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The Impact of Using Artificial Intelligence Applications on Enhancing Customer Experience in the Banking Sector: A Case Study of "CréditPopulaired'Algérie " (CPA) – Khenchela Branch-

أثر استخدام تطبيقات الذكاء الاصطناعي على تحسين تجربة العملاء بالقطاع البنكي –دراسة حالة القرض الشعبي الجزائري-وكالة خنشلة-

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Abstract :

This study investigates the impact of Artificial Intelligence (AI) on customer experience at (CPA) Bank – Khenchela Branch. Using a 30-item questionnaire analyzed via SPSS, the research examined five dimensions: perceived value, efficiency, trust, satisfaction, and ease of use. Results confirm a significant positive impact of AI across all dimensions, with Ease of Use showing the strongest correlation (r = 0.990). The study recorded an excellent reliability score (Cronbach's Alpha = 0.987). It concludes that AI applications are essential for enhancing the banking journey and recommends continuous infrastructure development to further deepen customer trust.

Key words: Artificial Intelligence, Customer Experience, ,Digital Banking.

JEL classificationcodes:G21,L86,O32

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1. Introduction.

The banking sector has undergone profound transformations in recent years as a result of the digital revolution and the rapid advancement of artificial intelligence technologies, which have reshaped banking business models and methods of delivering financial services. Banks have increasingly faced a highly competitive environment characterised by rising customer expectations, diverse needs, and intensified competition from digital financial institutions and financial technology companies. In this context, focusing solely on operational efficiency has no longer been sufficient, as enhancing customer experience has become a decisive factor in achieving sustainability and competitive advantage within the banking sector.

Artificial intelligence applications, such as chatbots, intelligent recommendation systems, and predictive analytics, have contributed to a qualitative shift in the way banks interact with their customers by providing more personalised, faster, and user-friendly banking services. These applications have also helped improve service quality, reduce transaction processing time, and enhance security and trust, which have directly influenced customer satisfaction and loyalty towards banking institutions.

The Problem of the Study

The study's problem revolves around the challenge faced by banks, specifically "CréditPopulaired'Algérie" (CPA)-KhenchelaBranch , in transitioning from traditional banking to smart banking. Despite the adoption of Artificial Intelligence (AI) technologies, the question remains as to how much these technologies actually contribute to improving the 'customer experience' and meeting their growing expectations. Accordingly, the following main research question can be posed:

To what extent do Artificial Intelligence applications affect the enhancement of customer experience at CPA Bank – KhenchelaBranch ?

.Sub-questions

-Is there a statistically significant relationship between the ease of use of artificial intelligence applications and the improvement of banking service quality?

-Does the level of reliance on artificial intelligence have a statistically significant effect on the speed of banking service delivery?
-Is there a statistically significant relationship between the accuracy of information provided by artificial intelligence applications and the level of customer trust?
-Does the use of artificial intelligence applications have a statistically significant impact on customers' satisfaction levels with digital banking services?
-Is there a statistically significant difference in customer experience between users of artificial intelligence services and those who prefer traditional transactions?

.General Hypothesis

There is a statistically significant impact of the use of Artificial Intelligence applications on the customer experience at (CPA) Bank– Khenchela Branch.

.Sub-Hypotheses

First Hypothesis.There is a statistically significant impact of the use of Artificial Intelligence applications on the perceived value of banking services among customers of (CPA) Bank – Khenchela Branch.

Second Hypothesis. There is a statistically significant impact of the use of Artificial Intelligence applications on the efficiency and speed of banking service delivery among customers of (CPA) Bank – Khenchela Branch.

Third Hypothesis.There is a statistically significant impact of the use of Artificial Intelligence applications on the level of trust and security in banking transactions among customers of (CPA) Bank – Khenchela Branch.

Fourth Hypothesis.There is a statistically significant impact of the use of Artificial Intelligence applications on the overall satisfaction with the smart banking experience among customers of (CPA) Bank– Khenchela Branch.

Fifth Hypothesis.There is a statistically significant impact of the use of Artificial Intelligence applications on the ease of use and interaction experience among customers of (CPA) Bank– Khenchela Branch.

.Objective of the study

This study aims to analyse the impact of using artificial intelligence applications on customer experience in the banking sector, through a case study of (CPA) – Khenchela Branch – as one of the banks that is increasingly adopting digital transformation and intelligent technologies to enhance service quality and strengthen its competitive position.

