satisfaction. Satisfaction may lead to loyalty, but it does not guarantee it. Literature review shows that client loyalty, unlike satisfaction, is not only a temporary condition but also an attitude requiring additional factors: trust, relationships, brand identification and long-term benefits. The Client may be satisfied with the service, but only permanent, positive experiences build proper attachment to the brand. The article describes the client's satisfaction and loyalty and analyses the correlation between them. The article aims to use the EPSI (European performance satisfaction index), NPS (net promoter score) and CLI (customer loyalty ratio) indicators to verify the strength and direction of the relationship between satisfaction and loyalty of clients of the selected service type.

## INTRODUCTION

Competing by caring for client satisfaction and loyalty is one of the most important and durable strategies for establishing a competitive advantage. Companies that focus not only on acquiring new clients but primarily on maintaining them gain stability and development opportunities. A company that can establish a strong relationship with a client is at a lower risk of losing clients, who may select cheaper or more aggressive competition. A loyal client is a source of positive information about an organisation. Such a client becomes a more credible spokesperson than a company employee. In addition, loyal clients are more likely to purchase other products and services from the same company, thus increasing the average value of an order.

A service is of high quality to the extent that it meets or exceeds clients' expectations (Grönroos,

1990; Zeithaml et al., 1990). If it exceeds them, the client is satisfied, but is he loyal? In the case of services, the relationship between satisfaction and loyalty is significant due to their specific nature. Parasuraman et al. (Parasuraman et al., 1988) defined the features of the services distinguishing them from the products: non-material nature, indivisibility of production and consumption or co-occurrence, heterogeneity or variability. The efforts of each organisation – in particular, the service – should be focused on meeting clients' expectations and offering the highest level of services.

In addition, the quality of services allows users to learn about the (positive or negative) perception of the service they have received, which is necessary to improve user satisfaction and enhance the organisation's competitiveness and profitability. According to researchers (Rust et al., 1994; Parasuraman et al., 1998) Quality

is more objective (albeit also largely subjective) compared to satisfaction, as it refers to compliance with specific standards or promises, while satisfaction of clients is the result of comparing their expectations with factual experience (such as customer service, product, delivery), as such it is retrospective in nature – the client assesses after the fact, based on their own previous experience and expectations (Rust, 1994; Parasuraman et al., 1988). In the case of satisfaction, the emotional aspect is of greater significance compared to the cognitive dimension. Figure 1 shows the relationship between factors impacting clients' loyalty.

The basis for pursuing client loyalty is the positive perception of the service, which is related to an appropriate level of quality. Positive perception of a service causes client's satisfaction, and a satisfied client is willing to return to a company which meets its expectations regarding a product or service. In cases where a company meets the client's expectations (for instance through product quality, client service, price or timeliness), the client has less reasons to search for an alternative as their needs are already met. The figure serves as a proof that satisfaction with a product or service is an essential factor which determines loyalty, however it may not be sufficient because loyalty is influenced by client's previous experience (including the number of such experiences), market competitions which can offer better conditions and emotions that the company has limited influence on.

Satisfied clients are an effective and cheaper form of "word-of-mouth marketing" compared to traditional methods, allowing to acquire new buyers through recommendations. Loyal clients, who value brands, are often willing to pay a higher price. They are less likely to move to competition, reducing the loss of clients and the need to invest in acquiring new ones. Positive client experience increases brand value and its reputation on the market (Muchnowska, 2006). A company which invests in client satisfaction to build long-term, profitable relationships with clients creates a strong brand, protects itself against loss of market shares.

The analysis of literature research shows that satisfaction is not a sufficient element influencing loyalty, but there is no research showing the measurable value of this influence. The aim of the article is to quantify the relationship between a recognised satisfaction index (EPSI) and two loyalty measures (NPS and CLR) using primary survey data collected in 2023–2025.

## BACKGROUND

The concept of client satisfaction is widely defined in literature. Kotler states that client satisfaction means the "degree in which the perceived characteristics of the product correspond to the expectations of the buyer" (Kotler, 1994). Hill defines it as "(...) a reflection of the extent to which the complete product offered by the organisation meets the collective needs of a client" (Hill, 2003). Drapińska believes that satisfaction is a fundamental and critical component of relationships between partners (Drapińska, 2011). Mazurek-Łopacińska emphasizes the role of emotions by defining satisfaction as an "emotional response to comparative processes launched by the client, by comparing their experiences and experiences after consuming a product or using service with certain expectations, individual standards or a specific evaluation model" (Mazurek-Łopacińska, 2003). Marciniak (2000) and Lisch (2014) emphasize the role of emotions in feelings of satisfaction. All definitions explaining the term "client satisfaction" mean that satisfaction involves the feelings associated with the client's experience after receiving a product or a service. Client satisfaction is crucial for creating brand loyalty (Skowron, 2010). Satisfied clients are more likely to often return to the company,

