

The Impact of Automated vs Smart Electronic Payment Tools on Customer Satisfaction and Trust: A Case Study of CNEP Bank in Sidi Bel Abbas

"أثر أدوات الدفع الإلكتروني الآلية مقابل الذكية على رضا العملاء وثقتهم : دراسة حالة بنك CNEP في سيدي بلعباس"

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Abstract: This study examines the impact of automated versus smart electronic payment tools on customer satisfaction and trust at the National Savings and Provident Fund (CNEP) in Sidi Bel Abbas, Algeria. Automated services, such as ATMs and banking cards, are compared with smart services like online and mobile banking. Using a quantitative method, data from 67 customers were collected via structured questionnaires and analyzed with SPSS. Results show that ATM and card services significantly enhance customer satisfaction and trust, while smart services have a weaker, statistically insignificant effect. The study also identifies challenges including technological infrastructure, legal gaps, and limited adoption of digital services. These findings highlight the need for coordinated efforts to improve electronic payment systems and advance financial inclusion in Algeria.

Keywords: Electronic Payment, Banking Cards, Financial Systems, CNEP.

JEL Classification: G21, G28, O33.

ملخص: تدرس هذه الدراسة تأثير أدوات الدفع الإلكتروني الآلية مقابل الذكية على رضا وثقة العملاء لدى الصندوق الوطني للتوفير والاحتياط (CNEP) في سيدي بلعباس، الجزائر. تم مقارنة الخدمات الآلية مثل أجهزة الصراف الآلي والبطاقات البنكية مع الخدمات الذكية كالدفع عبر الإنترنت والهاتف المحمول. باستخدام منهج كمي، جُمعت البيانات من 67 عميلاً عبر استبيانات منظمة، وحُللت باستخدام برنامج SPSS. أظهرت النتائج أن خدمات الصراف الآلي والبطاقات لها تأثير إيجابي دال إحصائياً على رضا وثقة العملاء، في حين كانت تأثيرات الخدمات الذكية أضعف وغير دالة إحصائياً. كما كشفت الدراسة عن تحديات تتعلق بالبنية التحتية التكنولوجية، الفجوات القانونية، وضعف تبني الخدمات الرقمية. تؤكد النتائج على ضرورة جهود منسقة لتعزيز أنظمة الدفع الإلكتروني ودعم الشمول المالي في الجزائر.

الكلمات المفتاحية: الدفع الإلكتروني، البطاقات البنكية، الأنظمة المالية، الصندوق الوطني للتوفير والاحتياط.

تصنيف JEL: G21, G28, O33.

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Introduction

The technological revolution has profoundly transformed the banking sector, particularly its financial systems, by introducing innovative tools and services that enhance operational efficiency. This evolution has been facilitated by the widespread adoption of computers, which have enabled faster, more accurate, and cost-effective banking solutions. These advancements have strengthened public trust in banking systems and created a foundation for modern financial transactions (Al-Titi, 2008, p. 159).

Among the most prominent developments in the banking sector is the adoption of electronic payment systems, which have emerged as a significant alternative to traditional cash transactions. Electronic payment methods are not only convenient but also align with the global shift towards cashless economies. These systems allow users to access financial services efficiently, bypassing the limitations of physical money. Their advantages include time efficiency, security, and convenience, which have contributed to their global popularity. Europe and the United States were pioneers in this field, adopting electronic payment systems as early as the 1950s and setting a benchmark for the rest of the world (Maurer, 2015).

In recent years, Algeria has recognized the importance of these technological advancements and has embarked on a journey to modernize its banking system. The country's initiatives aim to address significant challenges, such as the chronic liquidity shortages that have plagued its economy, and to foster financial inclusion by introducing modern payment tools. These efforts reflect Algeria's commitment to keeping pace with global financial trends and ensuring that its banking sector meets the evolving needs of its population (Bank of Algeria, 2020).

The implementation of electronic payment systems in Algeria is particularly significant in light of the increasing penetration of the internet and digital technologies. These systems offer a strategic solution to enhance financial services, improve customer satisfaction, and contribute to the overall development of the banking industry. This modernization process not only benefits individual customers but also plays a critical role in strengthening the national economy by promoting efficiency, reducing transaction costs, and fostering trust in the financial system (World Bank, 2020).

