

Leveraging Electronic Banking Services as a Source of Competitive Advantage. New Era in Agricultural Firms and Agricultural Advisory

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Abstract: The integration of electronic services into the banking system has brought about transformative changes in various industries, including agriculture. The agricultural sector can benefit significantly from the adoption of electronic banking services, which offer efficient and streamlined financial transactions, improved access to credit, and enhanced financial management.

The aim of the research is to examine the importance of digital transformation in the bank system as well as the importance of electronic services which are used as a digital competitive advantage in the context of the universal competition of all firms including the agricultural. The paper uses the Bank of Piraeus as a case study and specifically examines the opinions of bank employees of the bank about the electronic services which are used. The results of the research indicate the significance of bank electronic services in relation to time and economy for the function of the bank as well as reassure the need for digital transformation of the area. Also, according to the findings of the research the only ambiguity which appears is the safety of electronic services.

Keywords: Digital transformation, competitive advantage, electronic services, agricultural firms, Piraeus Bank, agricultural advisory.

INTRODUCTION

The digital transformation of banks is a new reality with significant digital achievements to date. Electronic banking is based on two pillars: on the one hand, information and communication technologies, which drove the economy and society where it is today through automation and digitalization, and on the other hand in innovation which utilizes technology affecting the performance of businesses and by extension the states themselves.

The transformation of the bank branch into a transaction channel with the aim of reducing its operational costs is done through various electronic services such as e-banking and the Automatic Payment System (APS) which act as a competitive advantage in the context of the digital banking transformation (Pollalis *et al.*, 2007).

In a more general context, digital transformation refers to the process of integrating digital technology into businesses and their adaptation to this transition. The use of technology focuses on the radical change in the way of management, operation and service used by businesses. The emphasis is on how it is integrated into all areas of a firm (Georgopoulos *et al.*, 2013). The digital era is driving businesses to identify a competitive advantage in order to ensure their long-term survival in the global market by leaving behind both traditional ways of thinking and operating (Aggelis *et al.*, 2005).

Digital transformation is not about a static and passive process but on the contrary it is an evolutionary process that presents a continuous evolving course which in order to achieve needs a vision (Accenture, *et al.* 2017). In the agricultural sector the use of electronic banking services and digital transformation can both perform as a competitive advantage and create a new era in agricultural advisory (Reinhardt, 2023). According to the existing literature (Fabregas, *et al.* 2019, Rotz *et al.*, 2019, Demestichas *et al.*, 2020, Demirgüç-Kunt *et al.*, 2020, Pazarbasioglu *et al.*, 2020, Birner *et al.*, 2021) the pros, cons, opportunities and challenges for integration can be summarized as follows:

1. Pros of Electronic Banking Services for the Agricultural Sector

a) Improved Access to Financial Services: Electronic banking facilitates remote access to financial services, enabling farmers in rural areas to conduct transactions, access credit, and manage their finances conveniently. This increased accessibility can enhance financial inclusion in the agricultural community.

b) Efficient Payment Systems: Electronic payment systems like mobile banking and online transfers streamline payment processes for agricultural produce, ensuring timely and secure transactions. This can help farmers receive payments promptly and efficiently.

c) Access to Credit: Electronic banking platforms provide a mechanism for banks and financial institutions to assess cre-

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ditworthiness more accurately. This improved credit evaluation process can lead to increased access to credit for farmers, promoting investment and growth in their agricultural activities.

d) **Financial Management and Reporting:** Electronic banking services offer real-time financial tracking and reporting, enabling farmers to monitor their cash flow, expenses, and profits effectively. This enhanced financial management can lead to more informed decision-making and improved profitability.

e) **Efficient Fund Transfers:** Electronic banking enables seamless fund transfers between different stakeholders in the agricultural value chain, including suppliers, buyers, and distributors. This expedites the overall transaction process, benefiting all parties involved.