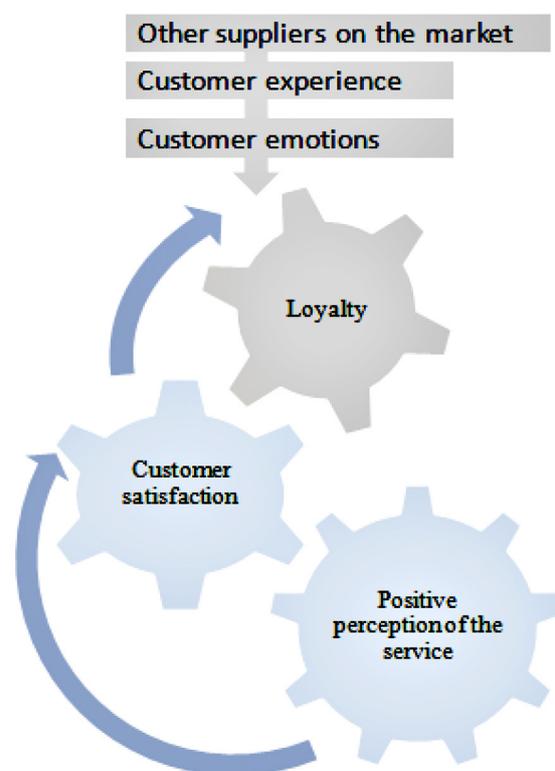


Figure 1. Factors affecting client loyalty

make more purchases and recommend the company to others. Satisfaction with the service increases the likelihood that a client will use the company's offer and become loyal. Currently, clients (Ingaldi, 2018) who want to use its services and purchase its products strongly influence the competitiveness of organisations competing in the marketplace. At this point, mentioning the need to assess customer satisfaction seems worthwhile. The degree of satisfaction is determined by a summary of product characteristics a consumer notices in line with their pre-existing expectations (Gołab-Andrzejak, 2015). Satisfaction is also "a client's positive or negative feeling in relation to the value they have received as a result of using a specific product offer in a specific situation" (Woodruff, 1996). Satisfaction is the client's response to the received value. If the experience aligns with the expectations, it is referred to as "compatibility" while satisfaction remains neutral. Dissatisfaction (negative non-compliance) causes frustration, disappointment and client's lack of interaction with the company, which may ultimately lead to the loss of the client and other, negative consequences, such as bad opinions or critical perception of the brand. The value is the difference between the client's expectations and what have they received (Figure 2).

Client satisfaction measurements date back to the 1970s of the 20th century. Companies began to notice the need to understand how clients perceive their products and services. Systematic analysis of client feedback provides feedback but is also a key element of business strategy. Quantitative methods used to analyse client satisfaction were developed in the 1980s: Likert's scales, regression analysis, SERVQUAL models.

### Loyalty measurement

Client satisfaction should not be confused with loyalty. Newman defines it as "(...) repeated purchases of only a single brand, while not considering purchasing other brands" (Newman,

1973) while Pearson defines it as "(...) a positive attitude towards the company and a commitment to purchasing a product of a given company and recommending it to other people" (Pearson, 1996). Casydy and Wymer propose another definition "the feeling of committed attachment to the object of loyalty and not repeated commercial transactions" (Casydy and Wymer, 2016).

Dick's and Basu's model indicate towards the existence of three groups of factors in the process of establishing consumer loyalty (Figure 3) which stimulate the development of loyalty attitudes (Fazio, 1990; Dick, 1994):

- cognitive factors, such as cognitive factors (their effect is, for instance brand awareness),
- affective, emotional (e.g. creating feelings towards the brand),
- competitive, behavioural (intentions to repeat purchases and recommend brands to others).

It seems that loyalty begins on a cognitive level, deepens on an emotional level, and manifests itself on a behavioural level. That is true in many cases, but not always. Sometimes, clients behave loyally and often purchase but do not feel emotional attachment. In some cases, clients have positive feelings towards the brand and consider it the best, but they refrain from making regular purchases, e.g., luxury brands.

Emotional loyalty has the most significant influence on decisions. Emotional attachment minimizes the client's vulnerability to competition (e.g. discounts, lower prices). Such clients often become brand ambassadors – recommend it to others, defend it in crises, and even 'forgive' mistakes. In some cases, a client with emotional loyalty will remain loyal to the company even if competition's offer is more attractive. Behavioural loyalty, which translates to financial results, may be 'dishonest' when a client regularly purchases a product, only because of the lack of an alternative, either out of habit or out of fear of changes.