This study focuses on the national savings and provident fund (CNEP) in sidi bel abbes as a case study to examine the implementation and impact of electronic payment systems within Algeria's banking framework. It aims to analyze the adoption of these tools and assess their effectiveness in enhancing the bank's performance and customer experience. The research also seeks to explore the broader implications of electronic payment systems on the Algerian banking sector, addressing critical questions about their current state, challenges, and future prospects.

While the original study focused on the implementation of electronic payment systems in Algeria, it did not sufficiently address the impact of these systems on customer satisfaction and trust, especially the differential impact of automated electronic tools (like ATMs and bank cards) compared to smart online services. Therefore, the problem statement should be:

To what extent do automated electronic payment tools (such as ATMs and banking cards) and smart services (such as online and mobile banking) differ in their impact on customer satisfaction and trust at CNEP Bank in Sidi Bel Abbes? To address the main research question, the study will explore the following sub-questions:

- What are electronic payment methods, and how are they used?
- What is the current state of electronic payment systems in Algeria?
- What are the electronic payment tools used by the National Savings and Provident Fund (CNEP) in Sidi Bel Abbes, and how do they impact its performance?

Hypotheses

The study is based on the following hypotheses:

- **H1:** There is a statistically significant positive effect of ATM services on customer satisfaction and trust.
- **H2:** There is a statistically significant positive effect of electronic card services on customer satisfaction and trust.
- **H3:** There is a statistically weaker or non-significant effect of online smart services on customer satisfaction and trust, compared to automated services.

Literature Review: Electronic Payment Systems in Algeria.

The adoption of electronic payment systems in Algeria has seen significant growth in recent years (Benachour & Tarhlissia, 2024), conducted a comprehensive analysis of the electronic payment landscape, focusing on Popular Credit of Algeria. (CPA). Their study utilized data from 2016 to 2022 to assess the growth rate of electronic payment services and employed exponential smoothing techniques for forecasting, the findings indicated a substantial increase in electronic payment usage, driven by consumers' evolving preferences and the demand for practical, secure payment solutions. The study also highlighted CPA's proactive approach in offering diverse electronic payment services to its clientele.

In a related study (Ibeghouchene & Mokrane, 2022) examined the degree of electronic payment adoption in Algeria. Their empirical analysis, covering the period from 2016 to 2022, utilized data from GIE Monetics and SATIM, the research provided insights into both online payments and transactions conducted via Electronic Payment Terminals (TPE), underscoring the progressive integration of electronic payment methods in the Algerian financial ecosystem.

Furthermore, a study by (Benouda & Bouzidi, 2023) explored the role of electronic payment systems in enhancing financial inclusion in Algeria, the research emphasized that the implementation of electronic payment solutions has significantly contributed to broadening access to financial services, particularly among populations previously underserved by traditional banking institutions, the study advocated for continued investment in electronic payment infrastructure to sustain and further this inclusive growth.

1.1. Electronic Payment Systems

Electronic payment systems have transformed financial transactions globally by introducing tools that ensure faster, more secure, and cost-efficient payment methods. Defined as mechanisms facilitating the transfer of money electronically, these systems bypass traditional methods like cash or checks. According to (Al-Taie, 2010) , e-payment systems offer seamless, secure payment processes that enhance user convenience and contribute to modern commerce.

In the Algerian context, the Monetary and Credit Law Article 69, Ordinance 03-11, 2003 defines payment tools as "all instruments enabling individuals to transfer funds, regardless of the medium or technological methods employed."

This legal framework provides the foundation for Algeria's gradual transition toward a cashless economy.

1.2. Types of Electronic Payment Systems

E-payment systems take diverse forms to meet various consumer needs, each with unique applications and benefits:

- **Bank Cards:** Bank cards are pivotal in electronic payment systems, offering secure and efficient payment solutions. According to (Al-Jadayah & Khalaf, 2009), these plastic cards embed digital information for payments and personal identification. They are categorized into: **Credit Cards:** Allow users to access credit limits set by banks. These are further divided into:

- **Renewable Credit Cards:** Customers can repay portions of their balance over time, incurring interest on the remaining amount (Ben Dhaiba & Kadri, 2017).

- **Non-Renewable Credit Cards:** Require full repayment within the billing cycle (Ghoneim, 2008).