2. Cons of Electronic Banking Services for the Agricultural Sector

a) **Limited Digital Literacy:** In rural and remote agricultural communities, there may be limited digital literacy and awareness of electronic banking services. This can create barriers to adoption and usage among farmers.

b) **Infrastructure Challenges:** The successful implementation of electronic banking services requires robust digital infrastructure, including reliable internet connectivity and access to smartphones or computers. In regions with poor infrastructure, the benefits of electronic banking may be constrained.

c) **Cybersecurity Risks:** Electronic banking services introduce cybersecurity risks, such as data breaches and online fraud. The agricultural sector, often comprising small-scale farmers, may lack the necessary resources and expertise to address these risks adequately.

d) **Dependence on Technology:** Relying heavily on electronic banking services may lead to dependency on technology, making farmers vulnerable to disruptions in case of technical failures or system outages.

e) **Cost of Adoption:** Implementing electronic banking services may entail initial setup costs and ongoing maintenance expenses, which could be challenging for small farmers or underfunded agricultural cooperatives.

3. Opportunities for Integration

a) **Access to Financial Information:** Electronic banking services can provide real-time access to financial information, enabling agricultural advisors to monitor the financial status of farmers and agribusinesses. This data-driven approach enhances financial planning and enables advisors to offer tailored recommendations based on the clients' financial health.

b) **Customized Financial Solutions:** By integrating banking services, agricultural advisors can offer customized financial solutions, including loan products, credit lines, and insurance options, based on the specific needs and risk profiles of farmers. This personalized approach fosters financial inclusion and boosts agricultural productivity.

c) **Efficient Payment Systems:** Electronic payment systems integrated with advisory services facilitate smooth and timely payments for agricultural inputs, services, and produce. This seamless transaction process fosters trust between farmers and their advisors and enhances overall efficiency in agricultural operations.

d) **Digital Records and Reporting:** The integration of electronic banking services allows for the digital recording and reporting of financial transactions. This streamlines financial record-keeping for farmers and advisors, leading to better financial accountability and transparency.

4. Challenges of Integration

a) **Digital Divide:** In regions with limited digital infrastructure and connectivity, farmers and agricultural advisors may face challenges in adopting electronic banking services. Bridging the digital divide is critical to ensure equitable access to these integrated solutions.

b) **Data Privacy and Security:** The integration of banking services with agricultural advisory involves handling sensitive financial data. Agricultural advisors must implement robust data privacy and security measures to safeguard farmers' information.

c) **Technical Training:** Agricultural advisors may require training on how to effectively utilize electronic banking tools and interpret financial data for informed decision-making. Capacity building and technical assistance are essential for successful integration.

d) **Limited Financial Inclusion:** While electronic banking services can improve financial inclusion, some farmers may still lack access to formal financial institutions. Addressing this issue requires innovative approaches to reach underserved populations.

In this context, the European Union sets as a key priority the formulation of appropriate policies aimed at the utilization of new technologies in Europe. The goal is to create new opportunities for both businesses and consumers. The European Union defines digital transformation as the impact that digital technologies have on society itself and, based on this, supports digital transformation as part of the green transition aimed at climate neutrality by 2050.

(<https://www.europarl.europa.eu/news/el/headlines/society/20210414STO02010/diamorfosi-psifiakou-metascchismatou-epexigisi-tis-stratigikis-tis-ee>)

Taking into consideration all the above information as well as the existing literature the aim of this research is to investigate electronic services as a competitive advantage in the banking industry. In more detail, the opinions and attitudes of Piraeus Bank employees regarding electronic services in the cities of Serres and Thessaloniki are examined. The research is characterized as descriptive, as it examines Greek employees in a private bank, as it is also considered cross-sectional, as it examines the results at a given point in time.

The paper is organized as follows: Section 2 presents the research methodology, while in section 3 the results are presented. Finally in Section 4 the main conclusions and their

potential implications are discussed, along with thoughts for further study and research.

