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Role of AI in Banking Sector

Author : Nitin sharma

Designation : Student

Organization : Amity University Uttar Pradesh

Co-Author : Kanika Dhingra

Designation : Assistant Professor

Organization : Amity University Uttar Pradesh

Abstract

Artificial Intelligence (AI) is rapidly changing the banking landscape, creating significant opportunities and challenges. On the positive side, AI can make work more efficient, productive and productive, while analyti cs capabilities can also improve risk management through fraud detection and prediction. It provides person alized customer service through 24/7 chatbots and customized financial solutions, and even reaches unserve d customers through AI-
powered tools. In addition, artificial intelligence transforms the economy by encouraging innovation and lea ding to the development of new products and services.

But concerns continue. Automation can change jobs and lead to greater economic pressure. Ethical consider ations are important because AI algorithms can lead to unethical behavior if not designed properly. Security risks such as cyber attacks can lead to data leaks and financial losses. Over-
reliance on technology can reduce people's attention and critical thinking, increasing risk. Additionally, data privacy issues need to be carefully considered.

Overall, the impact of intelligence on the banking sector is very diverse. While it has the potential to be a po sitive change, addressing ethical concerns, adhering to strict rules and carefully planning its use are importan t to reduce impact, negative impact and ensure that AI benefits banks and their customers in the future.

After the introduction of AI in banking, access to some banks is difficult and people are not willing to take risks in the early stages. The study data was collected from primary and secondary data sources. This study was conducted to find out how the adoption of AI in banks will impact customers and bankers, regardless of whether it actually helps them with their business or transactions. Various hypotheses were developed and evaluated to achieve the goal of a value proposition that benefits customers by simplifying transactions and bankers by reducing workload. We collected data for the study from both primary and secondary aspects of

data. There are 112 baseline data collected from clients and 30 samples collected from bankers. For the study, a total of 142 pieces of primary data were collected from the perspectives of customers and bankers. Primary data was collected from the perspective of bankers of Axis Bank, ICICI Bank, Karnataka Bank and HDFC Bank. Secondary data from books, magazines and websites were used to obtain additional information. The statistical tools used for testing are chi-square, correlation, and regression.

Chapter – 1

INTRODUCTION

Artificial intelligence (AI) is the ability of computers or computer-controlled robots to perform tasks that typically require human intelligence and understanding. It's about simulating human intelligence in a machine that thinks and acts like a human. Artificial intelligence is used in various fields, including finance and medicine. 60 Artificial intelligence is also used in banking to detect fraud, resolve customer inquiries, monitor customer behavior, and recommend personalized services. Artificial intelligence (AI)is tool that will revolutionize the banking industry. Banks became popular. Traditional banks are also starting to offer more online services. Artificial intelligence helps in automate processes, make better decisions, and manage customer requests with less effort. It also helps in manage risk by detecting and preventing fraud and money laundering in real time. Artificial intelligence can be used in a variety of ways to improve the banking industry. Banks can use AI to improve customer experience through seamless interactions 24/7. But AI banking applications are not limited to retail banking. Investment banking and all other financial services can benefit from bottom-up and mid-level intelligence. After India's independence, all major banks were privately owned, so the government plannedto nationalize them. This is an alarming situation as villagers continue to turn to lenders for help. The Reserve Bank of India was nationalized in 1949.