.The importance of the study

The importance of this study lies in bridging the gap between the adoption of AI as a technical tool and its actual success in transforming the customer experience within the Algerian banking environment. This research provides a practical framework (CPA Bank case study) illustrating how AI can act as the primary catalyst for reshaping the relationship between the bank and its customers. It offers insights into navigating the transition from traditional to smart banking while maintaining the core elements of trust and satisfaction.

.Literature Review

The vast majority of studies (Abbas et al., 2020; Singh et al, 2020,2023) have reached a consensus that Artificial Intelligence (AI) represents a fundamental driver for enhancing customer experience within the banking sector. This is achieved through the provision of highly personalised banking services, rapid response times, and continuous engagement across digital channels. Applications such as chatbots, predictive analytics, and intelligent recommendation systems have contributed to elevating levels of customer satisfaction, fostering loyalty, and improving the quality of interaction between the customer and the financial institution.

Further studies (Jagtap, 2023; Tang et aL, 2023,2020) have highlighted that Artificial Intelligence (AI) exerts a positive influence on the functional dimensions of the customer experience. This is particularly evident in the reduction of waiting times, the enhancement of transaction accuracy, and the elevation of security standards within electronic banking services and Automated Teller Machines (ATMs). These findings confirm that the operational efficiency derived from intelligent automation is directly reflected in customers' perceptions of banking service quality.

Regarding the dimensions of trust and security, several studies (Balachandar & Jayanthiladevi 2023; Verma & Sehgal, 2023) have

indicated that the application of Artificial Intelligence (AI) in fraud detection and regulatory compliance enhances customers' sense of security and reliability—a fundamental element in forming a positive banking experience. However, these studies have cautioned that concerns relating to dataprivacy and algorithmic bias may negatively impact customer trust if not managed effectively.

In the context of emerging economies, studies (Abdulsalam & Tajudeen, 2024; Almustafa et al., 2023)have demonstrated that Artificial Intelligence (AI) contributes to enhancing the customer experience by broadening the scope of financial inclusion and providing flexible digital banking services to the unbanked and underbanked populations. However, the limitations of digital infrastructure and the level of technological literacy amongst customers continue to restrict the full realisation of these technologies' potential.

.Research Gaps Identified from Previous Studies

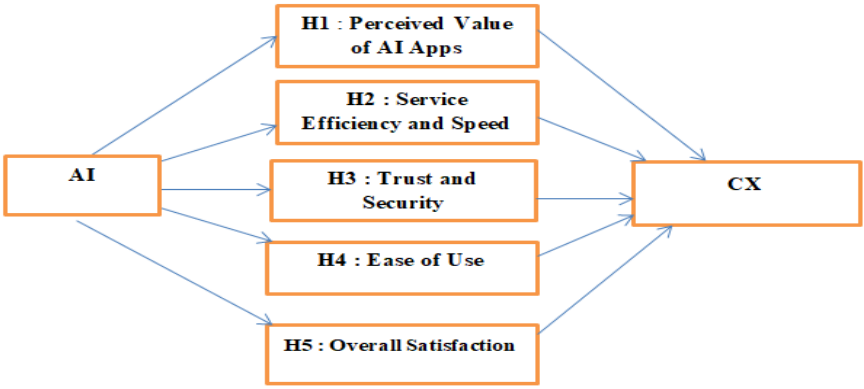
The majority of empirical studies have been conducted within developed or Asian economies (such as the United States, India, Vietnam, and Jordan). Conversely, Arabic and Algerian literature regarding the impact of Artificial Intelligence (AI) on customer experience within the banking sector remains limited, particularly from the perspective of customer behaviour and their perception of service quality.

Building upon this geographic limitation, it is evident that the customer experience (CX) is intrinsically linked to local digital infrastructure and technological literacy. Consequently, there is a research void regarding how AI can effectively enhance the customer journey within a banking environment that is still in the transitional phase of digital transformation, such as the Algerian market.

Despite these global developments, empirical studies examining the impact of artificial intelligence applications on customer experience in the Algerian banking sector have remained limited, particularly field-based studies that assess customers' perceptions of these technologies and their implications for banking behavior

.Study model

Fig 1. Study model



Source :prepard by the author

2. Theoretical Literature

2.1. Definition of AI

Artificial intelligence has been defined as "it is the science and engineering of making intelligent machines, especially intelligent computer programmes. It is related to the similar task of using computers to understand human intelligence." (J. McCarthy, 2007, p. P02)

It is also defined as"AI is defined as the study of agents that receive percepts from the environment and perform actions. Each such agent implements a function that maps percept sequences to actions." (S.J,Russell et al, 2020, p. P05)

It can also be defined as "AI in service is technology that exhibits intelligence beyond routine data processing, possessing the capacity to learn, adapt, and perform cognitive and communicative tasks that previously required human intervention, ultimately to enhance service value." (M. H. Huang , R. T. Rust, 2018, p. P158)

From the above definitions, it can be concluded that Artificial Intelligence within the banking context transcends being a mere technical tool for automation; rather, it is an integrated cognitive system. This system combines the capacity to interpret vast customer data with the ability for continuous learning from user behaviour. The essence of this intelligence lies in its capability to simulate human communicative and decision-making skills with high

flexibility. Consequently, this transforms banking services from static transactions into personalised interactive experiences, aimed at enhancing value-added perceptions and fostering customer trust.