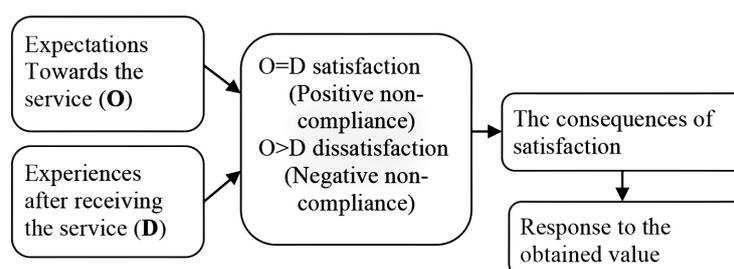


Figure 2. The theory of customer satisfaction

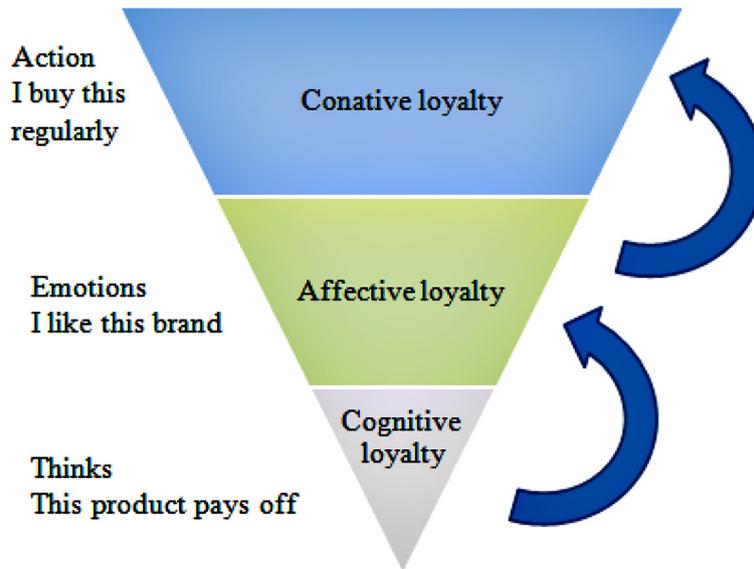


Figure 3. Importance of types of loyalty for success of a brand

Strong conative loyalty predicts behavioural loyalty, i.e. factual, repetitive purchases. Dimensional analysis, in accordance with the so-called affective-behavioural classification of loyalty, allows distinguishing four categories of loyalty, as

presented in Figure 4. The lack of loyalty means rare purchases, which involves low consumer involvement. Apparent loyalty occurs when the consumer is not particularly involved in decision-making, makes small purchases, and their

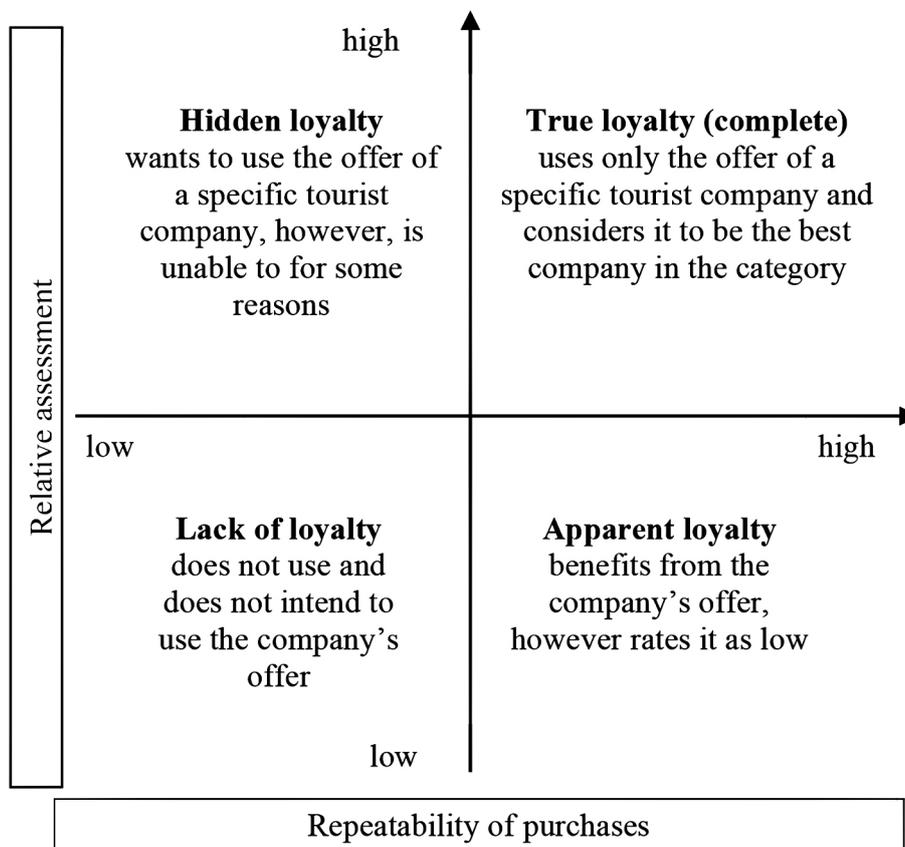


Figure 4. Affective-behavioural classification of loyalty. Based on (Dick and Basu, 1994; Kwiatek, 2007)

behaviours are routine. In the case of apparent loyalty, there is a high risk that in the future, a client may select the offers of competing companies if they prove to be more attractive in some respect (Kwiatk, 2007). True loyalty occurs when the repetition of purchases results from an informed decision by the consumer and his favourable attitude towards the company or brand [Kwiatk, 2007]. Client loyalty significantly impacts companies' competitiveness (Buchanan and Gilles, 1990; Newell, 2002) and the value of intangible capital (ensuring market stability). The benefits of having loyal clients (Urban, 2008):