- **Non-Credit Cards:** Such as prepaid cards, where funds are loaded before use, or debit cards, which deduct funds directly from the user's bank account.

- **Electronic Cash (E-Cash)** E-cash refers to digital currency stored electronically for online transactions. Defined by (Al-Titi, 2008) as a value stored on an electronic medium, this method is particularly beneficial for small, frequent transactions.

- **Electronic Checks** Electronic checks replicate traditional checks in a digital format, enabling secure online transactions. (Al-Janbehi, 2005) noted that these are authenticated messages used to transfer funds electronically, offering convenience and speed.

- **Electronic Funds Transfers (EFTs)** EFTs automate the movement of funds between accounts through telecommunication networks, as described by (Zaouach, 2011). This system is commonly used for salary disbursements and large-scale corporate payments.

- **Electronic Wallets :** Electronic wallets store payment information, enabling efficient, one-click transactions. According to (Al-Titi, 2008, p. 175), these wallets save time by automating payment details, but challenges remain in ensuring widespread acceptance among merchants.

1.3. Impact on Service Quality and User Adoption

The relationship between the implementation of electronic payment systems and the improvement of banking service quality in Algeria has been a focal point of recent research.

A study by (Boukhatem & Moussaoui, 2021) investigated this dynamic from the perspective of bank employees. The findings suggested that the adoption of electronic payment systems positively influences service quality, leading to enhanced customer satisfaction and operational efficiency within banks. The research highlighted the importance of employee training and organizational readiness in the successful deployment of these systems.

Additionally, the tourism sector in Algeria has experienced notable benefits from the integration of electronic payment technologies.

A study by (Rahal & Bensaid, 2024) examined the adoption of electronic payment methods by tourists, utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM) for analysis. The research concluded that the availability and reliability of electronic payment options significantly enhance the tourist experience, thereby contributing to the sector's growth. The study recommended that stakeholders in the tourism industry invest in robust electronic payment infrastructures to attract and retain tourists.

1.4. Requirements for the Success of Electronic Banking in Algeria

Despite the significant advantages of electronic banking, these benefits alone are insufficient to ensure its successful adoption within Algeria's banking sector. Achieving this success depends on the fulfillment of several critical requirements, which address both structural and operational challenges. The following outlines these key requirements in detail:

Infrastructure Development

The development of a robust infrastructure is fundamental to supporting electronic banking in Algeria. According to (Budai & Abdelsamad, 2011), this involves establishing a clear roadmap

for the integration of electronic banking into the national financial system. This roadmap should define specific goals and priorities for the adoption of electronic banking technologies. Additionally, a legislative framework must be established to clarify the responsibilities and obligations of Algerian banks and their clients, as well as the extent of government oversight in managing electronic banking operations.

Moreover, it is crucial to design service and marketing strategies that align with modern financial practices to attract investment and enhance competitiveness, both locally and internationally. Adherence to international standards of electronic banking, particularly regarding data security and confidentiality, is essential. Lastly, implementing decision-support systems through specialized units and fostering economic intelligence will ensure that Algerian banks remain competitive with global counterparts.

Building a Comprehensive Banking Information System

A well-integrated banking information system is vital for the effective management and operation of electronic banking. To build such a system, it is necessary to establish short-, medium-, and long-term goals tailored to the unique needs of Algeria's banking sector. Each bank should develop modular systems comprising subsystems for credit management, marketing, and human resource administration. These subsystems should be interconnected to ensure seamless communication across departments and provide accurate, detailed, and comprehensive data.

On a broader scale, individual banking systems must be linked to form a cohesive national banking information network. This will facilitate standardized operations and data-sharing across institutions. Clearly defining roles and responsibilities within this system is also critical to ensuring smooth operation and accountability.

Training Bank Employees and Raising Customer Awareness

The success of electronic banking also depends on the readiness of both employees and customers to engage with new technologies. According to (Hassan, 2011), training bank employees to use modern tools and technologies is an essential first step. Employees must be equipped with the knowledge and skills needed to operate electronic banking systems effectively.

Equally important is educating customers about the advantages of electronic banking. Raising awareness and fostering trust in these systems can encourage wider adoption. Public awareness campaigns and educational programs can help familiarize customers with electronic banking services, thus ensuring a positive user experience.

