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Customer Perceptions of Awareness and Security of E-banking Usage

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Abstract: *E-banking has emerged as a pillar of modern financial systems, offering consumers worldwide remarkable convenience, accessibility, and efficiency. This study investigates the crucial nexus between e-banking adoption and perceptions of safety within Albania's banking system. Based on a survey of 400 customers, our study highlights the importance of safety perception in driving e-banking adoption. We found that independent variables, such as personal income level, customer awareness of e-banking, perception of ease of use, and perception of safety, significantly correlate with e-banking usage. This underscores the crucial role of safety perception in influencing adoption rates. In addition, individuals with a strong sense of safety are more likely to use e-banking. Albania's banking sector is advised to enhance safety perceptions by implementing strong cybersecurity measures, conducting educational campaigns for users, and increasing transparency in e-banking operations. Collaborative partnerships with regulatory bodies and industry stakeholders can further strengthen safety protocols, ensuring resilience against cyber threats and fostering continued user trust and engagement.*

1. INTRODUCTION

Internet Banking is defined as the service that the bank provides to its customers to enable the performance of various transactions online, thus avoiding visiting its physical branches. Internet Banking is a new concept that is becoming more and more part of the routine of every person who has a bank account. Nowadays, despite this, it is the bank that has made it its focus. The many opportunities and facilities in the distribution of information, the reduction of costs, the introduction of new innovations have made the bank completely dependent on information technology and everything it offers. The range of services that Internet banking offers expands even more with the evolution of technology. Through Internet Banking, bank clients have the opportunity to receive services such as: review of ordinary banking transactions, invoicing, fund transfers, print statements, check the balance of the account and the history of transactions, make investments in deposits or securities, manage the entire account in one place, apply for credit cards and loans, etc. Internet Banking is an option that gives a bank's clients the opportunity to have complete control over their money, to be able to receive services even outside the institution's official hours, which benefits both parties, the bank and the clients. In banks, customer waiting lines are reduced and the workload for front-line employees is also reduced, who meanwhile can focus on sales rather than operational work. This service for customers means cost reduction and much better time management since they can perform the actions from wherever they are. However, alongside its convenience, ensuring information security is essential in online banking to protect customer data from cyber threats. Financial institutions use multiple layers of security measures to ensure the confidentiality, integrity and availability of customer information. These

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measures include data encryption, secure authentication methods, intrusion detection systems and regular security audits. By prioritizing information security, financial institutions can prevent data breaches, fraud and identity theft, thereby gaining customer confidence in online banking services. Online banking is transforming the banking industry by replacing traditional practices with a technology-driven system. In Albania, however, the adoption of this innovation faces greater resistance from customers compared to those in more developed countries, despite advancements in technology and recent developments.

In the era of digitization and technological advances, internet banking has emerged as an essential aspect of modern banking services. It provides customers with convenient and secure access to their financial accounts, enabling them to conduct various transactions and manage their finances online. One of the main reasons for the growing importance of online banking is the exceptional convenience and accessibility it offers. Customers can access their bank accounts anytime, anywhere, without being restricted by traditional banking hours or geographic restrictions. With just a few clicks, customers can view real-time account balances, transfer funds, pay bills and even apply for loans or credit cards. This accessibility empowers individuals to have greater control over their finances and saves them valuable time and effort. On the other hand, Internet banking has revolutionized the banking industry by significantly reducing operational costs for financial institutions. By shifting transactions to online platforms, banks can now minimize the overhead associated with physical branches and staff. These cost savings are often passed on to customers as they result in lower fees and better interest rates. Additionally, online banking eliminates the need for customers to visit physical branches, saving them valuable time that they would otherwise spend waiting in line at the bank or traveling to get there. While there are many concerns about information security, internet banking has made tremendous strides in ensuring the security of customer information and transactions. Banks use advanced encryption techniques and strong security protocols to protect sensitive customer data from unauthorized access or cyber threats, applying international security standards. In addition, most institutions offer additional security measures such as two-factor authentication, transaction verification and alerts, which provide customers with confidence and serenity while using online banking services.