2.2. Characteristics of AI

The characteristics of artificial intelligence are as follows:(S.J,Russell et al, 2020, pp. PP36-40)

.Autonomy The system's ability to operate and execute tasks without direct human intervention by making decisions based on data perceived from the environment.

In banks, this is reflected in the ability of systems (such as chatbots or automated credit applications) to process loan applications or transfer funds immediately without the need to wait for a human employee, which enhances the speed of service and gives the customer a sense of control and empowerment.

.Learning Capability The system does not merely follow fixed instructions; it possesses the ability to self-improve its performance over time by analysing historical data and correcting errors.

.Reactivity The capacity to perceive changes within the environment (such as sudden customer requests in a bank) and respond to them in real-time in a logical manner.

.Adaptability The flexibility of the system to modify its behaviour and strategies when encountering new situations that were not previously programmed into the core system.

.Reasoning and Problem Solving The use of logical rules and algorithms to derive conclusions from available data, facilitating the provision of tailored solutions to complex problems.

It can be concluded thatAI characteristics are not merely isolated technical tools; they translate directly into tangible customer benefits. Autonomy drives speed, Learning enables personalisation, and Reactivity ensures security. Together, these serve as the core drivers that shape a superior and competitive Customer Experience in the modern banking sector.

2.3.Importance of AI in the Banking Sector

The importance of AI in banks can be summarised in the following points: (Dwivedi et al, 2021, p. p12)

.Operational Efficiency *:*AI enhances cost-efficiency by automating repetitive tasks and processing vast datasets in seconds, significantly reducing human error ;

.Risk Management & Fraud Detection :AI is vital for identifying irregular transactional patterns in real-time, providing superior protection for bank assets and customer funds ;

Elevating Customer Experience: It facilitates 24/7 service availability via virtual assistants and delivers personalised financial solutions based on individual customer behaviour ;

.Strategic Decision Making :AI assists banks in predicting future market trends and credit behaviours, thereby minimising non-performing loans and maximising profitability.

2.4. AI Tools in the Banking Sector

These AI tools have functioned as the technological engine that has driven the enhancement of customer experience dimensions, such as ease of use and personalisation : (Manser Payne et al, 2021, p. p58)

. **Machine Learning Algorithms**: Machine learning algorithms have become the primary tool for predictive analytics in banking. They have processed historical transaction data to forecast customer behaviour and credit risks with high precision.

.Natural Language Processing (NLP):NLP tools have enabled banks to understand and interpret human speech and text. This technology has powered sophisticated chatbots and voice assistants, allowing them to engage in human-like conversations with customers.

.(Computer Vision): Computer vision has been implemented to automate identity verification processes. It has facilitated the use of facial recognition for secure login and document scanning, which has streamlined the digital onboarding of new customers.

.(Intelligent RPA): Intelligent RPA has combined traditional automation with AI to handle complex back-office tasks. It has reduced operational bottlenecks and has ensured that data entry and validation remain error-free.

2.5.The impact of AI on CX in the banking sector

AI has enhanced the customer experience through three strategic pillars: (Ameen et al, 2021, pp. 125-129)

.Personalisation at Scale :AI has established the capacity to deliver a unique experience to each customer by leveraging individual data, rather than relying on a 'one-size-fits-all' approach. Within the banking sector, this technology has enabled the dynamic customisation of application interfaces to feature only the most frequently used services; consequently, this has minimised

administrative friction and has significantly boosted customer satisfaction.

.Frictionless Experience :AI has been utilised to diminish both cognitive and physical effort, thereby ensuring that transactions have become entirely seamless. Through the implementation of biometric technologies, such as facial recognition, AI has replaced traditional, complex authentication methods; this shift has enhanced the perceived ease of use and has facilitated a more fluid journey for the banking customer .

.Real-time Engagement :AI has transformed customer engagement by facilitating the resolution of issues either proactively or instantaneously through intelligent assistants and 24/7 chatbots. The integration of these autonomous systems has ensured that banking support has remained constantly accessible; consequently, this has strengthened customer trust and has fostered a sense of reliability in the digital service experience.