MATERIALS AND METHODS

This specific research analyzes the concept of digital transformation in relation to the banking industry. The originality of the subject is based on the fact of investigating the specific relationship but this time from the workers' side.

This particular research used both the primary quantitative method and the secondary one. In the first, primary quantitative method, data is collected using predetermined means to yield statistics for analysis (Cresswell *et al.*, 2003)2640 . They used secondary research for the theoretical framing of the subject under study.

Quantitative research was chosen to investigate the prevailing trend regarding the evaluation of online banking services. Through quantitative research statistical comparisons are possible, measuring theoretical concepts through tools such as the questionnaire but also trying to generalize with larger populations (Thompson *et al.*, 2010).

The research tool that was used was the structured questionnaire which was distributed electronically to Piraeus Bank employees.

The creation of the questionnaire took into account characteristics such as completeness, clarity, coherence, appropriate structure, being short and able to be coded and processed, which are characteristics of a correct and successful research (Javeau, *et al.* 2000).

In total the questionnaire contained 28 questions and consisted of 4 parts. Specifically, the first part consisted of demographic questions (4 questions) in order to form a social profile of the research participants. Then in the second part, the questions related to electronic services and in particular the E-banking system (6 questions), Automatic Payment System (APS) (4 questions) and Automated Teller Machines (ATM) (5 questions). The third part of the questionnaire (3 questions) refers to the importance factors of the use of electronic services and finally the fourth part includes 6 questions regarding the electronic services of the Piraeus bank in particular.

The analysis of the questionnaire was based on statistical and mathematical models in order to have safe and valid results. Both the distribution and collection of the questionnaires were done electronically through the use of e-mail. The data from the collection were coded and classified through the computer using Windows Excel 2010 program and analyzed through the statistical package Jasp 0.16.3.0. The duration of the research lasted one month from March 15 to April 15, 2023.

The results of the questionnaire were measured using a Likert scale with a four-point scale of importance from "Not at all Important" to "Very Important" as well as a five-point scale of agreement, from "Strongly Agree" to "Strongly Disagree" (Benos, *et al.*,1997)

Finally, a statistically significant result was considered at the $\alpha = 0.05$ level while P - value < 0.05 is valid. Tables were created indicating the distribution of demographic data as well as tables with percentages of respondents' responses. At

the same time, there was a visualization of the data with graphs for in order to get a better understanding. Finally, the research confirmed the internal consistency reliability between the correlations examined within the questionnaire using Cronbach's Alpha index. When the specific index receives values greater than 0.7 or 0.8 is considered satisfactory and therefore the research continues.

The specific indicator measurement here was done via Jasp and its value was evaluated with frequentist Scale Reliability Statistics.

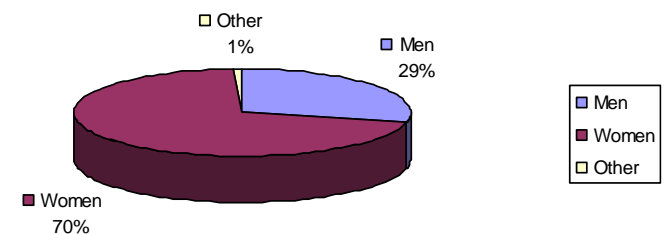
Frequentist Scale Reliability Statistics

Estimate	Cronbach's α
Point estimate	0.747
95% CI lower bound	0.682
95% CI upper bound	0.813

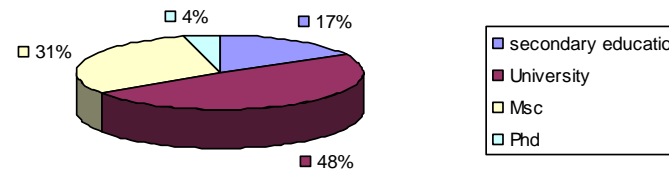
From the above it appears that the reliability factor is $0.74 > 0.70$ therefore the questions have a correct degree of reliability, over 70% and therefore do not need to be rejected.