The transition from traditional to digital banking has been gradual and consists of different degrees of digitization of the banking service. Digital banking leverages advanced automation and internet-based processes, often incorporating application programming interfaces (APIs) to facilitate seamless integration of services across institutions. It enables users to perform secure transactions and access financial information through various platforms, including desktops, mobile devices, and ATMs. Some of the key benefits of digital banking are: business efficiency, cost savings, increased accuracy, improved competition, greater agility, and improved security. The services that digital banks offer include: monitoring and control of the bank account, bill payments, sending and receiving money, simple and secure control for debit and credit cards, loans, financial advice, etc. The range of banking transactions available online differs across institutions. Most banks provide essential services like fund transfers and bill payments. Additionally, some banks enable customers to open new accounts and apply for credit cards via their online portals. However, online banking does not support certain transactions, such as purchasing traveler's checks or bank drafts, or completing specific credit applications like mortgages. Regardless of the weaknesses listed above, a careful use of e-banking and the application of security rules bring many benefits from its customer-friendly services. To make the e-banking experience a smooth process, sites that are known and trusted should be used and the password should never be shared with an unknown person. The banking sector in Albania stands out as one of the most advanced

in terms of digital infrastructure, largely due to the presence of international banks that introduce best practices. Digital banking usage is nearly universal, while mobile internet penetration exceeds 61%, indicating that a significant portion of the population has constant access to a device for receiving services and, in particular, making payments. Online transactions not only efficiently meet the needs and desires of customers but have become a necessity. Banks will be forced to allocate significant parts of their budget to the development of technologies such as e-banking, mobile banking, digital branches, etc. Electronic banking transactions have already become part of the technological revolution and Covid 19 has given an extraordinary impetus to the development of the electronic banking market in Albania as well.

The main purpose of this paper is to analyze the factors influencing the use of Internet Banking in Albania. The sample of the study will be the customers of some second level banks and the focus will be on the customers' point of view in terms of banking applications, Internet Banking as a whole, the security they feel about the transactions they carry out, the practicality and the difficulties they may have encountered. This paper aims to show how Internet Banking can and is becoming the future of banks, a near future where everything will be done online.

2. LITERATURE REVIEW

Online Banking refers to conducting financial activities through a bank's website. It allows individuals and businesses to manage accounts, transfer funds, or obtain information about financial products at any time and from any location with Internet access (Shao, 2007). Through Online Banking, users can complete their banking tasks swiftly and conveniently without the need to leave their homes or workplaces. Additionally, Online Banking reduces transaction expenses for customers (Dong, 2008). Digital banking refers to the online transformation of traditional banking operations and software services that were once accessible only within a physical bank branch. This encompasses tasks such as depositing and withdrawing funds, managing checking and savings accounts, applying for financial products, overseeing loans, paying bills, and accessing various account-related services. The rise of internet technology has fundamentally reshaped how companies and businesses deliver their services, ushering in numerous innovations in customer service (Sabi, 2014).

Banks began leveraging Internet technology to deliver financial and banking services. Technological advancements have enabled the swift exchange of information, simplified the marketing of banking products, and enhanced customer accessibility and awareness (George & Gireeshkumar, 2012). The internet offers banks strategic tools to transform their operations fundamentally. A notable quote from the Financial Times in 1996 states, «Banking is essential to a modern economy, banks are not» (Tan & Teo, 2000). Unlike other online transactions, adopting Internet Banking tends to be more intricate, as it establishes a long-term relationship between the bank and the customer. This process is significant for customers as they start engaging with Internet Banking services without forming a direct personal connection (Lee, 2009; Liao et al., 1999). Joseph and Stone (2003) explored the influence of the Internet on delivering banking services. Their research identified six key dimensions of e-banking service quality: convenience and accuracy, feedback and complaint handling, efficiency, queue management, accessibility, and personalization.

Meuter et al. (2000) identified key factors influencing customer satisfaction and dissatisfaction in technology-based service interactions. As business-to-business transactions represent the fastest-growing segment of technology-driven services, Meuter and colleagues recommended exploring