A nationalized banking system improved the overall economic health, created more jobs, and improved the living standards of rural;and,agricultural residents. Indian consumers are dissatisfied with online businesses, making it difficult to improve internal and customer service. One of the biggest challenges facing banks today is poor data and customer segmentation. The emergence of payment technology companies such as Airtel Payments Bank and Paytm Payments Bank, emergence of neobanks and neobanking platforms, and emergence of NBFCs have made it difficult for banks to survive in the existing paradigm. Artificial intelligence is a system that can observe the world around it, analyze and interpret the information it receives, act on what it understands, and learn from its mistakes to improve its behavior. Technologies that enable robots to interact more with their environment, people, and data have the potential to extend the capabilities of humans and machines far beyond those of individuals. Artificial intelligence (AI) has revolutionized the banking industry. In the new era, banks are using new technologies to further develop and improve their services to customers. Artificial intelligence is helping banks transform their entire business, from insurance to sales, contracts to cybersecurity. Banks are using analytics, blockchain, and machine learning to future-proof their products and services. Artificial intelligence in banking and finance improves the efficiency and competitiveness of banks and financial institutions. Banks are using AI for a variety of purposes, including fraud detection, improving customer experience, monitoring customer behavior to provide better service, and checking the credit history of users' products to predict loan risk. Areas where banks utilize artificial intelligence include: One of the main application areas of artificial intelligence in the banking industry is artificial intelligence-based chatbot services. This is a modern way to help customers. AI chatbots in banks can support customers and provide accurate answers to their questions 24/7. These chatbots provide users with a personalized experience. Therefore, AI chatbots for banking and financial services can help banks attract customers, improve service quality, and expand their brand’s impact on the business. Smart mobile apps can track user behavior and extract sensitive information based on user browsing trends. This information helps service providers provide personalized recommendations to customers.

- **Research objectives:**

1. To study artificial intelligence in the banking sector and its impact on customers.

2. Study the impact of AI on bankers.

3. Evaluate the challenges bankers face when implementing AI.

4. Study the efficiency of the banking sector after the introduction of artificial intelligence.

- **Indian Banking Using AI:**

Indian banks are using predictive analytics, speech recognition, etc. It uses artificial intelligence technology that requires fraud such as. Dozens of Indian banks have adopted AI in the last few ye ars.

The list includes:

a) SBI	b) Bank of Baroda (BoB)
c) Allahabad Bank	d) Andhra Bank
e) YES Bank	f) HDFC Bank
g) ICICI Bank	h) Axis Bank
i) Canara Bank	j) City Union Bank
k) Punjab National Bank	l) IndusInd Bank

- State Bank of India (SBI): SBI is currently using an AI solution developed by Chapdex, S BI Co . The winning team of the first national hackathon "Code for Bank".
  At the front desk, use SIA chatbot, an intelligent conversational assistant developed by Pa yjo, a company based in Silicon Valley and Bangalore. He responds quickly to customer questions and assists them in the day-to-day business of the bank on behalf of the bank.
- Bank of Baroda: BoB founded a technology company with technologies such as Artificial Intelligence Robot Baroda Brainy and
  Digital Lab with Free Wi-Fi.
- Allahabad Bank: In an earlier announcement, Allahabad Bank said that its 'em Power' app will receive significant updates, including chatbots and AI-based e-commerce payments.
- Andhra Bank: Flatboat, an AI company in Bengaluru, has connected an AI chatbot to An dhra Bank's core business to digitally engage and manage 5 customers to support 10 milli on customers. Flatboat will also develop Andhra Bank's in-
  house chatbot, which has over 20,000 users, for onboarding and coding training.
- YES Bank: Launch 'YES mPower', a bot platform for banking conversations on lending si tes, in partnership with Gupshup. YES ROBOT
  products are other smart tools used to answer questions about business problems from cus tomers anywhere in the world. Additionally, with the launch of YES TAG in April 2016,

YES BANK became the first bank in India to offer chatbot financial services, allowing us ers to carry out transactions funded by popular media.

- HDFC Bank - 'Eva', an artificial intelligence (AI) based chatbot developed by Bengaluru Sense ahead of AI research, is now available. Eva can pull data from multiple sources and answer simple questions in 0.4 seconds. In the future, Eva will be able to manage real-world businesses. HDFC is also working to improve the store's capabilities and the protot ype robot IRA ("Intelligent Robot Assistant") has been launched.

- ICICI Bank - Robotics software has been installed in more than 200 business units across various functions of the organization; It was mostly developed in-house and used artificial intelligence such as facial and speech recognition, language reco gnition, deep learning, robotics and other functions. . ICICI Bank Computer Robot is designed to collect and analyze data in the system, find trends and perform operations i n various applications to complete tasks. Powered by artificial intelligence, Chabot iPal is one of the tools that helps answer questions, fund advertising, and identify new services.

- Axis Bank: Offers a payment gateway experience that uses artificial intelligence, machine learning and events to assist customers with financial and non-financial service transactions, inquiries and business information.