- loyal clients are cheaper as far as the so-called maintenance is concerned compared to the new ones,
- loyal clients make more purchases, have more trust in the company and are open to its new products and services,
- loyal clients are willing to accept a higher price for the same quantity of product.

A significant step in measuring loyalty was to apply and disseminate indicators such as net promoter score (NPS) and client loyalty ratio (CLR), allowing for more precise measurement and comparison of results. NPS is a measure of client loyalty based on a question regarding the probability of recommending a company to friends. It has two main advantages: a high diagnostic value (the propensity to recommend is one of the most synthetic indicators of general satisfaction) and a universal character allowing comparisons between global corporations.

The analysis of the concepts of satisfaction and loyalty, as well as the identification of the relationship between them are crucial both for a company which seeks to establish lasting relations with clients, as well as from the perspective of consumers themselves, whose satisfaction is the foundation of brand loyalty.

## MATERIALS AND METHODS

The study was conducted among the clients of a bank. The respondents replied in a questionnaire provided on paper between 2023 and 2025. The research tool was developed based on two recognised measurement models – European performance satisfaction index (EPSI), used to assess client satisfaction, and NPS and CLR, used to measure loyalty. Respondents belonged

to three bank branches located in the same city. They completed the survey randomly at different times of day. Data on the level of satisfaction of EPSI and the level of loyalty of NPS and CLR were collected based on 224 correctly filled out surveys. The purpose of the study was not to compare specific products or to assess the quality of the services of a particular bank, but to identify the relationship between the analysed satisfaction and loyalty indicators, which allows for a better understanding of the mechanisms affecting clients' behaviour.

Based on the survey results, spread charts showing the relationship between the researched variables were drawn up, followed by the calculation of correlation coefficients. The relationship between the level of client satisfaction measured by the EPSI indicator and the level of loyalty determined by the NPS and CLR indicators has been analysed. The correlation coefficient from the sample  $r$  determines the strength of the linear relationship between variables  $X$  and  $Y$ .

The formula by which the correlation coefficient is calculated has the form (Angelini, 2019; Józwiak and Podgórski, 1995):

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

where:  $x_i$  and  $y_i$  denote the variables  $x$  and  $y$  values, respectively.

The correlation coefficient takes values from the interval  $<-1;1>$  (Angelini, 2019; Borkowski and Czajkowska, 2012), which are interpreted as follows (Borkowski and Czajkowska, 2012; Ostasiewicz et al., 1998; Czajkowska et al. 2023 ):

- $r = -1$  the occurrence of a perfect negative correlation,
- $r = 0$  no linear correlation,
- $r = 1$  the occurrence of a perfect positive correlation.

The EPSI (European Performance Satisfaction Index) model is a model for surveying client satisfaction and loyalty, widely used in Europe, including in the banking, telecommunications and service sector (Mazurek-Łopacińska, 2005; Yilmaz, Sürmelioğlu, 2025). It aims to assess client satisfaction and factors affecting loyalty and recommendations.

EPSI provides valuable information on bank customer satisfaction. According to the report, smaller and niche banks (e.g., local banks) often have higher levels of customer satisfaction,

which EPSI attributes to the closeness of the relationship (Parmler, 2022). EPSI reports not only reveal the level of satisfaction but also identify the factors that influence it (Parmler, 2024). The report (Laitinen, 2020) shows that despite the progress of digitalization, customers who have a more “traditional” (less digital) relationship with the bank are slightly more satisfied.

The EPSI model is a very versatile indicator and allows businesses to:

- monitoring client satisfaction in real time.
- identifying areas which need improvement.
- understanding which factors affect client loyalty.
- making decisions based on data.

The EPSI methodology is based on seven areas (Mazurek-Łopacińska, 2005; Skorwon, 2010), which are presented in Figure 5. The interpretations of these areas are presented in Table 1.

Loyalty was calculated using two methods NPS and CLR. NPS is a tool for measuring consumers’ loyalty level, created as an alternative to traditional measurement methods, and is currently increasingly used in business practice (Reichheld, 2003; Michalska-Dudek, 2015a). As part of NPS, a client answers the following question: “What is the probability that you would recommend company X to your friends or acquaintances?” by awarding points on a scale of 1 to 10, where 10 means “nearly 100%” probable recommendation, five means “50/50”, and 0 means a near-zero probability of recommendation. NPS divides clients into three groups: promoters, neutrals and critics.