3.The Practical Application of the Study

3.1. The Study Population and Sample

The research population comprises the customers of the (CPA) – KhenchelaBranch, which has been designated as the primary field of study. Regarding the sampling process, a simple random sampling technique has been used to ensure objectivity. Data have been gathered via a structured questionnaire, which has been administered manually in hard-copy format to the participants. Consequently, a total of 50 valid responses have been retrieved and deemed suitable for empirical analysis.

3.2. Demographic Characteristics of the Study Sample

The demographic characteristics of the study sample have identified the personal and social traits of the respondents, such as gender, age, educational level, and the duration of their relationship with the bank. These attributes have contributed to forming a clear profile of the studied sample. Furthermore, they have assisted in interpreting customer trends and analysing their perspectives regarding the impact of Artificial Intelligence (AI) applications on their banking experience.

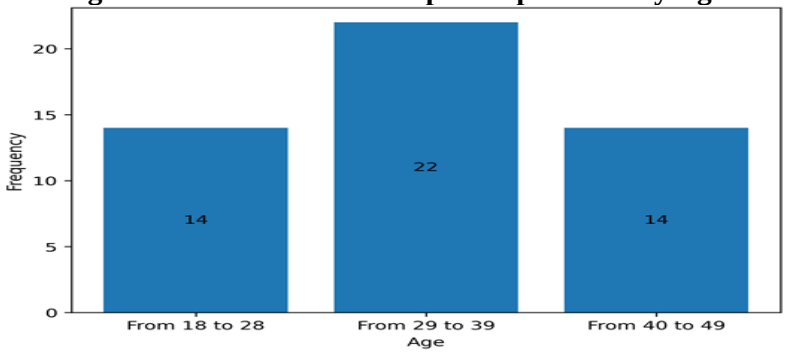
a.Distribution of the Study Sample by Age

Table 1.Distribution of the Sample Respondents by Age

18-28years		29-39years		40-49years		Older than 49years	
Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
14	28	22	44	14	28	00	00

Source: Prepared by the author based on the questionnaire results

Fig 2.Distribution of the Sample Respondents by Age



Source : Prepared by the author based on the table 01

Both the table and the figure show that the largest percentage of the sample members are aged between 29 and 39 years at a rate of 44%, followed by both groups 18–28 years and 40–49 years at an equal rate of 28% for each of them, while there are no members whose ages exceed 49 years. This distribution indicates that the majority of the customers of the (CPA) bank – KhenchelaBranch – belong to the economically active age group, which reflects the nature of daily banking transactions and defines the scope of the age structure of those dealing with the agency, which provides a strong base for analyzing customer behavior and understanding the pattern of their interaction with banking services.

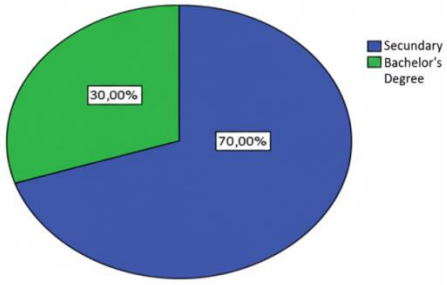
b. Distribution of the Study Sample by Educational Level

Table2. Distribution of the Study Sample by Educational Level

Secondary School		Bachelor's Degree		Master's Degree		Higher Level	
Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%
35	70	15	30	00	00	00	00

Source: Prepared by the author based on the questionnaire results

Fig3. Distribution of the Study Sample by Educational Level



Source: Prepared by the author based on the table02.

The table and figure show that the majority of the sample possess a secondary education qualification, accounting for 70%, whilst 30% hold an undergraduate degree. Notably, there are no participants with postgraduate qualifications or higher. This distribution reflects theactual educational composition of customers at the KhenchelaBranch of (CPA). Such findings suggest that daily banking transactions are concentrated among mid-level educational demographics, providing insight into the clients' capacity to engage with field-based banking services and the emerging financial technologies implemented by the bank.