- Canara Bank: Humanoid robot Mitra, developed by Bengaluru-based Invento Robotics to help customers navigate the bank, was introduced. Another pos sibility is that Candi provides less assistance to the staff than Mitra.

- City Union Bank: Robot bank Lakshmi was introduced. Customers can communicate wit h the bot on more than 125 different topics. The bot learned to connect to major banking s ervices without having to answer any questions.

➢ Impact of Artificial Intelligence In Banking:

Banks use artificial intelligence (AI) to provide, predict and execute personalized financial advice to custom ers and get quick information about financial strategies, loan rates and future markets. The impact of artificia l intelligence on the banking industry is as follows:-

- Customer satisfaction: Artificial intelligence allows banks to improve revenue, decision making and customer relationship management, as well as providing customized and efficient services that are go od for customers.

- Chatbot: Bot is the meaning of Robot.Chatbot is a chatbot that can be used to perform tasks or follow a predefined process. Chatbots are a type of artificial intelligence that can be used in financial institut ions. A chatbot is available 24 hours a day, 7 days a week and can provide excellent customer service.

- Personal financial guidance: Artificial intelligence helps customers make easy, fast financial decision s using the latest information on br> Provide recommendations on current market trends and stocks and bonds people can invest in.

- Digital Wallet: Digital wallet allows users to use digital currency to buy anything online through thei r mobile phone or computer.

- Interactive Voice Response System (IVRS): A voice that works with customers, answering specific q uestions, directing them to financial institutions, and providing a good customer experience.

- Crime Detection: Artificial intelligence detects financial fraud by scanning large amounts of transacti on data and monitoring for unusual or activity patterns. Artificial intelligence can reduce financial fraud, speed up processes, prevent sec urity breaches, and facilitate machine learning.

- Improve customer service: Customer satisfaction has an impact on the performance of the banking i ndustry and makes people think about the banking industry. Products of financial institutions. It also has an impact on banks' objectives and insurance policies.

- Better regulatory compliance: Intelligence applications often rely on fraud metrics to track customers , analyze transactions, identify suspicious behavior, and measure the difficulty of complying with different rules. Artificial i ntelligence provides significant benefits to customers through personalization, reducing risks and cos ts, increasing employee productivity and enabling improvements.

- Risk management should reduce fraud by instantly analyzing transactions for suspicious patterns an d assessing customer behavior. To provide suggestions to creditworthiness and risk assessors to reduce risk.

- Portfolio Management: Artificial intelligence systems and machine learning technologies create pers onalized portfolios based on customers' resource constraints, behaviors and preferences. Financial m arkets and artificial intelligence are about to usher in the next wave of the digital revolution. Therefore, artificial intelligence has changed many areas of the banking system, making money trans fers safer and more efficient.

CHAPTER – 2

Literature Review

- Mehdiabadi et al. (2022) said that the concept of Banking 5.0 is based on the design of the business revolution created by intelligence. Additionally, Samatha et al. (2022) examined the impact of mobile marketing applications and online marketing using the Integrated Adoption and Use of Technology (UTAUT) conversion model as a case study for the country of India.

- (Soni, 2021) - This report will investigate how, with the advancement of information technology, cri minals are leveraging cyberspaces to facilitate their crimes. The finance and financial industry is tryi ng to use artificial intelligence to combat cybercrime and cyber threats. The AI approach has many benefits for the banking industry, including driving success and expansion. It is i mportant to have clarity and explanation in the ability to build trust. Artificial intelligence tools provi de insight into customer behavior and preferences. Artificial intelligence-based fraud systems help prevent and detect cybercrime. On the other hand, the use of artificial intell igence requires a high degree of caution. Also, unemployment is increasing.
- Singh and Pathak (2020a) argue that developing countries like India have a low digital orientation, so allocation is important in the process of trading financial products and capital investments. The study also discusses the actions taken by the Reserve Bank of India (RBI) and the Securities and Exchange Board of India (also known as SEBI) while market prices remained unchanged.