RESULTS

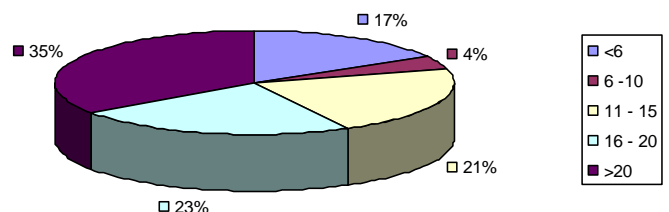
In this particular research, women dominate by 70%. The level of education of employees at Piraeus Bank is very high. The majority hold a university degree and a master's degree. There is a percentage, although a small one, that holds a Ph.D .Emphasis is also placed on the fact that the bank's employees have excellent banking experience. They are fully qualified-trained with their main concern how to fulfill the customers' needs.



Graph 1. Gender.



Graph 2. Educational level.



Graph 3. Years of bank experience.

The digital transformation was natural and consequential to affect the economy and by extension the banking industry.

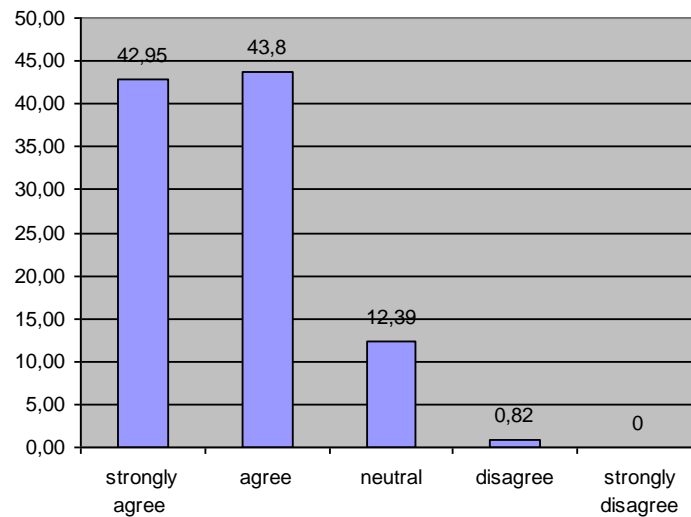


Fig. (1). E-banking contributes to the reduction of operational costs.

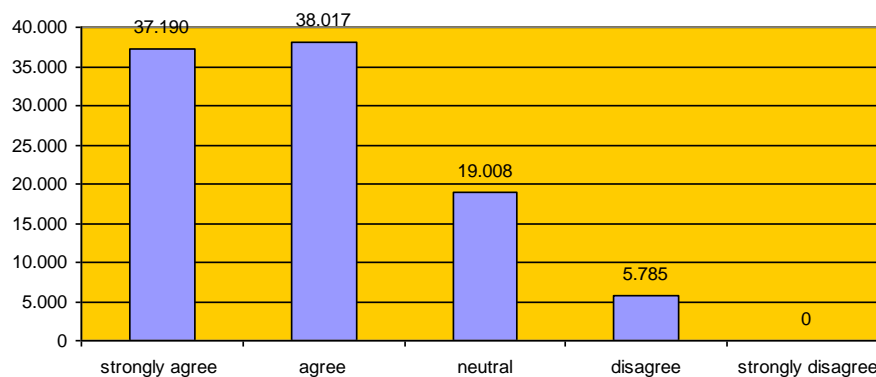


Fig. (2). E-banking has improved the quality of services provided.

Electronic Banking is a combination of both traditional banking and modernization. Through electronic systems, it is possible to reduce transaction processing time, increase productivity, reduce operational costs, etc. (Petrakis, et al., 2010).

Modern technology has acted as the means to interconnect financial information systems globally. The main goal is the continuous operation of the economic system (Sinanioti, et al., 2010).