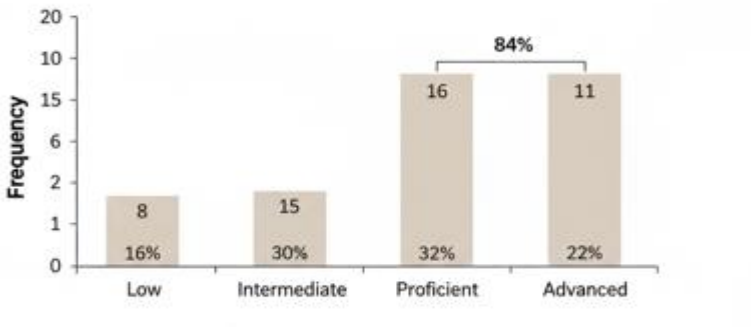
c. Distribution of the Study Sample by Level of Technological Proficiency

Table.3. Distribution of the Sample by Level of Technological Proficiency

Low		Intermediate		Proficient		Advanced	
Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%
8	16	15	30	16	32	11	22

Source: Prepared by the author based on the questionnaire results

Fig.4. Distribution of the Sample by Level of Technological Proficiency



Source: Prepared by the author based on the table03.

The data demonstrate that a significant proportion of the respondents possess a moderate to good level of technological proficiency, with 30% classified as intermediate and 32% as proficient. Furthermore, 22% of the sample reported a very good level of digital literacy, while only 16% were identified as having a low level of proficiency. This distribution indicates that the majority of (CPA) customers at the Khenchela agency are capable of engaging with digital banking services to varying degrees. Such findings reflect their readiness to adopt Artificial Intelligence (AI) applications in their banking transactions and facilitate a more nuanced understanding of how modern technologies implemented within the agency may influence the overall customer experience.

d.Distribution of the Sample by Type of Digital Banking Operations Utilised

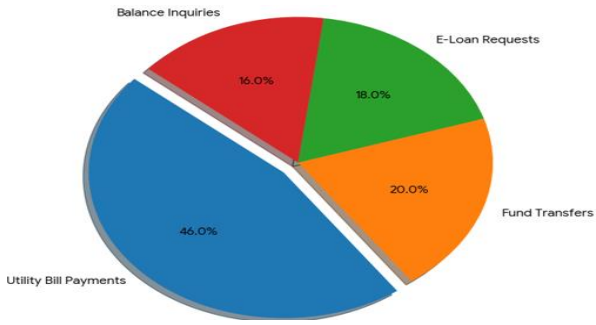
This section provides a strategic insight into how customers interact with the (CPA) digital platforms; a factor that is fundamental to understanding the opportunities for integrating Artificial Intelligence (AI) into these operations.

Table4.Distribution of the Sample by Type of Digital Banking Operations Utilised

Fund Transfers		Utility Bill Payments		E-Loan Requests		Balance Inquiries	
Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%	Frequency	Percentage%
10	20	23	46	9	18	8	16

Source: Prepared by the author based on the questionnaire results

Fig5.Distribution of the Sample by Type of Digital Banking Operations Utilised



Source: Prepared by the author based on the table04

The table demonstrates that the most frequently utilised digital operation among customers of the (CPA) KhenchelaBranch is utility bill payments, accounting for 46%. This is followed by bank transfers at 20%, loan applications at 18%, and finally, balance inquiries at 16%. This distribution reflects the nature of customers' daily interactions with the bank's digital services, as the majority of transactions focus on routine operations with a direct impact on their financial lives. This signifies a clear trend among customers towards adopting digital services that offer time and effort savings. Furthermore, these results highlight the critical importance of developing Artificial Intelligence (AI) applications tailored to these actual usage patterns.

3.3.The Impact of (AI) Applications on Customer Experiencein (CPA), KhenchelaBranch"

This section is dedicated to studying and analysing the actual impact of Artificial Intelligence (AI) applications on customer experience at

the (CPA) – KhenchelaBranch. By relying on the statistical processing of the survey data, this analysis seeks to test the strength of the relationships between the study variables and verifies the validity and reliability of the research instrument. Furthermore, it examines the validity of the hypotheses, allowing for the provision of accurate scientific results that reflect the reality of AI implementation in enhancing the banking experience for customers.

a. Correlation Analysis of Questionnaire Axes and Items

This section aims to examine the strength of the relationship between the various axes and items of the questionnaire, in order to determine the extent to which variables are interconnected and to understand the impact of each element on the customer experience. The correlation analysis helps in uncovering internal data patterns and assesses the level of consistency in the respondents' opinions regarding the use of Artificial Intelligence (AI) applications in banking services.