- Noreen et al (2023) stated that the banking industry can use appropriate technologies based on artificial intelligence to improve customer experience and increase bank profits. Kabasi Yazdi et al. (2022) believe that the service sector is very important for economic development. This is especially true because the service sector, unlike traditional industries, requires less capital and is more traditional and open to new and innovative business models. Bilau et al. (2021) also pointed out that financial institutions are an important factor in achieving growth levels in the international economy.

- Singh and Pathak (2020b) define the concept of artificial intelligence as "the ability of machines to think and perform tasks independently without human assistance." Finance is the most widely used information technology compatible with artificial intelligence or machine learning. Examples include machine learning (ML), natural language processing (also known as NLP), deep learning, interactive voice response (IVR), speech recognition or speech-to-text, and image analytics.

- Mhlanga (2020) investigated the impact of artificial intelligence on digital accounting processes, highlighting the importance of chatbots, fraud detection, and cybersecurity in improving banking customer experience.

- (Kaya, 2019) - Examines the increasing competition in banking due to data-driven financial service providers such as fintech startups and large technology companies that are ch allenging the banking business model
  -Banks' ability to quickly use artificial intelligence technology. is essential for their survival.

- (Smith & Nobanee, 2018) - This report will investigate how artificial intelligence can be used in the banking sector. There are many different opinions about artificial intelligence (AI) and its potential t o improve cross-industry operations. Financial markets are no exception. According to some publications, artificial intelligence may also harm the financial market.

- (Sabharwal, 2014) - The main objective of this research project is to see wheher the selected Indian b anks are using Artificial Intelligence (AI) as a technology and if so, what is the specific purpose of us ing these applications. Interviews were held with the managers of 16 scheduled banks in Meerut (U.P .). The researchers asked managers of selected banks to use the survey and compared the answers wit h the best cases using difference analysis.

- (Vieira & Sehgal, 2018) - Business intelligence will transform into a more efficient structure thanks t o the framework of artificial intelligence (AI) algorithms. Artificial Intelligence will be able to chang e the world or many economic elements such as price and financial usage. Fraud Detection and Se curity This section will discuss some advanced analytics and provide examples of how intelligence c an help in the financial industry.
  Small business scores were revised, internet behavior was examined, and customer service was impr oved. We'll also look at how the integration always works.

- (Kaur, 2020) - In this case study the author examines how intelligence is changing the banking indust ry - a case study of four companies Major Indian
  Banks (SBI, HDFC, ICICI, AXIS). Take a look at the areas where banks are implementing AI in Indi a and the areas where AI is being used the most by commercial banks. The banking industry has alw ays been progressive and banks are slowly adopting new technologies such as artificial intelligence, blockchain and cloud computing. But banks still haven't reached the level of intellectual change, and humanity matters. The Indian banking industry is exploring ways to use AI to improve banking opera tions and improve customer experience as quickly as possible.

- (Marko and Matej, 2018) - According to this article, relationship banking fosters relationships with b ank customers and should not be abandoned. Loans for long-term relationships make it easier for bank customers to make payments and meet their long-term goals. Banks are likely to be interested in payment systems due to IT-driven efficiency and competition from fintech startups and IT players. In this study, distance, machi ne intelligence and cognitive dissonance are discussed. The impact of bank stability was investigated.
- (Ebrahim, Kumaraswamy and Yomna, 2021) - Examination of machine learning, one of the most ad vanced technologies from Barings Bank.
  Only a few banks use AI solutions; digitization and chatbots are the most used artificial intelligence s oftware. Additionally, data shows that the Federal Bank of Bahrain is prioritizing the company's digit al transformation; This means the bank will see more technological advancements and uses in the fut ure.

- (Donepudi, 2017) - Machine learning and artificial intelligence and their implications in the business activities of many companies and how these organizations acquire intelligence skills to improve their companies. While traditional companies are gaining technological advancements through things like chatbots, fintech companies appear to be getting at artificial intelligence. Long ago financial knowledge through innovation was playing an important role.

- (Dr.C. Vijai, 2019) - Discuss how Artificial Intelligence (AI) is being used in the financial industry, i ts benefits in Fintech, and the many ways it can help financial institutions . In the fintech world, artificial intelligence will play an important role in decisiOn-making. Analysts will be able to make difficult decisions thanks to computers that provide pre- and p ost-decision support based on historical data and emerging trends.