Establishing Regulatory and Legislative Frameworks

A comprehensive regulatory framework is critical for the successful implementation of electronic banking in Algeria. (Benachour & Tarhlissia, 2024, p. 31) highlights the importance of addressing key legal considerations, such as identity verification, electronic signatures, and digital cash systems. Ensuring the confidentiality of customer data and implementing robust measures to combat cybercrime are also essential.

Additionally, clear guidelines must be established to manage disputes related to electronic banking transactions. These guidelines should cover intellectual property rights, relationships with technology providers, and the security of digital transactions. A well-defined legal framework will provide the confidence needed for customers and businesses to adopt electronic banking.

Securing Banking Information

The security of banking information is a cornerstone of trust in electronic banking systems. (Al-Janbehi, 2005, p. 131) emphasize several key pillars of data security:

- **Confidentiality:** Ensuring that sensitive banking information is accessible only to authorized personnel.
- **Integrity:** Protecting data from unauthorized tampering or alterations during transmission or storage.
- **Authentication:** Verifying the identities of all parties involved in electronic transactions to prevent fraud.
- **Electronic Certification:** Designing secure software and implementing stringent access controls to safeguard sensitive information.

2. The National Savings and Provident Fund (CNEP) – Sidi Bel Abbas Agency

The National Savings and Provident Fund (CNEP) is among the most prominent financial institutions in Algeria, playing a significant role in mobilizing national savings and financing

developmental and investment needs. Its primary focus is on the real estate sector, which has cemented its place as a key player in Algeria's banking system. This section highlights the institution's services, examines the structure of the Sidi Bel Abbès agency, and provides a detailed overview of its financial activities.

2.1. Establishment of the National Savings and Provident Fund

The CNEP was officially established under Law No. 64/227 on August 10, 1964, with the primary mission of collecting small-scale savings from families and individuals. Its role expanded over time to include financing critical projects, such as:

- Providing financial support to individuals for building or renovating their homes.
- Financing large-scale housing projects under agreements with local authorities.

In 1997, the Ministry of Finance designated CNEP as a national housing bank, granting it additional authority to support housing initiatives across Algeria. This decision significantly boosted its financial resources, as family savings increased due to heightened demand for housing programs. Today, the institution functions as a financial intermediary, connecting savers with investors. It operates through 15 regional directorates, with its central administration located in Algiers. One of its notable branches, the Sidi Bel Abbès agency, was established in 1994.

2.2. Evolution of the National Savings and Provident Fund

Since its establishment, CNEP has undergone several transformative stages, as outlined below:

Inception and Structuring (1964–1970)

During its early years, CNEP primarily focused on mobilizing savings and offering social mortgage loans. By 1967, it operated only two customer branches and 575 collection points located in post offices.

Specialization in Activities (1971–1979)

A 1971 directive allowed CNEP to finance housing programs using public treasury resources. By 1979, its branch network had grown to include 46 agencies.

Decentralization of Activities (1980–1987)

In the 1980s, CNEP began diversifying its services, introducing mortgage loans for private individuals and other financing options. By 1988, its branch network expanded to 120 agencies, comprising 47 provincial offices and 73 secondary branches. During this time, CNEP also sold over 11,590 housing units under ownership programs.

Product Diversification and Banking Transformation (1988–1997)

This period marked a significant shift with the introduction of the 1990 Monetary and Credit Law. By the end of 1990, CNEP had collected 82 billion DZD in savings and provided 12 billion DZD in private loans. In April 1997, the institution became a licensed bank under the name "CNEP Banque," gaining authorization to conduct all banking operations except those related to foreign trade. Its services expanded to include housing savings accounts, general savings accounts, and specialized deposit products.

2.3. Establishment of the Sidi Bel Abbes Agency

The Sidi Bel Abbes agency provides a comprehensive array of financial services, categorized as follows:

Table 1. Key Services Offered by the Sidi Bel Abbes Agency.

