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MEASURING CUSTOMER EXPERIENCE QUALITY IN BANKING SERVICES IN SERBIA: VALIDATION OF THE EXQ SCALE

Abstract: Customer Experience (CX) has emerged as a key element in business strategies globally. With the increasing focus on the service and experience economy, understanding and managing the customer experience has become essential to achieving business success. As markets become increasingly competitive over time, companies focus on providing exceptional customer experiences as a way to stand out from the competition. CX is formed through direct contacts such as purchasing and using products and services, and interacting with staff; as well as through indirect contacts such as advertisements, user reviews, and social media. There is a growing awareness about critical importance of precise tools for measuring the quality of CX in order to obtain accurate feedback and take appropriate measures for improvement. The most applied scale for measuring CX found in literature is EXQ scale developed by Klaus and Maklan. Original scale was reevaluated, covering three stages in its three dimensions: the brand (pre-purchase), the service provider (during purchase), and post-purchase experience, extending the number of items to 25.
The aim of this paper is to determine the possibility of implementing the reevaluated EXQ scale in financial service sector in Serbia. The validation of the instrument was conducted on a sample that consisted of 702 valid responses to the questionnaire sent to more than 2000 customers of banking services mainly from Vojvodina and Belgrade regions. The evaluation of the psychometric characteristics of the EXQ scale was performed using principal component analysis. The analyses were conducted at the individual level, which means that the sample size on which the analyses were conducted was 702 respondents.
Keywords: Customer Experience, EXQ Scale, Banking Sector, CX Measurement

1. INTRODUCTION

The transition from an industrial economy to a knowledge economy, along with the shift from product and goods marketing to service marketing, are parallel processes that reflect changes in value creation in the modern economy. While the industrial economy focuses on physical goods and production efficiency; knowledge economy (Foray, 2004) and service marketing (Lovelock & Patterson, 2015) emphasize the value of intangible resources and customer relationships.

The size of the service sector is growing in almost all countries worldwide. As economies develop, the relative share of employment between agriculture, industry, and services undergoes dramatic changes. Even in developing countries, the value generated by service provision accounts for at least half of the gross domestic product (GDP) (The Service Economy | OECD, 2000; Wirtz & Lovelock, 2021).
In service marketing, customer relationships are not just one-time transactions but long-term engagements. Customer Relationship Management (CRM) enables companies to track customer interactions and continuously improve the experiences they provide, fostering deeper and more lasting relationships. Key ways in which CRM contributes to this include:

- Tracking all stages of the customer journey, from initial contact to post-service support, allowing for personalized and timely interactions with customers (Woelke, 2023);
- Enabling customer segmentation based on loyalty and behavior, to create targeted offers and reward programs aimed at customer retention (Setiawati et al., 2019);
- Enhancing customer experience (Customer Experience – CX) (Purcărea, 2019), which is a crucial element in service marketing.

By using CRM, companies can better understand their customers and respond quickly to their needs or complaints, thereby increasing customer satisfaction. CRM allows companies to:

- Analyze customer feedback by collecting insights that can be used to improve service quality and tailor offerings to specific needs;
- Provide a consistent customer experience by giving employees access to customer information, ensuring a seamless and personalized service across all interaction points.