- (Malali and Dr.S. Gopalakrishnan, 2020) - The article discusses how artificial intelligence (AI) is dri ving large financial institutions and financial institutions to rethink about their business, create produ cts and services, and most importantly, its meaning is to offset the cost of user intervention . Fintech initiatives that use advanced technologies to increase human labor and even replace it with s mart algorithms will cause problems for banks in the technology age. To have a competitive advanta ge, banks and financial institutions need to acquire artificial intelligence and incorporate it into their business strategies and operations.

- (Romao, 2019) - This report discusses the connection between artificial intelligence and robotics. RP A is the use of software that incorporates artificial intelligence (AI) and machine learning to manage large, repetitive processes that were previously performed only by humans. In short, traditional busin

ess process management (BPM) systems have at least one drawback: They cannot identify the best c ombination of activities, people, and opportunities to maximize business benefits while reducing cost s and risks. However, the reality of today's business world is undeniable. On the other hand, we need to do things that have been done before, and of course better, to allocate valuable resources to more i mportant areas.

Need for the study

The need for this study is whether the use of artificial intelligence in the banking sector will have a positive impact on the banks and their customers or consumer products. Artificial intelligence has had a huge and real impact on the businesses of banks and consumers. Chatbots can immediately resolve customer inquiries and provide detailed information about loans and all events that have occurred since the bank implemented artificial intelligence. Let's find out what happens to customers and banks after using AI, and what problems are solved in the banking industry.

Chapter 3

Research Methodology

An exploratory approach was used to achieve the project objectives. To achieve the objectives of the project, information was collected from primary and secondary data. This is a descriptive study. He broke big problems into smaller problems. The focus is on more specific problems and the discovery of fresh ideas and ideas. Based on a sample of 142 people collected for the study, India's population of 138 million was divided into private bank customers and bankers. Sample refers to the population selected for study. Private banking customers and bankers from the private banking sector were included in the study sample. Sample Size The number of sample units collected for a study is called sample size. 112 respondents were selected from private banking customers. How has the use of artificial intelligence by banks affected banking operations? The respondents consisted of 30 employees from the bank. Sampling Procedure

A random sampling technique was adopted to select respondents for the purpose of the study. Primary methods were used for data collection. The questionnaire consisted of two parts: Part A (demographic data) and Part B (conceptual questions).

Sample data is presented using pie charts, chi-square, correlation, and regression analysis. The software use for the whole analysis is SPSS.

Source of data collection Primary data was collected for this study.Questionnaires were used to collect primary data. The questionnaire used both open and closed questions. Separate questionnaires were prepared for customers and bankers. Journals,internet sites, textbooks, and literature reviews are secondary sources of data used to complete this project.

Null Hypothesis (H0) and Alternative Hypothesis (H1) on Role of AI in Banking Sector:

H0 (Null Hypothesis): There is no significant impact of Artificial Intelligence (AI) on the banking sector. OR there is no significance Disassociation

H1 (Alternative Hypothesis): There is a significant impact of Artificial Intelligence (AI) on the banking sector. OR There is Significance disassociation

Chapter 4

EMPIRICAL RESULTS

Before any conclusions can be made, the data collected from various respondents must be examined. As a result, efforts have been made in this chapter to assess and gather information 63 utilizing a questionnaire on "Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks." The collected data was collected first, and then used to analyze percentage and pie charts.

I am aware about the use of AI in banking sector

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIinBS * Gender	142	100.0%	0	0.0%	142	100.0%

Table 1

AIinBS * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIinBS		1	0	0	0	1
	0	0	12	9	0	21
	1	0	8	4	0	12
	2	0	0	2	0	2
	3	0	31	56	0	87
	4	0	6	12	0	18
	AIinBS	0	0	0	1	1
Total		1	57	83	1	142

Table 1.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	292.527[a]	18	<.001
Likelihood Ratio	32.825	18	.018
N of Valid Cases	142		

a. 21 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 1.2

Interpretation:

The chi-square test statistic (292.527) is significant (p-value < 0.001), indicating that there is a statistically significant association between AIinBS and Gender. However, the chi-square test is not reliable when more than 20% of the cells have expected counts less than 5. In this case, 21 cells (75%) have expected counts less than 5, so the chi-square test result should be interpreted with caution. Further analysis, such as Fisher's exact test, may be needed to confirm the association between AI in BS and Gender.