- promoters – persons who rated 9–10,
- passively satisfied – responses ranging from 7–8,

- unsatisfied – responses at 0–6.

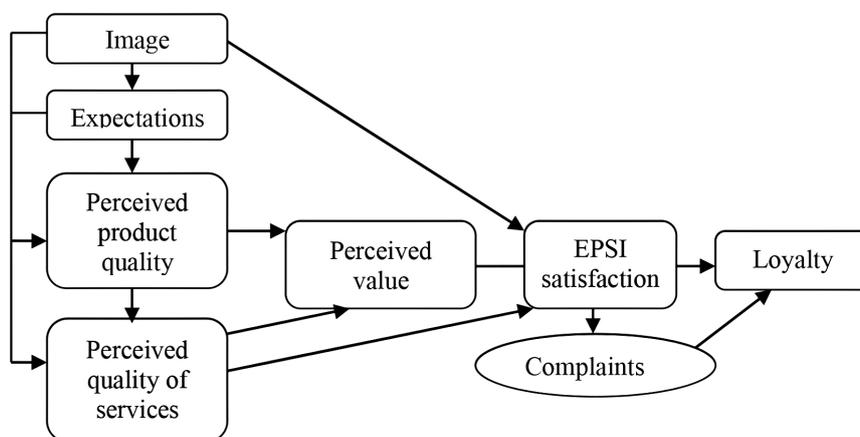
Whereas (Hall, 2013; Hill, 2003), the formula for calculating NPS is the difference between the percentage share of promoters and critics. (2)

$$NPS = \% Promoters - \% Critics \quad (2)$$

The high value of the NPS indicator indicates a strong link between the company and clients who may become ambassadors of a specific brand. The NPS indicator is based on the probability of a recommendation. According to Reichheld, after many years of research, repeated purchases are not the best measure of loyalty but the tendency to make recommendations. Client loyalty understood in this manner is one of the

**Table 1.** Characteristics of areas under the EPSI model

Areas	Interpretation
Company image	— innovation level, — credibility, — reliability, — orientation towards the client, etc.,
Client's expectations	A set of thoughts and desires which the client may have in mind during and after purchasing a product or service from a company or a brand
Service perception	“The degree in which a set of characteristics of an object perceived by a person meets its requirements” may affect the perception of the quality of products offered by a company against the quality of the products provided by the competition.
Perceived value	subjective assessment assigned by a client to a specific product, service or brand
Satisfaction	level at which specific expectations are met, and overall satisfaction
Grievances and complaints	components which hurt client satisfaction and loyalty.



**Figure 5.** EPSI model (European Performance Satisfaction Index). Source: study based on (Johnson et al., 2001; Skowron, 2011)

main driving forces of a company’s development (Reicheld, 2004).

CLR allows for assessing the impact of actions taken on the client’s behaviour. Conditional declaration means that clients are willing to purchase if the competitor’s offer is comparable and the purchase does not cause inconveniences (unfavourable location). An unconditional declaration means clients will stick to their choices despite certain inconveniences. Unfortunately, this indicator is not perfect because it is based solely on the behavioural aspect of loyalty. Moreover, the answers provided by respondents do not necessarily reflect their factual intentions and future behaviour. A respondent may not be sure of their future behaviour and whether the situation will change (i.e. they may not be certain if they will need the product, whether their tastes, needs, or expectations will change). Intent may also change with time. CLR is calculated based on the models by Kozielski (2011):

- standard = (number of clients declaring unconditional + conditional willingness to purchase)/number of respondents · 100%
- reinforced = number of clients declaring unconditional willingness to purchase/number of respondents · 100%.

Interpretation of an indicator (Internet\_1):

- 0–50: poor loyalty, immediate action required,
- 51–70: average loyalty, room for improvement,
- 71–90: good loyalty, focus on maintaining and improving,
- 91–100: perfect loyalty, analysis and replication of success factors.

This study has modified the traditional NPS and CLR indicators to achieve more generalised

results and link clients’ loyalty to other satisfaction indicators and attitudes towards the bank.

## RESULTS

The study was conducted among 224 bank clients. The respondents replied in a questionnaire provided on paper between 2023 and 2025. The study aimed to examine the relationship between indicators and not to learn about the preferences of clients of a particular bank or to improve the services of that specific bank (Table 2).

In the survey, in addition to questions regarding the assessment of satisfaction and loyalty towards the bank, respondents were asked to indicate the age range and the period for which they held an account in the bank; these variables allowed for an analysis of the differences in clients’ attitudes depending on their age and the duration of their relationships with the financial institution. Figure 6 presents the spread chart for the relationship between EPSI and NPS.

Pearson’s correlation ratio for these data is  $r=0.558$  at  $p = 0.0011$ , which means the correlation is moderately positive and statistically significant ( $p < 0.05$ ).