2. CUSTOMER EXPERIENCE

Customer experience (CX) has emerged as a key element in business strategies worldwide. With an increasing focus on the service and experience economy, understanding and managing customer experience has become essential for achieving business success. CX encompasses all interactions a customer has with an organization, including products, services, and all touchpoints with the brand (Lemon & Verhoef, 2016). Growing competition and changes in customer expectations have compelled companies to recognize the importance of delivering an exceptional customer experience to differentiate themselves in the market.
In recent years, the importance of customer experience has been extensively studied, exploring its concepts, strategies, and influential factors. Contemporary literature is increasingly examining various instruments used to measure the quality of customer experience. The most applied scale for measuring customer experience found in literature is EXQ scale developed by Klaus and Maklan (“Phil” Klaus & Maklan, 2012).
The definition of CX emphasizes the importance of a holistic approach to understanding customer experience. CX is the result of complex and interconnected emotional, cognitive, sensory, and interactional elements that collectively shape the customer's perception of the brand (Klaus, 2014).
Customer experience (CX) encompasses all interactions a user has with a brand throughout the customer journey, including pre and post-sale stages. Customer experience is not only related to the product or service a company provides, but also to the overall experience a customer has across all touchpoints with the brand. (Lemon & Verhoef, 2016).
Klaus and Maklan (Klaus & Maklan, 2013) explore different aspects of CX and focus on a multidimensional approach to its measurement, identifying the following key factors: the emotional aspect (Klaus, 2014), the cognitive aspect (McColl-Kennedy et al., 2019), the sensory aspect (Tyagi & Tyagi, 2022), interactions with employees (Klaus & Maklan, 2013), environment - both physical and digital (Froehle & Roth, 2004), direct and indirect contacts (Bagdare & Jain, 2013).
In their paper (Wetzels et al., 2023) the authors lay the foundation for linking Customer Experience Management (CXM) practices to company performance, emphasizing which practices are more rewarding than others. Their study lays the groundwork for research to further elaborate on the cause-effect relationship between CX and performance.

3. THE INSTRUMENT FOR ASSESSING CUSTOMER EXPERIENCE

Measuring service quality is essential for understanding and improving the customer experience. For several decades, various reviews of measurement methods have been conducted to assess service quality and related aspects of customer experience. Traditional models like SERVQUAL and SERVPERF have been used often in the literature (Klaus, 2007; Maklan & Klaus, 2011). The authors (Maklan & Klaus, 2011) emphasize the need for the development of new tools that better reflect the complexity of CX, given that service quality is one of the key determinants of customer experience. When consumers receive a service that meets or exceeds their expectations, their overall experience is positive, which can lead to greater loyalty, repeat purchases, and positive word-of-mouth recommendations. Service quality can be seen as a fundamental element of CX, as it establishes the foundation on which consumers' perception of a brand is built.

One of the main challenges in linking service quality with CX is measuring these aspects in a way that accurately reflects consumers' subjective experiences.
In his work (Klaus, 2007) the author points out that traditional methods such as the previously mentioned SERVQUAL and SERVPERF provide useful frameworks for evaluation, but often fail to account for the full complexity of CX. For example, the SERVQUAL model focuses on the gap between consumer expectations and perceived service delivery but does not encompass all touchpoints that constitute CX. The most applied scale for measuring customer experience found in literature is the EXQ scale developed by Klaus and Maklan ("Phil" Klaus & Maklan, 2012). The original scale was re-evaluated, covering three stages in its three dimensions: the brand (pre-purchase), the service provider (during purchase), and the post-purchase experience, extending the number of items to 25.

4. THE RESULTS OF EVALUATING THE VALIDITY AND RELIABILITY OF THE INSTRUMENT FOR ASSESSING THE CUSTOMER EXPERIENCE QUALITY

The re-evaluated original EXQ scale instrument comprises 25 items that assess attitudes towards the quality of the customer experience, resulting in the development of a hypothesis to be tested:

H_0: The re-evaluated original EXQ scale instrument can be used to identify and measure the attitudes of respondents from the Republic of Serbia regarding customer experience (CX).