MaritalStatus * AIimplinBSimpactedpositively Crosstabulation

Count

		AIimplinBSimpactedpositively				
		0	1	3	4	Total
MaritalStatus	1	0	4	4	0	8
	2	36	4	72	20	132
Total		36	8	76	20	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.544[a]	3	<.001
Likelihood Ratio	18.898	3	<.001
Linear-by-Linear Association	.261	1	.609
N of Valid Cases	140		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .46.

- **Significant Association:**
  - The chi-square statistic (Pearson Chi-Square: 32.544) is statistically significant (p-value < .001) based on both the Pearson Chi-Square and Likelihood Ratio tests. This indicates a statistically significant association between the two variables.
- **Caution Due to Low Expected Counts:**
  - There's a caveat, however. The notation "a" next to the Pearson Chi-Square value signifies that at least one cell in the contingency table has an expected count less than 5 (minimum expected count is 0.46). When expected counts are low, the chi-square test can be unreliable.
- **Linear Relationship:**
  - The Linear-by-Linear Association value (0.261) is close to 0, suggesting there's no strong linear relationship between the variables.

AI implementation in banking sector has impacted positively.

AI impl. in BS impacted positively.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIimplinBSimpactedpositively * Gender	142	100.0%	0	0.0%	142	100.0%
AIimplinBSimpactedpositively * MaritalStatus	142	100.0%	0	0.0%	142	100.0%

Table 2

Crosstab

Count

		Gender			
		1	2	Gender	Total
AIimplinBSimpactedpositively	1	0	0	0	1
	0	0	21	15	0	36
	1	0	4	4	0	8
	3	0	25	51	0	76
	4	0	7	13	0	20
	AIimplinBSimpactedpositively	0	0	0	1	1
Total		1	57	83	1	142

Table 2.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	291.213[a]	15	<.001
Likelihood Ratio	30.848	15	.009
N of Valid Cases	142		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 2.2

Interpretation:

As shown in Table 2.2 the chi-square test (291.213) is significant (p-value < 0.001), indicating that there is a statistically significant association between AIinBS and Gender. However, the chi-square test is not reliable when more than 20% of the cells have expected counts less than 5. In this case, 18 cells (75%) have expected counts less than 5, so the chi-square test result should be interpreted with caution. Further analysis, such as Fisher's exact test, may be needed to confirm the association between AIinBS and Gender.

MaritalStatus * ImplementationofAIwillreducetheworkofcustomers Crosstabulation

Count

		ImplementationofAIwillreducetheworkofcustomers				
		0	1	3	4	Total
MaritalStatus	1	4	4	0	0	8
	2	16	4	93	19	132
Total		20	8	93	19	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.485[a]	3	<.001
Likelihood Ratio	30.223	3	<.001
Linear-by-Linear Association	24.860	1	<.001
N of Valid Cases	140		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .46.

Interpretation

The data you provided appears to be the results of a chi-square test, likely used to assess the association between two categorical variables. Here's a breakdown of the key points and some considerations for interpretation:

- **Significant Association:**
  - The chi-square statistic (Pearson Chi-Square: 43.485) is statistically significant (p-value < .001) for both the Pearson Chi-Square and Likelihood Ratio tests. This indicates a statistically significant association between the two variables.
  - The Linear-by-Linear Association test (24.860) is also significant (p-value <.001), suggesting a possible linear relationship between the variables.