The probability that such a strong correlation ( $r = 0.56$  would occur by chance is only 0.11%. It can therefore be stated with high probability that a positive relationship exists between the X and the Y variables. The result highlights the importance of systematic monitoring of client satisfaction and corrective action in areas that impact negative experience. Investing in improving the satisfaction of clients can therefore bring tangible benefits in the form of increased loyalty,

**Table 2.** Sample of survey used for the study

Question	Points 1–10	Weight
1. How do you evaluate the bank’s image on a scale of 1-10 Considering, for instance, security of means and data, modern solutions (e.g. mobile applications, online banking), number and location of facilities and ATMs, availability of services via the internet and dedicated applications		
2. To what extent does the bank meet your expectations? On a scale of 1–10		
3. How do you rate your bank’s services compared to the competition? On a scale of 1–10		
Assign Weights. What is most important to you? Information contained in 1, 2 and 3 (insert items from 1 to 10; however, their sum = 10)		
4. NPS “What is the probability that you would recommend company X to your friends or acquaintances?” by awarding points on a scale of 1 to 10, where 10 means “nearly 100%” probable recommendation, five means “50/50”, while 0 means a near-zero probability of recommendation (insert value ranging from 1–10)		
5. CLR How would you rate the probability that you will continue using the bank’s services if their services worsen? 1–10		

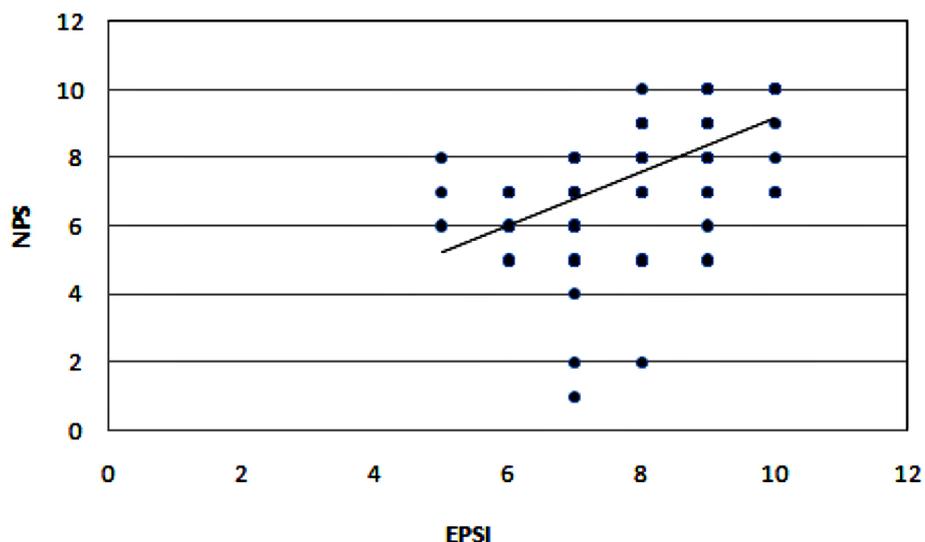


Figure 6. Correlation between EPSI and NPS indicators

which in turn translates into a more stable client base and lower costs associated with acquiring new buyers.

The impact of satisfaction on conditional loyalty has been checked, i.e., what degree of loyalty exists when the conditions offered by the bank worsen (Figure 7), e.g., the offer will not benefit the client, the service will not meet their expectations, or the fees increase.

The relationship between satisfaction and CLR is weak ( $r = 0.245$ ) and not always strongly determined by the satisfaction level. This means that as the EPSI index increases, the CLR has a slight tendency to grow; however, the relationship is weak. In practice, this may indicate that some clients remain loyal regardless of satisfaction or that other

factors (e.g. attachment to the brand and financial needs) have a greater impact on CLR than mere satisfaction with services. In practice, this shows that other factors also affect clients' loyalty.

Figure 8 shows the relationship between the EPSI level of satisfaction and the bank's number of actual recommendations (LRP).

Pearson's correlation ratio for the relationship between EPSI satisfaction and actual recommendations was  $r=0.267$  (at  $p=0.0027$ ). This means that the relationship between satisfaction and recommendation level is positive but very weak. Table 3 shows 95% CI and statistical power for the obtained correlations. The average number of actual bank instructions depending on the age of the respondents is shown in Figure 9. Studies