The empirical study was conducted to test the EXQ scale in the banking sector within the Serbian context. All respondents were users of banking services in Serbia, including both individuals and legal entities. The analysis was performed on a sample of 702 respondents. Within the sample, male respondents constituted 61.3%, and female respondents 38.7%. The predominant age group in the sample was "25-34 years old," representing 44.4% of the total sample. Respondents with a "completed university degree" constituted 49.1% of the sample. The majority of respondents were from the Vojvodina region, making up 83.5% of the sample.
The study adopted new EXQ scale with 7 point Likert scale (1 – strongly disagree, 7 – strongly agree), and the items appeared in random order on the questionnaire. Assessment of the items confirmed face validity, meaning that the scales measured what was supposed to be measured. Revisiting the items' content, we labelled the dimensions in keeping with Klaus's study (Klaus, 2014). Therefore, the first dimension (comprising 7 items) **Brand Experience**, the second dimension (comprising 11 items) **Service Purchase Experience** and the third dimension (comprising seven items) **Post Purchase Experience**.
The psychometric characteristics of the instruments were evaluated by applying Principal Component Analysis (CPA). The analyses were conducted at the individual level.
This research aimed to evaluate the unidimensionality of each subscale of the EXQ scale. To achieve this, a one-component factor analysis was conducted on the items within each subscale. By applying the criterion of having eigenvalues greater than 1 along with the "Scree plot" criterion, a single factor was extracted for every subscale, confirming their unidimensional nature. Additionally, an analysis was carried out on the entire sample to assess the instrument's reliability. The results for the specified dimensions indicated high-reliability values, aligning with findings from prior research in the literature.

4.1. The validity of subscale Brand Experience

The measure of representativeness of the sample was assessed by the *Kaiser–Meyer–Olkin* (*KMO*) test. Resulting value of 0.907 indicated adequate sampling according to Kaiser's interpretation. Cronbach's alpha, as a measure of internal consistency, was used to assess the reliability of the subscale, and the resulting value of 0.881 (Table 4) indicated sufficient consistency of the items, and reliability of the measure. The significance of correlations between variables was measured by Bartlett's test of sphericity, and the resulting values indicated statistical significance ($\chi 2$= 1949.565; df=21; p=0,000). Thus, the conditions that would justify the application of factor analysis were fulfilled.

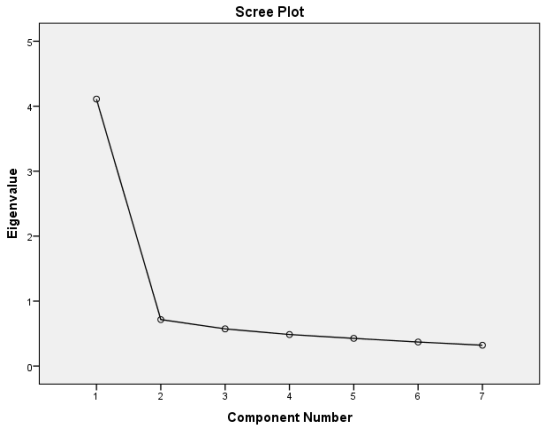
Table 1: Values of component saturations for the first principal component determined by the items of the subscale Brand Experience

Brand Experience	Factor loadings
BRE5 - The people who work at XYZ represent the XYZ brand well	.822
BRE6 - XYZ's offerings have the best quality	.796
BRE7 - XYZ's offerings are superior	.793
BRE2 - I am confident in XYZ's expertise	.793

BRE3 - XYZ gives independent advice (on which product/service will best suit my needs).	.787
BRE4 - I choose XYZ not because of the price alone	.717
BRE1 - XYZ has a good reputation	.639

Source: autors, 2025.

The subscale Brand Experience can be considered one-dimensional, i.e. to have one measurement subject, and to be homogeneous. The conclusion was based on the amount of explained variance of the first principal component of 58.709%, whose characteristic root was λ=4.110 (Table 4, and Scree Plot in Picture 1). The Brand Experience construct is psychometrically valid and reliable because all variables have statistically significant factor saturation (Table 1).



Picture 1: Scree Plot of the components on the items of the Brand Experience subscale
Source: autors, 2025