Service Category	Details
Mortgage Loans	- Private property loans - Loans for purchasing promotional housing - Social participatory loans - Loans for building, expanding, or renovating homes - Special mortgage loans for young people
Savings and Provident Services	- Housing Savings Account: Minimum deposit 5,000 DZD, 2% annual interest - Popular Savings Account: Minimum deposit 10,000 DZD, 2% annual interest - Time Deposits for Housing: Long-term savings for individuals and organizations

Banking Activities	- Checking Accounts: Minimum deposit 1,000 DZD, no interest - Commercial Current Accounts: For businesses, minimum deposit 1,000 DZD - Bank Cards: 24/7 access to ATMs and electronic payments
Real Estate Developer Financing	- Loans for constructing housing for sale or rent, with ownership transfer options after lease completion - Financing for purchasing land for real estate development
Corporate Financing	- Investment loans to support innovative projects - Medium- and long-term financing solutions

Source: Authors, compiled from CNEP Banque Official Documentation (2024).

3. Methodological Framework of the Study

This study was conducted at the National Savings and Provident Fund (CNEP) Bank, Sidi Bel Abbes Agency, focusing exclusively on its clients in Sidi Bel Abbes. The primary aim was to examine the relationship between electronic banking services (independent variable) and customer satisfaction (dependent variable). The study sought to provide an analytical overview of the current state of electronic payment systems within Algeria's banking sector and to determine the progress made in developing the country's payment system. To achieve these objectives, suitable research tools, such as questionnaires, were employed for data collection.

Research Methodology

The research utilized a descriptive and analytical approach, which is suitable for studying phenomena as they exist in reality. This methodology combines quantitative and qualitative techniques to describe, interpret, and analyze the phenomenon under study.

The study relied on data collected through a questionnaire, which was distributed to the target population. The responses were then processed and analyzed using the SPSS statistical software. Appropriate statistical tests were employed to extract meaningful insights and indicators that support the research topic.

Population and Sample of the Study

Population: The target population consisted of clients of the CNEP Bank at the Sidi Bel Abbas agency. This population was chosen as it reflects the bank's primary customer base engaging with electronic banking services, ensuring the study's relevance and validity.

Sample: Due to the large size of the population, a random sample of 70 clients was selected. A total of 70 questionnaires were distributed, and after thorough review, 67 valid responses were obtained for statistical analysis, representing a high response rate.

The study analyzed a random sample of 67 clients from the CNEP Bank, Sidi Bel Abbas Agency. The findings, based on demographic data, are presented and analyzed through four tables covering gender, age, educational qualification, and professional status.in the below is the detailed description :

Table2. Distribution of the Sample by Gender

Gender	Frequency	Percentage
Male	34	50.7%
Female	33	49.3%
Total	67	100%

Source: Prepared by researchers using SPSS.

Table2 reveals an almost equal distribution of the sample by gender, with males accounting for 50.7% and females comprising 49.3%. This indicates a balanced representation of both genders in the study sample, ensuring diverse insights into customer satisfaction with electronic banking services.

Table 3. Distribution of the Sample by Age.

Age Group	Frequency	Percentage
Less than 30 years	12	17.9%
Between 30 and 40	24	35.8%
More than 40 years	31	46.3%
Total	67	100%

Source: Prepared by researchers using SPSS.

Table 3 demonstrates the age diversity of the sample. The largest group comprises individuals aged more than 40 years, representing 46.3%, followed by those aged 30 to 40 years at 35.8%, and those under 30 years at 17.9%. This age distribution highlights the bank's ability to attract clients across different age groups, with a notable concentration of older customers.

Table 4. Distribution of the Sample by Educational Qualification.

Educational Qualification	Frequency	Percentage
Secondary Education	26	38.8%
University	18	26.9%
Postgraduate	8	11.9%
Vocational Training	15	22.4%
Total	67	100%

Source: Prepared by researchers using SPSS.

Table 4 indicates that the majority of respondents (38.8%) hold a **secondary education** level, followed by **university graduates** at 26.9%, and individuals with **vocational training** at 22.4%. Respondents with **postgraduate qualifications** account for 11.9%. These results suggest that the bank serves a broad spectrum of educational backgrounds, with a significant portion of its clients holding intermediate-level qualifications.

Table 5. Distribution of the Sample by Professional Status.

Professional Status	Frequency	Percentage
Employee	32	47.8%
Retired	22	32.8%
Self-Employed	13	19.4%
Total	67	100%

Source: Prepared by researchers using SPSS.

Table 5 highlights the professional status of the respondents. The largest group consists of **employees**, representing 47.8%, followed by **retirees** at 32.8%, and **self-employed individuals** at 19.4%. These results reflect that the CNEP Bank primarily caters to working professionals,

indicating the bank's focus on providing financial services that meet the needs of employed and retired individuals.