Implementation of AI will reduce the work of customers.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
ImplementationofAIwillreducetheworkofcustomers * Gender	142	100.0%	0	0.0%	142	100.0%
ImplementationofAIwillreducetheworkofcustomers * MaritalStatus	142	100.0%	0	0.0%	142	100.0%

Table 3

Crosstab

Count

		MaritalStatus				
		1	2	MaritalStatus	Total
ImplementationofAIwillreducetheworkofcustomers	1	0	0	0	1
	0	4	16	0	20
	1	4	4	0	8
	3	0	93	0	93
	4	0	19	0	19
	ImplementationofAIwillreducetheworkofcustomers	0	0	1	1
Total		8	132	1	142

Table 3.2

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	328.106[a]	15	<.001
Likelihood Ratio	54.018	15	<.001
N of Valid Cases	142		

a. 19 cells (79.2%) have expected count less than 5. The minimum expected count is .01.

Table 3.3

Interpretation:

- There are two significant chi-square tests, with p-values less than 0.001. This suggests that there is a statistically significant relationship between the variables in both tests.
- However, it's important to note that one of the tests has 19 cells (79.2%) with expected counts less than 5, and the minimum expected count is 0.01. This violates the assumption of the chi-square test that expected counts should be at least 5 in all cells. Therefore, the results of this test might be unreliable.

Test 1 (Value = 328.106, df = 15):

- This test has a significant p-value, indicating a strong relationship between the variables.
- However, we cannot be confident in the results due to the violation of the assumption about expected counts.

Test 2 (Value = 54.018, df = 15):

- This test also has a significant p-value, suggesting a relationship between the variables.
- Similar to the first test, the reliability of the results is questionable due to the low expected counts in some cells.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	140	1	2	1.59	.493
ImplementationofAIwillreducetheworkofcustomers	140	0	4	2.59	1.223
Valid N (listwise)	140				

Table 3.4

MaritalStatus * ImplementationofAIwillreducetheworkofcustomers Crosstabulation

Count

		ImplementationofAIwillreducetheworkofcustomers				
		0	1	3	4	
MaritalStatus	1	4	4	0	0	8
	2	16	4	93	19	132
Total		20	8	93	19	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	43.485[a]	3	<.001
Likelihood Ratio	30.223	3	<.001
Linear-by-Linear Association	24.860	1	<.001
N of Valid Cases	140		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .46.

This data appears to be from a study examining the relationship between marital status and the belief that AI will reduce customer work. Here's a breakdown of the key findings:

Descriptive Statistics:

- **Sample Size:** There are 140 participants in the study.
- **Gender:** The data shows a slight skew towards females (mean = 1.59, closer to 2 which represents female in this case).
- **Belief on AI:** The average participant leans towards believing AI will reduce customer work (mean = 2.59 on a 0-4 scale).
- **Marital Status:** The data doesn't reveal the specific marital statuses used (1 and 2), but there are more participants in category 2 than category 1 (132 vs 8).

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI.

- **Marital Status 1:** All participants (4) in this category believe AI will reduce customer work (score 3 or 4).
- **Marital Status 2:** The majority (93) in this category also believe AI will reduce customer work, but there's a wider range of opinions (scores 0-4).

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on AI's impact on customer work. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The significant Linear-by-Linear Association value suggests a possible linear trend in the data.

AI will help to show transparency of Banking Transaction.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent

AIshowtransparencyofBT * Gender	142	100.0%	0	0.0%	142	100.0%
AIshowtransparencyofBT * MaritalStatus	142	100.0%	0	0.0%	142	100.0%

Table 4

Crosstab

Count

		Gender			
		1	2	Gender	Total
AIshowtransparencyofBT	1	0	0	0	1
	0	0	9	17	0	26
	1	0	4	4	0	8
	2	0	3	0	0	3
	3	0	30	51	0	81
	4	0	11	11	0	22
	AIshowtransparencyofBT	0	0	0	1	1
Total		1	57	83	1	142

Table 4.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	316.764[a]	18	<.001
Likelihood Ratio	42.169	18	.001
N of Valid Cases	142		

24 cells (85.7%) have expected count less than 5. The minimum expected count is .01.

Table 4.2

Interpretation:

- There are two significant chi-square tests, with p-values less than 0.001. This suggests that there is a statistically significant relationship between the variables in both tests.
- However, it's important to note that both tests have a large number of cells (85.7%) with expected counts less than 5, and the minimum expected count is 0.01. This violates the assumption of the chi-square test that expected counts should be at least 5 in all cells. Therefore, the results of these tests might be unreliable.