3.4. Analysis of Questionnaire Responses and their Significance

The research instrument comprises a total of 25 items. The responses for each item across the study's dimensions are measured using a five-point Likert scale, structured as follows:

1	2	3	4	5
StronglyDisagree	Disagree	Neutral	Agree	StronglyAgree

To determine the category intervals for the five-point Likert scale (lower and upper limits), the range is calculated (5 - 1 = 4), and then divided by the number of levels (4 / 5 = 0.8). This value is added to the lowest value in the scale (one) to determine the upper limit of each interval. Accordingly, the results are interpreted based on the following table:

Table5. **Questionnaire Responses and TheirSignificance**

Response	Category	Arithmetic Mean
StronglyDisagree	1	[1 - 1.8 [
Disagree	2	[1.8 - 2.6 [
Neutral	3	[2.6 - 3.4 [
Agree	4	[3.4 - 4.2 [
StronglyAgree	5	[4.2 - 5 [

Source: Prepared by the author based on the questionnaire results

The reliability and validity of the research instrument are measured using Cronbach's Alpha coefficient, along with the correlation strength between the scores of each individual item in the questionnaire. Statistically, a Cronbach's Alpha value of 60% (0.60) or higher is considered acceptable, ensuring the internal consistency of the data used in the analysis.

3.5.Validity and Reliability Coefficients for the Questionnaire Axes

The reliability and validity coefficients regarding the impact of Artificial Intelligence (AI) applications on customer experience in the banking sector are presented below :

Table6. Reliability and Validity Coefficients: The Impact of AI on CX

Dimension	No. of Items	Reliability Coefficient	Validity Coefficient
Perceived Value of AI Applications	5	0.914	0.956
Service Efficiency and Speed	5	0.960	0.979
Trust and Security in AI Interaction	5	0.954	0.976
Ease of Use and Interaction Experience	5	0.926	0..962
Overall Satisfaction with Smart Banking	5	0.889	0.942
Total Questionnaire	25	0.985	0.992

Source: Prepared by the author based on the questionnaire results

The results reveal excellent reliability and validity levels. The Cronbach's Alpha (0.985) significantly exceeds the 0.60 threshold, confirming strong internal consistency. Moreover, the Validity Coefficient (0.992) affirms the instrument's accuracy in measuring the study variables. These robust indicators justify proceeding with data analysis and hypothesis testing.

3.6. Internal Consistency: Item-to-Dimension Correlation

This section presents the extent of internal consistency and the correlation of each item with its respective axis.

a.Internal Consistency: Item Correlation with the Perceived Value of AI Applications

This section presents the internal consistency and the correlation of the items within each dimension to the total score of that dimension.

Table7. Internal Consistency: Item Correlation with the Perceived Value of AI Applications

Item No	Correlation Coefficient	SignificanceSig
1	0.957	0.000
2	0.938	0.000
3	0.840	0.000
4	0.711	0.000
5	0.961	0.000
Perceived Value Dimension	1	-

Source: Prepared by the author based on the questionnaire results

b.Internal Consistency: Item Correlation with Service Efficiency and Speed

Table8. Internal Consistency: Item Correlation with Service Efficiency and Speed

Item No	Correlation Coefficient	Significance (SIG)
1	0.938	0.000
2	0.937	0.000
3	0.979	0.000
4	0.829	0.000
5	0.965	0.000
Service Efficiency& Speed	1	-

Source: Prepared by the author based on the questionnaire results

c.Internal Consistency: Item Correlation with Trust and Security

Table9. Internal Consistency: Item Correlation with Trust and Security

Item No	Correlation Coefficient	Significance (SIG)
1	0.964	0.000

2	0.911	0.000
3	0.959	0.000
4	0.937	0.000
5	0.918	0.000
Trust and Security Axis	1	-

Source: Prepared by the author based on the questionnaire results

d. Internal Consistency: Item Correlation with Ease of Use and Interaction Experience

Table10. Internal Consistency: Item Correlation with Ease of Use and Interaction Experience

Item No	Correlation Coefficient	Significance (SIG)
1	0.940	0.000
2	0.883	0.000
3	0.801	0.000
4	0.961	0.000
5	0.939	0.000
Ease of Use and Interaction	1	-

Source: Prepared by the author based on the questionnaire results

e.Internal Consistency: Item Correlation with Overall Satisfaction

Table11.Internal Consistency:Item Correlation with Overall Satisfaction

Item No	Correlation Coefficient	Significance (SIG)
1	0.887	0.000
2	0.933	0.000
3	0.823	0.000
4	0.673	0.000
5	0.915	0.000
Overall Satisfaction Axis	1	-

Source: Prepared by the author based on the questionnaire results

The result presented in the tables indicate a strong and highly significant statistical correlation between all questionnaire items and

the studied variables.this reflects the internal consistency of the data and the credibility of the respondents'answers :

-the resultes show that all items exhibit high correlation coefficients ranging from 0.711 to 0.961 with a significance value of sig=0.000 this indicates that the respondents ' evaluations of the questionnaire elements are strongly linked to their perception of (AI) usage in banking services.Sush high values confirm the structural integrity of this dimension and verify that the items accurately represent the perceived value of (AI) technologies.