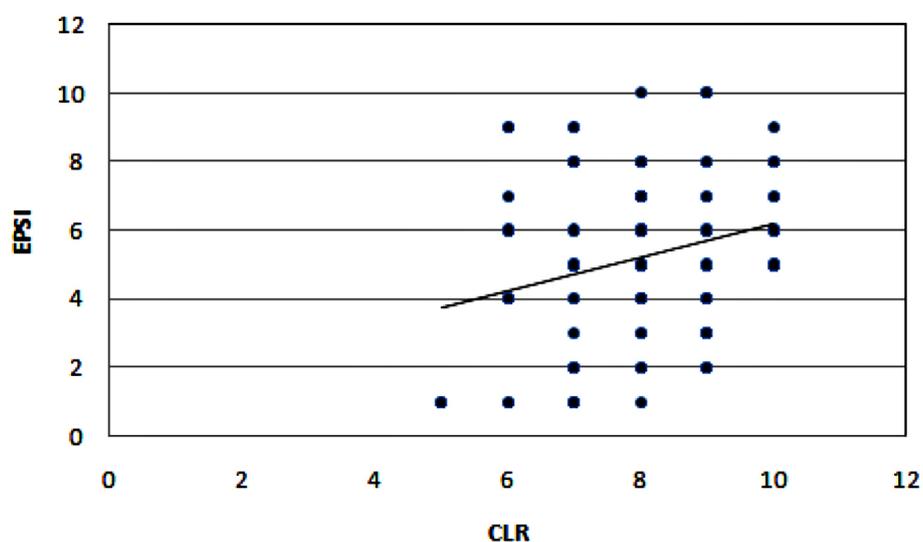


Figure 7. Correlation between EPSI and CLR indicators

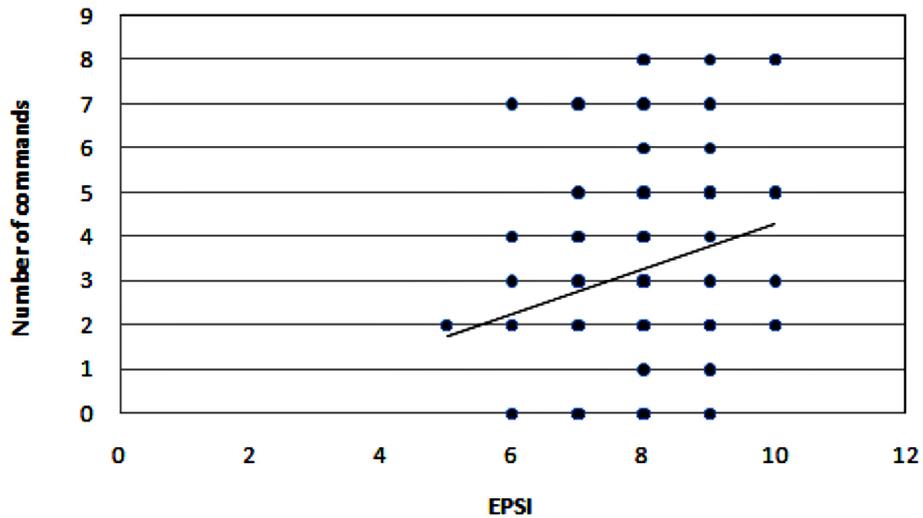


Figure 8. Relationship between the Epsi satisfaction level and the number of actual recommendations (AR)

Table 3. CI and statistical power for the obtained correlations

Indicators	Correlation r	95% CI	Statistical power
EPSIvsNPS	r=0.56	[0.46, 0.64]	≈1
EPSIvsCLR	r=0.25	[0.12,0.36]	≈0.9
EPSIvsAR	r=0.27	[0.14;0.39]	≈0.92

have shown that younger clients are more likely to recommend banking services. People aged 18 and over are more likely to be involved in advising others on banks, particularly online and on social media. That is because younger clients are more active in following promotional offers, recommendation programmes and financial benefits, such as cash bonuses for inviting a friend, cash-back returns or points in loyalty programmes. The

gratification scheme motivates clients to recommend the bank, and information on such actions is readily available in digital channels used by younger people daily. Older clients are less likely to recommend the bank to others because:

- they often do not know that recommendation schemes exist (they do not actively use mobile applications, they do not follow social media or read newsletters from banks),

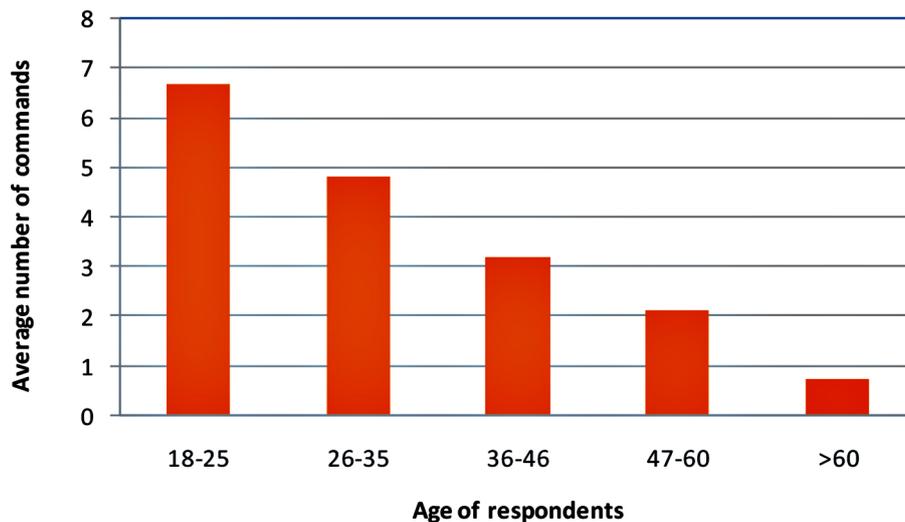
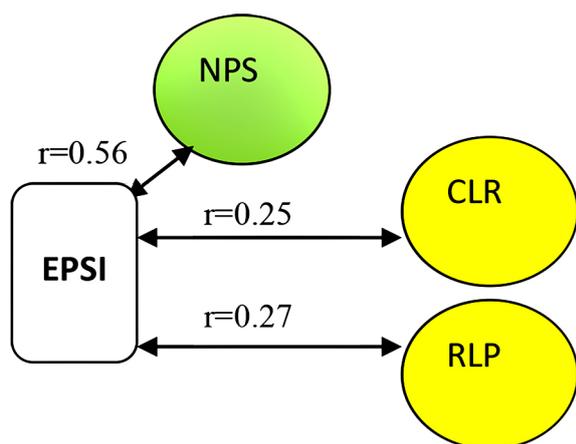