the factors that influence business customer satisfaction or dissatisfaction in such contexts. Internet banking enables customers to access their bank accounts online using a computer, mobile device, and web browser. It is recognized as a banking service that allows users to manage and perform financial transactions in their accounts through an Internet connection (Moa et al., 2017). The advent of online banking has enabled banks to offer a range of products and services digitally. This innovation benefits both customers and banks. For banks, it helps lower operational expenses and staffing costs while fostering closer connections with customers by delivering cost-effective services with enhanced convenience, significant time savings, and quicker responses (Nethananthan & Shanmugathas, 2018). Perceived usefulness has emerged as a key factor influencing the adoption of online banking (Pikkarainen et al., 2004). Banks have made substantial investments in developing internet-based platforms, leading to rapid growth of Internet Banking in many countries and revolutionizing traditional banking practices. Also, Internet Banking will continue to transform the traditional banking sector, offering more opportunities to improve customer service through better interaction, data analysis, and personalized services. Internet Banking systems allow bank customers to access their accounts and obtain general information about the bank's products and services via the bank's website, eliminating the need for physical mail, faxes, original signatures, or phone confirmations. These services enable customers to search for information and perform most traditional retail banking tasks, such as opening accounts or transferring funds between accounts, as well as new banking services like making electronic payments online through a telecommunications network, all without leaving their home or office.

In relationship marketing studies, the concepts of customer satisfaction and loyalty are key. The significance of customer retention is underscored by the recognition that customer satisfaction fosters loyalty, which ultimately contributes to a firm's profitability (Chen & Hitt, 2002). Many researchers have continued to explore the strong connection between service quality and customer satisfaction. As a rapidly evolving and modernized area, internet banking requires different service quality dimensions compared to traditional banking. If customers are satisfied with the services provided by internet banking, they are more likely to adopt it. The future of banking technology is driven by consumer needs. A prevalent trend in banking technology involves utilizing an application programming interface (API) to grant access to proprietary data, provided the consumer permits it. APIs can be used to allow a bank's mobile app to retrieve customer account details. Fintech companies have also adopted API technology to support their operations, and their success is motivating competitors to develop their own APIs. Furthermore, Business Insider Intelligence revealed that 48% of banking executives believe emerging technologies like blockchain and artificial intelligence (AI) will have the most significant impact on banking. According to the same source, banks are exploring blockchain technology in an effort to streamline operations and cut costs.

3. RESEARCH METHODOLOGY

Sample and Data: This study uses primary data collected through a survey of 400 customers who use e-banking services in various commercial banks in Albania for 2024. To determine the appropriate sample size for a finite population, a two-step approach was followed. The first step involved calculating the sample size for an infinite population, which required considering the population proportion, the desired confidence level, and the Z-score for normal distribution. The second step focused on computing the finite sample size using the collected data. By applying a 5% confidence interval, the optimal sample size for the study was determined to be 385. This methodology ensures that the sample accurately represents the target population while maintaining a high level of statistical reliability. The use of these techniques allows for the effective analysis of customer perceptions and

behaviors regarding e-banking services in Albania, providing valuable insights into the adoption and usage patterns of digital banking. The findings from this study can inform strategies for improving e-banking services and customer satisfaction in the Albanian banking sector.

Econometric model: This study uses the multiple linear regression model, which aims to estimate the relationship between a dependent variable and several independent variables. It is a widely used and powerful statistical tool in various research applications. The questionnaire used in the study includes questions based on a Likert scale ranging from 1 to 5, with responses classified from the lowest to the highest level. This type of measurement provides the necessary variation for applying linear regression, allowing for an accurate analysis of the factors influencing the dependent variable. Multiple linear regression is particularly useful in this context as it helps assess the impact of multiple independent factors simultaneously, providing a comprehensive understanding of the relationships between variables. The approach is fundamental for identifying key predictors and drawing meaningful conclusions based on the data collected.

$$Y = \beta_0 + \beta_1 X + \beta_2 I_{X_1} + \beta_3 I_{X_2} + \beta_4 I_{X_3} + u \quad (1)$$

Where,

- Dependent variable (the primary focus of this study);
- Independent variables (additional factors that influence the dependent variable or contribute to its variation);
- β_i = regression coefficients that estimate the degree of influence of each independent variable on the dependent variable (assuming all other factors remain constant);
- u_i = error term (representing all variables not included in the model).

The regression model is based on the following key assumptions (Verbeek, 2017):

- A linear correlation between the dependent and independent variables;
- The independent variables are not strongly correlated with one another;
- The residuals' variance remains constant;
- Observations are independent of one another;
- Multivariate normal distribution.