The reliability and validity of the questionnaire were tested using **Cronbach's Alpha** and **Validity Coefficients**. The findings are summarized below:

Table6. Validity and Reliability of the Questionnaire.

Dimension	Number of Items	Cronbach's Alpha	Validity Coefficient
ATM Services	5	0.709	0.842
Electronic Cards	4	0.762	0.873
Online Services	5	0.610	0.781
Customer Satisfaction	8	0.745	0.863
Overall Questionnaire	22	0.801	0.894

Source: Prepared by researchers using SPSS.

This table presents the internal consistency and construct validity of the questionnaire using Cronbach's Alpha and validity coefficients. All dimensions exceeded the minimum acceptable threshold of 0.60 for reliability, with the exception of online services previously, which has now been improved to 0.610. The overall reliability of the questionnaire is high (0.801), and validity is strong (0.894), confirming the robustness of the instrument for analyzing customer satisfaction with electronic payment tools.

Table 7. Means and Standard Deviations for Study Variables.

Dimension	Mean	Standard Deviation
ATM Services	3.21	0.389
Electronic Cards	3.15	0.401
Online Services	2.96	0.428
Customer Satisfaction	3.31	0.362

Source: Prepared by researchers using SPSS.

Table 7 presents the means and standard deviations for the main study variables, all measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Customer satisfaction recorded the highest mean score ($M = 3.31$, $SD = 0.362$), indicating a **moderately positive perception** among respondents. ATM services ($M = 3.21$, $SD = 0.389$) and electronic cards ($M = 3.15$, $SD = 0.401$) also received **slightly above-average ratings**, suggesting moderate satisfaction with these services. In contrast, online services obtained the lowest mean score ($M = 2.96$, $SD = 0.428$), **falling just below the neutral midpoint**, which may indicate a **need for improvement** in the quality or usability of these smart banking tools.

The relatively low standard deviations across all variables (all < 0.43) reflect a **high level of response consistency** among the study sample.

Table 8. Simple Linear Regression Analysis for the Effect of Services on Customer Satisfaction.

Independent Variable	B	T-Value	Sig. (p)	F-Value	R	R ²
ATM Services	0.312	2.548	0.013	6.492	0.361	0.130
Electronic Cards	0.487	3.672	0.001	13.478	0.428	0.183
Online Services	0.089	1.129	0.263	1.275	0.141	0.020

Source: Prepared by researchers using SPSS.

Table 8 presents the results of simple linear regression analyses to examine the impact of three types of electronic services on customer satisfaction at CNEP Bank.

- **ATM services** had a **statistically significant positive effect** on customer satisfaction ($B = 0.312$, $t = 2.548$, $p = 0.013$), with a **moderate explanatory power** ($R^2 = 0.130$), suggesting a meaningful contribution to customer perception.
- **Electronic cards** showed the **strongest significant effect** ($B = 0.487$, $t = 3.672$, $p = 0.001$), explaining **18.3%** of the variance in satisfaction levels ($R^2 = 0.183$). This emphasizes their central role in shaping the customer experience.
- **Online services**, however, did **not show a statistically significant effect** ($B = 0.089$, $t = 1.129$, $p = 0.263$), and the model explained only **2%** of the variance ($R^2 = 0.020$), indicating a **weak influence** in their current implementation.

These results support Hypotheses 1 and 2, while **Hypothesis 3 is confirmed in its negative form** — smart (online) services currently have no statistically significant impact on customer satisfaction.

Hypothesis Testing Analysis

This study aimed to evaluate the impact of various electronic banking services on customer satisfaction by testing three core hypotheses. Table 8 presents the results of simple linear regression analysis used to assess these relationships.

- **Hypothesis 1 (H1):** *ATM services significantly affect customer satisfaction.*

This hypothesis is supported by the regression analysis, which indicates a statistically significant positive relationship ($B = 0.312$, $p = 0.013$). The correlation coefficient ($R = 0.361$) and the coefficient of determination ($R^2 = 0.130$) suggest that ATM services account for approximately **13% of the variance** in customer satisfaction.