4.2. The validity of subscale Service Purchase Experience

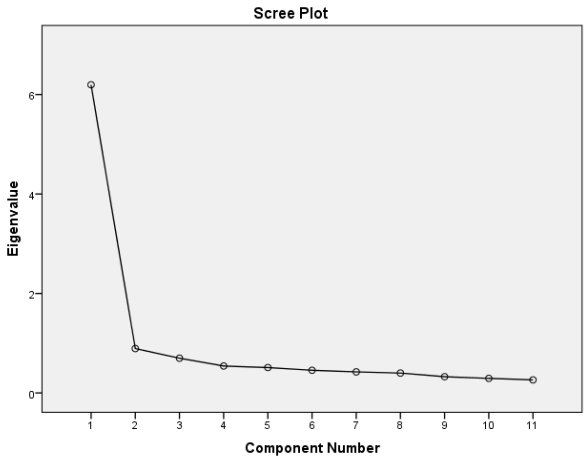
The measure of representativeness of the sample was assessed by the *Kaiser–Meyer–Olkin* (*KMO*) test. Resulting value of 0.946 indicated adequate sampling according to Kaiser's interpretation. Cronbach's alpha, as a measure of internal consistency, was used to assess the reliability of the subscale, and the resulting value of 0.910 (Table 4) indicated sufficient consistency of the items, and reliability of the measure. The significance of correlations between variables was measured by Bartlett's test of sphericity, and the resulting values indicated statistical significance ($\chi 2$= 3772.469; df=55; p=0,000). Thus, the conditions that would justify the application of factor analysis were fulfilled.

Table 2: Values of component saturations for the first principal component determined by the items of the subscale Service Purchase Experience

Service Purchase Experience	**Factor loadings**
SPE8 - XYZ delivers a good customer service	.843
SPE6 - XYZ's personnel relates to my wishes and concerns	.815
SPE4 - XYZ demonstrates flexibility in dealing with me	.812
SPE1 - XYZ advised me throughout the process	.811
SPE7 - The people I am dealing with (at XYZ) have good people skills	.793
SPE2 - Dealing with XYZ is easy	.755
SPE5 - At XYZ I always deal with the same forms and/or same people	.735
SPE11 - XYZ's (online and/or offline) facilities are designed to be as efficient as possible (for me)	.719
SPE10 - XYZ's facilities are better designed to fulfill my needs than their competitors	.656
SPE3 - XYZ keeps me informed	.652
SPE9 - I have built a personal relationship with the people at XYZ	.627

Source: autors, 2025.

The subscale Service Purchase Experience can be considered one-dimensional, i.e. to have one measurement subject and to be homogeneous. The conclusion was based on the amount of explained variance of the first principal component of 56.321%, whose characteristic root was λ=6.195 (Table 4, and Scree Plot in Picture 2). The Service Purchase Experience construct is psychometrically valid and reliable because all variables have statistically significant factor saturation (Table 2).



Picture 2: Scree Plot of the components on the items of the Service Purchase Experience subscale
Source: autors, 2025

4.3. The validity of subscale Post Purchase Experience

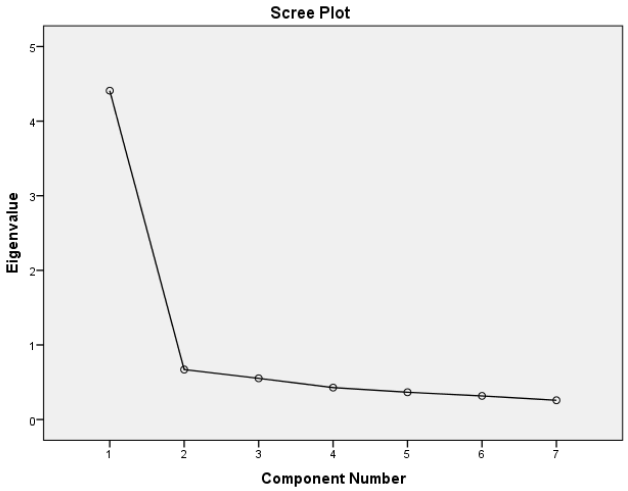
The measure of representativeness of the sample was assessed by the Kaiser–Meyer–Olkin (KMO) test. Resulting value of 0.912 indicates adequate sampling according to Kaiser's interpretation. Cronbach's alpha, as a measure of internal consistency, was used to assess the reliability of the subscale and the resulting value of 0.900 (Table 4) indicated sufficient consistency of the items, and reliability of the measure. The significance of correlations between variables was measured by Bartlett's test of sphericity, and the resulting values indicated statistical significance ($\chi 2$= 2366.489; df=21; p=0,000). Thus, the conditions that would justify the application of factor analysis were fulfilled.