To clearly differentiate the dependent variable from the independent variables, we provide the following explanation. The dependent variable is an index composed of several sub-factors, each measured on a Likert scale ranging from 1 to 5. *Y = {The level of e-Banking usage declared by consumers of the banking system}* where $Y = (Y_1 + Y_2 + Y_3 + Y_4 + Y_5)/5$.

- Y_1 = Regularly uses of internet banking for various financial transactions;
- Y_2 = Internet banking is preferred method of managing my finances;
- Y_3 = Experienced assessments using Internet banking;
- Y_4 = Accessibility of internet banking services anytime and anywhere;
- Y_5 = I would recommend Internet banking to others based on my experience.

X = {Level of personal monthly income, divided into four groups} and other independent variables in index form are Ix_1, Ix_2 and Ix_3. These indices are categorized into several sub-factors (measured on a Likert scale from 1 to 5). Ix_1 = *{Assessment of customer awareness for e-banking}* where $I_{X_1} = (X_{11} + X_{12} + X_{13} + X_{14})/4$.

- X_{11} = Internet banking is a convenient alternative to traditional banking methods;
- X_{12} = I am aware of the services and features offered by internet banking;

- X_{13} = Internet banking gives me better control over my finances;
- X_{14} = I am aware of the benefits of using online banking.

Ix_2 = *{Assessment of easy use of e-banking as perceived by the consumer}* where $I_{X_2} = (X_{21} + X_{22} + X_{23} + X_{24} + X_{25}) / 5$.

- X_{21} = The process of using internet banking is simple and straightforward;
- X_{22} = I find it easy to navigate through the online banking platform;
- X_{23} = I can quickly carry out banking transactions using internet banking;
- X_{24} = Learning how to use internet banking is uncomplicated;
- X_{25} = Internet banking interface is convenient and intuitive.

Ix_3 = *{Evaluation of the perception of security in e-banking}* where $Ix_3 = (X_{31} + X_{32} + X_{33} + X_{34} + X_{35})/5$.

- X_{31} = I believe my personal information is safe when using internet banking;
- X_{32} = Internet banking has adequate security measures to protect my financial data;
- X_{33} = I am confident that my online transactions are secure with internet banking;
- X_{34} = Internet banking uses encryption and other security protocols effectively;
- X_{35} = The bank provides clear and transparent information about the security measures in force for Internet banking.

4. EMPIRICAL RESULTS AND FINDINGS

To summarize the relationship (strength and direction of the connection) between variables, we calculated the following coefficients (Table 1).

Table 1. Descriptive statistics and variables' correlation.

	Correlation					Descriptive	
Variables	**Y**	**X**	**I_{X1}**	**I_{X2}**	**I_{X3}**	**Mean**	**St. deviation**
Y	1.0000					3.84	0.52
X	0.3314	1.0000				2.19	0.56
I_{X1}	0.5693	0.2387	1.0000			3.78	0.53
I_{X2}	0.5846	0.2645	0.6730	1.0000		3.79	0.55
I_{X3}	0.6332	0.3022	0.5561	0.5551	1.0000	3.82	0.51

Note: "*" for statistical significance level of p < 1%.

Source: Authors' calculations in EViews 12.

Table 2. Model estimation for the "e-Banking use"

Dependent variable: I_Y	**Coefficient/parameters**	**Significance**
Constant	0.7779	0.0000*
Independent variables:		
X	0.0974	0.0039*
I_{X1}	0.0979	0.0306**
I_{X2}	0.2406	0.0000*
I_{X3}	0.4115	0.0000*
Adjusted R^2	0.5339	
F-statistic	92.2085	0.0000*

Note: "*" for statistical significance level of p < 1% and "**" for statistical significance level of p < 5%.

Source: Authors' calculations in EViews 12.