-The items demonstrate exceptionally high correlation coefficients ranging between 0.829 and 0.979, with strong statistical significance (Sig = 0.000). This indicates that each questionnaire item is closely linked to the customers' perceptions regarding the efficiency and speed of the services provided. These results confirm the consistency of the instrument in measuring the operational impact of AI applications on service delivery.

-The correlation coefficients record high levels ranging between 0.911 and 0.964 with strong statistical significance. These results reflect the extent of customer reliance on the security and reliability of Artificial Intelligence applications in their banking transactions. Such high values confirm that the questionnaire items accurately capture the dimensions of digital trust and the perceived safety of smart banking systems.

-The results show a strong correlation between the questionnaire items and the 'Ease of Use and Interaction Experience' variable. The correlation coefficients range from 0.801 to 0.961 with a significance value of Sig = 0.000. This highlights the impact of interaction simplicity on customers' perceptions of smart services. These findings confirm that the ease of navigating AI-powered interfaces is a fundamental factor in shaping the overall user experience.

-The correlation coefficients record high levels ranging between 0.673 and 0.933 with strong statistical significance. This indicates that all items contribute to determining the level of customer satisfaction with their smart banking experience.

Consequently, these results confirm the strength of the relationship between all questionnaire items and the main variables of the study. This reflects the consistency of the data and enhances the credibility of the analysis. Furthermore, it indicates that customer perception of AI applications is closely linked to service efficiency,

security, ease of use, and overall satisfaction with the banking experience.

4. Testing Hypotheses and Overall Questionnaire Validity

It is necessary to verify the validity of the hypotheses that the study was built on, through the analysis of the statistical results extracted from the questionnaire data, in order to confirm the extent of their harmony with the research objectives and its problem.

4.1. Hypotheses Testing

This section focuses on testing the study's general and sub-hypotheses, utilizing correlation coefficients and statistical significance levels. This procedure aims to identify the nature and strength of the relationship between the application of Artificial Intelligence and the customer experience at (CPA) – Khenchela Branch. By examining these variables, the study determines how AI-driven services influence client interactions within the Algerian banking sector.

Table12.HypothesesTesting

Dimension	Perceived Value of AI Applications	Service Efficiency and Speed	Trust and Security in AI Interaction	Overall Satisfaction with Smart Banking	Ease of Use and Interaction Experience	The Questionnaire as a Whole
Correlation Coefficient	0.977	0.986	0.959	0.967	0.990	1
Significance (Sig.	0.000	0.000	0.000	0.000	0.000	-

Source: Prepared by the author based on the questionnaire results

Based on the results presented in the table, the study's sub-hypotheses are tested by analyzing the correlation coefficients and statistical significance values (Sig),as follows :

Hypothesis1: There is a statistically significant relationship between the use of Artificial Intelligence applications and the perceived value among customers of(CPA) – Khenchelaagency.

The results show a high correlation coefficient of 0.977 at a significance level of Sig = 0.000. This indicates the existence of a very strong, statistically significant relationship between the two variables. Consequently, the first hypothesis is accepted.

Hypothesis2: There is a statistically significant relationship between the use of Artificial Intelligence applications and the efficiency and speed of banking service delivery.

This dimension records a high correlation coefficient of 0.986 with strong statistical significance (Sig = 0.000). This confirms the existence of a very strong relationship between AI usage and the improvement of efficiency and speed. Consequently, the second hypothesis is accepted.

Hypothesis3: There is a statistically significant relationship between the use of Artificial Intelligence applications and the level of trust and security among customers.

The correlation coefficient reaches 0.959 at a significance level of Sig = 0.000. This indicates a strong and statistically significant relationship; therefore, the third hypothesis is accepted.

Hypothesis4: There is a statistically significant relationship between the use of Artificial Intelligence applications and overall satisfaction with the smart banking experience.

The results show a high correlation coefficient of 0.967 with high statistical significance (Sig = 0.000). This indicates a clear impact of AI application usage on increasing customer satisfaction levels; consequently, the fourth hypothesis is accepted.

Hypothesis5: There is a statistically significant relationship between the use of Artificial Intelligence applications and the ease of use and interaction experience.

This dimension records the highest correlation coefficient of 0.990 at a significance level of Sig = 0.000. This reflects a very strong and statistically significant relationship;consequently,the fifth hypothesis is accepted.

the results of the hypothesis testing confirm the existence of strong and statistically significant relationships between the use of Artificial Intelligence applications and all dimensions of customer experience at (CPA) – Khenchela Branch. These findings support the study's general hypothesis and highlight the positive impact of employing AI in enhancing the smart banking experience.