On the one hand, the pressure increased due to external competition between other banks and on the other hand, the need to reduce operating expenses increased. They aim at upgrading services resulting in the adoption of new technologies

Through the network of Automatic Payment Systems (APS), the customer is given the possibility to easily and quickly manage his transactions. The transactions that can be carried out are only related to payments and money transfers. It is a managed payment processing service and through APS the customer can manage payments and money transactions. (<https://rechargepayments.com/glossary/automatic-payments/>).

Finally, ATMs are one of the first forms of electronic services in the course of the banking industry. They appeared in the effort of banks to save time, cost and effort from the

functionality of a bank and its human resources. The idea for the construction of such a machine started from the need to facilitate and serve the customers of bank branches outside of business hours. The project began to take shape with the development of computers after the war (<https://www.sansimera.gr/articles/1252>).

Bank employees by 86.7% either completely agree or agree that the e-banking service contributes to the reduction of operational costs (Fig. 1). 75% either completely agree or agree that e-banking has improved the quality of services provided (Fig. 2). It reduced the workload of bank employees by 77%. (Fig. 3)

Continuing the research, it is understood that in the questionnaire, 2/3 of the sample agrees with the fact that interpersonal relationships between employees and customers are reduced due to the APS service, while the percentage that disagrees is much less (3.3%). Finally, out of the 121 people, 8 answered neutrally with the option "neither agree/neither disagree".

Regarding the last question of the questionnaire they present about ATMs, the table below shows that 2/3 of bank employees believe that these machines contribute to the shrinking of banks. This percentage, 82%, represents the majority of the sample. Only about 10% have an opposite opinion and

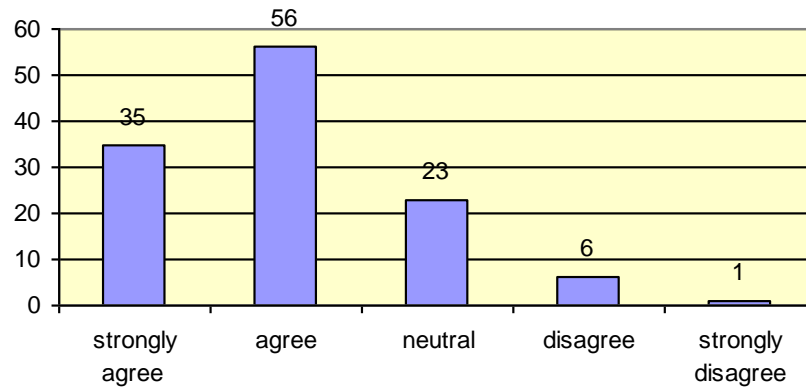


Fig. (3). E-banking reduced the workload of bank employees.

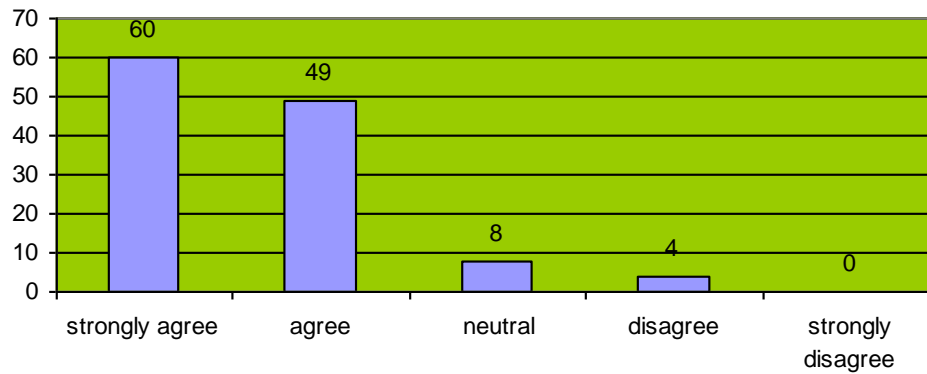


Fig. (4). Interpersonal relationships between employees and customers are reduced.