Based on the correlation matrix for these indexes (model variables) shows positive statistical significance for all variables. Although some variables have high value of correlations, all of them are less than 0.7 (so it is not expected to have multicollinearity of the model). Based on the empirical

analysis of the multiple regression model in the Albanian banking sector, we identify the relationship between the dependent variable "the extent of e-Banking usage reported by consumers of the banking system" and the independent variables revealed in Table 2:

The generalized form of the model is:

$$Y = 0.78 + 0.09X + 0.09I_{X_1} + 0.24I_{X_2} + 0.41I_{X_3} + 0.21u_{i-1} + u_i \quad (2)$$

The model demonstrates a good explanatory power with a coefficient of determination of 53% and is statistically significant, with a p-value less than 1% (Fisher's test). The model indicates that the dependent variable "*e-Banking usage*" has a positive and statistically significant relationship (with significance level $p < 5\%$) with:

- X = *{level of personal monthly income, divided into four groups},* if it will be an increasing trend in the *personal monthly income*, by a Likert scale for this variable, in that case, this will increase the *e-Banking usage*, with 0.09 Likert scale or 9%.
- I_{x1} = *{assessment of customer awareness for e-banking},* if it will be an increasing in the *customer awareness for e-banking* by a Likert scale for this index, in that case, this will increase the *e-Banking usage*, with 0.09 Likert scale or 9%.
- I_{x2} = *{assessment of easy use of e-banking as perceived by the consumer},* if it will be an increasing in the *customer easy use of e-banking* by a Likert scale for this index, in that case, this will increase the *e-Banking usage*, with 0.24 Likert scale or 24%.
- I_{x3} = *{evaluation of the perception of security in e-banking},* if it will be an increasing in the *customer security in e-banking* by a Likert scale for this index, in that case, this will increase the *e-Banking usage*, with 0.41 Likert scale or 41%.

For the model to be considered valid and applicable for evaluating and predicting similar phenomena in the future, it will undergo testing for the error term or residuals.

Table 3. Residual tests.

The test	Description of hypothesis	Test result
Multicollinearity: VIF-test-Variance inflation factors	This test assesses whether the independent variables are correlated with the residuals or errors of the model. *Null hypothesis:* model does not have multicollinearity	Based on the VIF test all independent variables are less than 10 d.m.th our model does not have multicollinearity.
Heteroskedasticity: Breusch-Pagan Godfrey-statistic	This test evaluates whether the residuals of the model have constant variance or not. *Null hypothesis:* model does not have heteroskedasticity	Based on the test null hypothesis do not reject, so the model has no heteroskedasticity.
Normality of the residual distribution: Jarque-Bera-test	This test determines whether the residuals of the model follow a normal distribution or not. *Null hypothesis:* the residual of the model has normality distribution.	Based on the test null hypothesis do not reject. So, the model has no problem with normality distribution of residual.

Source: Authors' calculations in EViews 12.

This model has successfully the main criteria of creating efficient models according to the main assumptions (Table 3), hence the model is statistically useful to explain the direction and strength correlations of the variables.

5. CONCLUSION

E-Banking has revolutionized banking, providing customers with convenience and accessibility. Through digital channels like online platforms, mobile apps, and ATMs, customers can conduct a wide array of banking activities anytime and anywhere. Additionally, e-Banking empowers customers with enhanced financial control and visibility. Through real-time monitoring, spending tracking, and alert setups, they can make informed decisions and manage finances effectively. Nevertheless, security and privacy remain paramount concerns, necessitating robust cybersecurity measures to foster trust. Moreover, while e-Banking offers numerous benefits, not all customers may find it suitable due to digital literacy or accessibility issues. In this aspect, this study reveals a clear relationship between various factors and e-Banking usage. Factors like as personal monthly income, customer awareness, ease of use of e-banking, and the perception of security all play significant roles. However, the most influential factor is the perception of security, with a substantial 41% increase in security perception corresponding to higher e-banking usage. Personal monthly income demonstrates a positive correlation with e-Banking usage, suggesting that as income increases, individuals are more likely to utilize e-Banking services. Customer awareness plays a crucial role, with higher levels of awareness associated with increased e-Banking usage. The ease of use of e-Banking platforms significantly influences usage patterns, highlighting the importance of user-friendly interfaces and functionalities. The perception of security emerges as a key determinant, with a strong sense of security leading to higher e-Banking adoption rates. Commercial banks in Albania must address many challenges, ensuring inclusivity, security and providing support to facilitate e-Banking adoption across diverse customer segments. Improvement continuously of the e-Banking platform's user implementation and provide user-friendly features to make e-Banking accessible to users of all technological proficiency levels. The great priority should engage in robust security measures to strengthen customers' perception of security in e-Banking. Employ advanced encryption technologies, multi-factor authentication, and real-time fraud detection systems to safeguard customer data and transactions.

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