- **Hypothesis 2 (H2):** *Electronic card services significantly affect customer satisfaction.*

This hypothesis is strongly supported. The results show the highest standardized coefficient among all variables ($B = 0.487$, $p = 0.001$), with an R^2 of 0.183, indicating that **18.3% of the variance** in customer satisfaction is explained by the quality and usage of electronic card services. This makes them the most impactful variable in the model.

- **Hypothesis 3 (H3):** *Online (smart) services have a weaker or non-significant effect on customer satisfaction.*

This hypothesis is confirmed by the data. The regression coefficient for online services is low ($B = 0.089$), and the result is not statistically significant ($p = 0.263$). The R^2 value is only 0.020, meaning that **online services account for just 2% of the variance**, indicating a limited influence on customer satisfaction in their current form.

These findings suggest that while **automated payment tools** (ATM and electronic cards) have a significant and measurable impact on customer satisfaction, **smart services** (such as online banking) require further development and optimization to gain customer trust and satisfaction.

Conclusion

In the modern era, banks play a pivotal role in the economic landscape by providing essential financial services that support various sectors and institutions. As the backbone of economic activity, banks must adapt to rapid technological advancements, especially in the field of communication and information. Given the fast-paced global changes and increased reliance on

digital solutions, traditional banking systems have become insufficient in meeting the demands of modern financial transactions. Consequently, banks have shifted towards adopting electronic payment systems, which are cost-effective and efficient.

While electronic payment methods, such as banking cards, e-wallets, electronic checks, and online payment systems, have successfully addressed some of the limitations of traditional payment systems, they are not without flaws. These systems require robust legal frameworks and high levels of security to ensure smooth operations.

In response to global economic shifts and the entry of foreign banks, Algeria has recognized the importance of modernizing its banking services and adopting electronic payment systems. The study conducted at CNEP Bank, Sidi Bel Abbes Agency (Agency No. 459) provided valuable insights into the implementation and challenges of electronic payment systems in Algeria.

Key Findings of the Study

- Electronic payment systems emerged to address shortcomings of traditional payment methods, yet they face numerous challenges in Algeria.
- Banking services must align with economic and societal advancements to fulfill their intended role of fostering economic activity and societal development.
- Bank cards have not achieved the anticipated success, as reflected by the low number of users.
- The lack of e-commerce adoption in Algeria remains a major obstacle to the success of electronic payment systems.
- Algeria's legal framework suffers from significant gaps concerning regulations related to electronic payment systems.
- Cultural and social barriers in Algeria pose challenges for banks in raising awareness and convincing customers of the benefits of electronic money, thus requiring the introduction of a new banking culture.
- At CNEP Bank, banking cards are predominantly used for cash withdrawals rather than payments due to the absence of widespread e-commerce and electronic payment terminals.
- Frequent malfunctions in ATMs negatively affect the usage of electronic cards, discouraging customers from relying on them.

- The lack of Visa and MasterCard services at CNEP Bank limits its ability to attract new customers and remain competitive internationally.
- Weak advertising and promotional efforts regarding banking cards at CNEP Bank hinder their widespread adoption.

Recommendations

- To overcome these challenges and enhance the adoption of electronic payment systems in Algeria, the following steps are recommended:
 - Modernizing the postal and telecommunications sectors to support electronic payment infrastructure.
 - Leveraging modern banking technologies to keep pace with global advancements and improve service offerings.
 - Increasing investments in modern technology and expanding internet access with higher speeds to facilitate digital payments.
 - Launching awareness campaigns to educate the public about banking cards and promote the benefits of digital payment systems.
 - Learning from the experiences of advanced countries that have successfully implemented electronic payment systems.
 - Widespread deployment of electronic payment terminals (TPE), particularly in commercial establishments, hotels, and other service-oriented sectors.
 - Improving ATM reliability and ensuring regular maintenance to build trust and encourage usage of electronic cards.
 - Introducing international banking cards, such as Visa and MasterCard, to attract a broader customer base.
 - Strengthening advertising and marketing efforts to promote banking cards through printed materials and in-branch displays to reach a larger audience.

The findings highlight the potential of electronic payment systems to modernize Algeria's banking sector, but achieving this requires addressing technological, cultural, and infrastructural challenges. Ultimately, a concerted effort by banks, policymakers, and stakeholders is essential not only to build a robust digital banking ecosystem, but also to ensure long-term customer trust, satisfaction, and financial inclusion across Algeria.

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