Table 3: Values of component saturations for the first principal component determined by the items of the subscale Post Purchase Experience

Post Purchase Experience	Factor Loadings
PPE4 - XYZ will look after me for a long time	.867
PPE6 - I am happy with XYZ as my (service firm)	.844
PPE5 - XYZ deal(t) well with me when things go(went) wrong	.838
PPE1 - I stay with XYZ because they know me	.794
PPE3 - XYZ keeps me up-to-date	.784
PPE2 - XYZ knows exactly what I want	.733
PPE7 - Being a client at/customer of XYZ gives me social approval	.679

Source: autors, 2025.

The subscale Post Purchase Experience can be considered one-dimensional, i.e. to have one measurement subject and to be homogeneous. The conclusion was based on the amount of explained variance of the first principal component of 62.981%, whose characteristic root was λ=4.409 (Table 4, and Scree Plot in Picture 3). The Post Purchase Experience construct is psychometrically valid and reliable because all variables have statistically significant factor saturation (Table 3).



Picture 3: Scree Plot of the components on the items of the Post Purchase Experience subscale
Source: autors, 2024

In this study, Cronbach's alpha coefficient was used to calculate the internal consistency of the items included in the questionnaire for the study with 702 respondents. Results of the overall reliability analysis demonstrated that the items in the three constructs had a satisfactory discriminating power of 0.961 (Table 4 - Instrument EXQ). The results indicated the satisfactory level of construct validity and internal consistency of this questionnaire. Furthermore, it was suitable to measure the respondents' attitude towards customer experience.

Table 4: The reliability and variance extracted for the EXQ instrument's subscales

Subscale	Crombach's alpha	%	Λ
Brand Experience	.881	58.709	4.110
Service Purchase Experience	.910	56.321	6.195
Post Purchase Experience	.900	62.981	4.409
Instrument EXQ	.961		

* Λ - the characteristic root of the first principal component; % - variance extracted

Source: autors, 2025.

5. CONCLUDING REMARKS

Customer Experience (CX) has become a vital component of business strategies worldwide. As the economy shifts towards prioritizing services and experiences, effectively understanding and managing CX is crucial for achieving business success. With the marketplace becoming increasingly competitive, companies are prioritizing outstanding CX to distinguish themselves from their rivals. CX derives from direct interactions, such as product purchases, service usage, and staff engagement, alongside indirect interactions like advertisements, user reviews, and social media presence. There is an increasing recognition of the need for precise tools to measure user experience quality, enabling accurate feedback and necessary improvements.

A structured questionnaire was employed to assess respondents' attitudes regarding the CX with banking services in Serbia. All constructs and their associated items in the questionnaire were sourced from existing studies. The revised original EXQ scale instrument includes 25 items that evaluate attitudes towards customer experience quality across three dimensions: the first dimension (consisting of 7 items) is Brand Experience; the second (comprising 11 items) is Service Purchase Experience; and the third (also comprised of 7 items) is Post Purchase Experience. This tool was tested with a sample of 702 respondents in Serbia.

Results of the overall reliability analysis demonstrated that the items in the three constructs had a satisfactory discriminating power, indicating the satisfactory level of construct validity and internal consistency of this questionnaire. The hypothesis that "*The re-evaluated original EXQ scale instrument can be used to identify and measure the attitudes of respondents from the Republic of Serbia regarding CX*" was confirmed. Therefore, we concluded that the EXQ scale instrument was appropriate for measuring the respondents' perceptions of assessing CX with banking services in the Republic of Serbia.

In recent years CX has evolved from a mere buzzword into a significant marketing paradigm and an essential aspect of business practices (Arne De Keyser et al., 2020). Consequently, CX has emerged as a priority for both the business sector and the academic community (Becker & Jaakkola, 2020). The validated EXQ instrument should benefit business communities operating in transitional economies (such as Republic of Serbia).

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