4.2.Testing the Validity of the Questionnaire

The study hypotheses are tested by processing the collected data using the SPSS software. The statistical analysis yields the following results, which are illustrated in the table below:

Table.Reliability Analysis (Cronbach's Alpha)

Number of Items	Cronbach's Alpha
30	0.987

Source: Prepared by the author based on the questionnaire results

The table indicates that the Cronbach's Alpha value is 0.987 (98.7%), which exceeds the minimum threshold of 0.60. Consequently, this confirms that the questionnaire possesses high levels of both validity and reliability.

5. Conclusion :

The most significant finding of this study is that the optimal deployment of Artificial Intelligence applications constitutes a fundamental pillar for enhancing the customer experience at (CPA). Integrating intelligence, speed, and simplicity into banking services is no longer a mere technical luxury but has become a crucial element in building trust and security among customers and elevating their overall satisfaction.

The success of this experience stems from the ability of smart technologies to provide immediate and accurate solutions that meet customer needs, thereby facilitating sound financial decision-making. Consequently, the quality of digital interaction and ease of use are among the most vital factors in enhancing the perceived value of banking services. Any failure to keep pace with these digital transformations or weakness in the quality of smart systems directly impacts the bank's reputation and its competitive standing in the modern banking market.

Recommendations

.The bank should continuously upgrade its digital systems and expand the use of AI chatbots and virtual assistants to cover all services, given their significant impact on "Ease of Use."

. The bank must increase investment in "Smart Security" technologies and educate customers on data protection mechanisms to ensure sustained high levels of trust in digital transactions.

. It is recommended to utilize Big Data analytics to provide personalized offers and services based on individual banking behavior, thereby increasing the "Perceived Value" of the banking service.

.The bank should streamline procedures within its smart application to reduce transaction steps, as the study proved that "Speed" is a key driver of satisfaction for Khenchela branch customers.

.Organizing periodic training for staff on smart systems and launching guidance campaigns for customers to familiarize them with maximizing the benefits of the bank's AI applications.

6. Bibliography List:

1.Abbas, Z., Merbis, R., & Motruk, A. (2020). Leveraging machine learning to deepen customer insight. *Applied Marketing Analytics, 5*(4).
2.Abdulsalam, T. A., & Tajudeen, R. B. (2024). Artificial Intelligence (AI) in the banking industry: A review of service areas and customer service journeys in emerging economies. *Business & Management Compass, 3*(3).
3.Almustafa, E., Assaf, A., & Allahham, M. (2023). Implementation of Artificial Intelligence for Financial Process Innovation of Commercial Banks. *Revista de Gestão Social e Ambiental (RGSA), 17*(9).
4.Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Industrial Marketing Management, 92*.
5.Balachandar K, A., & Jayanthiladevi, A. (2023). Enhance the banking sector compliance process through artificial intelligence and machine learning techniques. *International Advanced Research Journal in Science, Engineering and Technology (IARJSET), 10*(12).
6.Dwivedi, Y. K., and others. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management, 57*.
7.J. McCarthy. (2007). *What is Artificial Intelligence?* California, Computer Science Department, USA: Stanford University.
8.Jagtap, S. (2023). Banking beyond Boundaries: Harnessing the Potential of Artificial Intelligence.) DOI: 10.21275/SR23804130454. *International Journal of Science and Research (IJSR), 12*(8).
9.M. H. Huang and R. T. Rust . (2018). "Artificial Intelligence in Service". *Journal of Service Research, 21*(2).
10.Manser Payne and others. (2021). Omnichannel marketing, personification and retail banking: The moderating role of AI. *Journal of Business Research, 124*.
11.S.J,Russell and P. Norvig. (2020). *Artificial Intelligence: A Modern Approach.* United Kingdom: Pearson.
12.Singh, C. L., & Tiwari, S. (2023). The Impact of Artificial Intelligence on Customer Relationship Management in the Indian Banking Industry. *Principles and Practices of Creative Complexity: Emerging Applications*, 164-185. IGI Global.
13.Tang, S. M., & Nguyen Tien, H. (2020). Impact of Artificial Intelligence on Vietnam Commercial Bank Operations. *Journal of Asian Business and Economic Studies, 27*(1).
14.Verma, P., & Sehgal, S. (2023). Leveraging Artificial Intelligence for Enhancing Customer Experience and Efficiency in the Banking Industry. *Digital Transformation and Strategies for Business Management*. Global ICI.