Figure 9. Average number of actual recommendations depending on the age of respondents



**Figure 10.** The coefficient of correlation between the variables under examination

- they do not find one-off financial benefits particularly enticing.
- they treat their relationship with the bank rather pragmatically and conservatively, without feeling the need to recommend the services,
- they are distrustful and less likely to recommend the bank to others because of greater caution and a lower level of confidence in financial institutions.

Figure 9 visually shows the strength of the relationship between the variables examined. The dependency analysis shows that EPSI and NPI share the most powerful relationship among all the investigated ones. It has been noted that the relationship between EPSI and CLR is remarkably similar to that between EPSI and RLP.

The correlation ratios between these indicators ( $r=0.25$  and  $r=0.27$ ) form a weak but essential relationship. This means that an increase in client satisfaction (EPSI) is related to a moderate increase in declared loyalty (CLR) and actual loyal behaviours by the average number of recommendations

## CONCLUSIONS

The analysis of the tests carried out shows that client satisfaction is a basic condition that must be met for the client to remain loyal. It may be concluded, therefore, that a dissatisfied client will not be loyal, but a satisfied client is not necessarily always loyal because loyalty also depends on a number of other factors (e.g., environment, competition, relationship with the bank).

The satisfaction measured by the EPSI indicator explains loyalty in 31% while other factors determine the remaining 69% of loyalty. Detailed conclusions of the tests carried out:

- there is a positive relationship between the satisfaction level (EPSI) and the loyalty of NPS clients ( $r=0.56$ ). This is a moderately strong positive linear relationship. As client satisfaction increases, their loyalty to the bank also increases; however, other factors which impact loyalty also exist.
- clients with a high level of satisfaction with bank services are more likely to remain regardless of the deterioration of the conditions; however, there is a poor relationship between satisfaction and CLR ( $r = 0.245$ ).
- a high level of EPSI does not always guarantee high conditional loyalty.
- the relationship between satisfaction and the number of actual recommendations ( $r = 0.267$ , at  $p = 0.0027$ ) means a positive but weak relationship.
- the relationship between the satisfaction index (EPSI) and declared loyalty (CLR) is remarkably similar to that between EPSI and the average number of bank recommendations.
- CLR indicator is lower among younger and more digitally mobile clients. Younger clients are driven by economic factors (e.g. fees, interest rates or attractiveness of mobile applications) and their loyalty is more conditional and calculated. Due to the high availability of information on the Internet and how easy it is to change banks via online channels, this group is more aware of market alternatives and more quickly responds to adverse changes.
- client satisfaction is necessary; however, it is insufficient to establish complete loyalty.
- banks should invest in improving satisfaction and other factors affecting loyalty, such as loyalty programmes, personalised services or financial stability and institutional reputation.

The analysis of the conducted studies shows that loyalty is primarily related to satisfaction; however, it is not exclusive. Client loyalty should be pursued by offering a service or products tailored to their needs. To achieve success in this area, it is necessary to analyse the data on purchasing behaviours (e.g. analysis of purchasing history), reward with points, discounts, purchases and benefits for regular clients (e.g. earlier access to discounts, exclusive offers). Apart from being

of high quality, responding to questions and issues quickly is essential, as well as offering empathy and factual help. A client who *feels good with the brand* remains faithful to the brand even if they find a cheaper alternative.

Undoubtedly, client loyalty must be maintained, as it gives the company a competitive advantage that directly translates into real profits.

The presented results pertain to the clients of a single bank. Customers of different banks can vary significantly, for example, demographically or in terms of their needs. One bank may be more ‘traditional’ or more digital than the others.

The obtained results will be compared in the future with data from other banks. The author plans to conduct similar research in other industries to see if the correlation changes with an increase in the number of respondents and if it is similar in other industries.

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