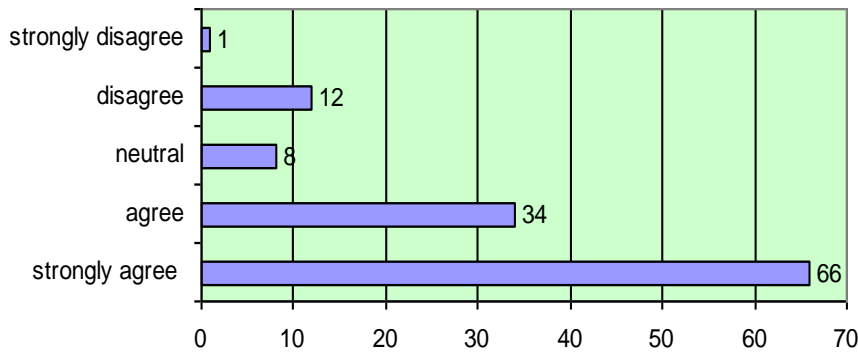


Fig. (5). ATM contributes to the shrinking of banks.

disagree with this statement, while 6.6% express neutrality with the statement "neither agree/neither disagree".

CONCLUSIONS AND DISCUSSION

Mainly based on the research they have carried out, we realize that electronic banking is the transformation of the banking industry, offering a series of positive and negative results. Initially, the operating costs of the banks are reduced, but the fear of shrinking the bank branches increases, reducing the duties of the employees and finally reaching their dismissal.

Due to the growing interest in the subject, and especially the approach of (Konstantinidis *et al.*, 2022) a remarkable finding is the perception of bank employees that electronic media is a threat where it leads to the reduction of interpersonal

contacts and the strengthening of social isolation. Now appears the era where the machine completely replaces the human. The trust that exists between employees and customers is lost. Confidence is an important factor where it affects financial markets. Investments, the provision of loans and all banking operations where they are offered are determined by a degree of risk. Building trust between the customer and the bank employee, where he represents the specific bank branch, is important for the creation of a long-term relationship that will bring multiple benefits for both the customer and the banking institution.

On the contrary, employees recognize the high level of services provided by banking institutions. They feel confident about the security provided by them. From the literature (Turban *et al.*, 2021) and (McKinsey & Company, 2021) we find that electronic services where provided by banks are

evolving day by day, having timidly made their appearance the first digital stores. The customer is given the opportunity to carry out any transaction he wishes quickly, easily and with great security, at any time of the day, 24 hours a day.

Moreover, the integration of electronic banking services in agricultural advisory holds immense potential to transform the sector by improving financial access, streamlining payment systems, and enabling data-driven decision-making (Hasan *et al.*, 2019). By offering tailored financial solutions and enhancing financial literacy, agricultural advisors can empower farmers to make informed financial decisions and foster sustainable growth (Kountios *et al.*, 2023). To overcome challenges related to the digital divide, data security, and technical training, stakeholders must collaborate to create an enabling environment for seamless integration. Overall, the integration of electronic services and information and communication technologies in general, in agricultural advisory, represents a promising avenue for enhancing the financial resilience and prosperity of the agricultural sector and can also be an integral part regarding the wider application of good agricultural practices by the farmers (Kountios, *et al.*, 2022).

Concluding the current research it is important to mention that the limited literature on the specific subject should be a limitation of the research. In spite of the fact that the research was carried out in the cities of Serres and Thessaloniki, with massive participation of employees, can lead to safer conclusions. In addition, the distribution of the questionnaire was also carried out by mail, a reason explained why participation was universal.

Finally, we should point out that the banking industry, combined with the digital transformation, and the fact of direct dependence, will be a step of future research for the authors of this paper. The digitalization of banking transactions as well as the attitude of employees regarding the positive and negative elements that are created, are a concern for the researchers of this work. The main concern is the use of the results of this work. A study of another bank branch in Greece or even in another European country could be carried out. Discovering the views and attitudes of employees in conjunction with the local community they live in and the bank they work for.

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