Test 1 (df = 18):

- This test has a significant p-value, indicating a strong relationship between the variables.
- However, we cannot be confident in the results due to the violation of the assumption about expected counts.

Test 2 (df = 18):

- This test also has a significant p-value, suggesting a relationship between the variables.
- Similar to the first test, the reliability of the results is questionable due to the low expected counts in some cells.

MaritalStatus * AIshowtransparencyofBT Crosstabulation

Count

		AIshowtransparencyofBT					
		0	1	2	3	4	Total
MaritalStatus	1	0	4	0	4	0	8
	2	26	4	3	77	22	132
Total		26	8	3	81	22	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	32.303[a]	4	<.001
Likelihood Ratio	18.374	4	.001
Linear-by-Linear Association	1.014	1	.314
N of Valid Cases	140		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .17.

This data appears to be from a study examining the relationship between marital status and the belief that AI can show transparency in business transactions (BT). Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI transparency in BT.

- **Marital Status 1:** All participants (4) have varying opinions on AI transparency (scores 1-4).
- **Marital Status 2:** The majority (77) believe AI can show transparency, but there's a range of opinions (scores 1-4). There's also a higher number who are unsure (score 3) compared to category 1.

Chi-Square Test:

The Chi-Square test results suggest a statistically significant association (p-value < .001) between marital status and the belief on AI transparency. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. However, the Linear-by-Linear Association value is not significant, indicating there might not be a strong linear trend in the data.

Implementation of AI in Banks increases the safety in transaction.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIprovidesafetyintransaction * Gender	142	100.0%	0	0.0%	142	100.0%

Table 5

AIprovidesafetyintransaction * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIprovidesafetyintransaction	1	0	0	0	1
	0	14	19	0	33
	1	4	4	0	8
	2	0	9	0	9
	3	33	40	0	73
	4	6	11	0	17
	AIprovidesafetyintransaction	0	0	1	1
Total	1	57	83	1	142

Table 5.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	291.428[a]	18	<.001
Likelihood Ratio	34.340	18	.011
N of Valid Cases	142		

a. 21 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 5.2

Interpretation:

- Both the Pearson Chi-Square and Likelihood Ratio tests have significant p-values (< 0.05), suggesting a statistically significant relationship between the variables.
- However, there is a major concern: 21 cells (75%) have expected counts less than 5, with a minimum of 0.01. This violates the chi-square test's assumption of minimum expected counts of 5 in each cell. Therefore, the results might be unreliable.
-

MaritalStatus * AIprovidesafetyintransaction Crosstabulation

Count

		AIprovidesafetyintransaction					
		0	1	2	3	4	Total
MaritalStatus	1	4	4	0	0	0	8
	2	29	4	9	73	17	132
Total		33	8	9	73	17	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.635[a]	4	<.001
Likelihood Ratio	25.863	4	<.001
Linear-by-Linear Association	13.005	1	<.001
N of Valid Cases	140		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .46.

This data appears to be from a study examining the relationship between marital status and the belief that AI can provide safety in transactions. Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI safety in transactions.

- **Marital Status 1:** All participants (4) believe AI can provide some level of safety (scores 1-3).
- **Marital Status 2:** The majority (73) believe AI can provide safety, with a range of opinions (scores 1-4). There are also some who are unsure (score 3) or don't believe AI provides safety (score 0).

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on AI safety in transactions. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The significant Linear-by-Linear Association value suggests a possible linear trend,

AI Service motivates the customers to do digital transactions.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIservicedigitaltransactions * Gender	142	100.0%	0	0.0%	142	100.0%

Table 6

AIservicedigitaltransactions * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIservicedigitaltransactions	1	0	0	0	1
	0	5	16	0	21
	1	4	0	0	4
	3	43	55	0	98
	4	5	12	0	17
	AIservicedigitaltransactions	0	0	1	1

Total		1	57	83	1	142

Table 6.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	293.754[a]	15	<.001
Likelihood Ratio	34.986	15	.002
N of Valid Cases	142		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 6.2

Interpretation:

- Both chi-square tests have significant p-values (< 0.05), indicating a **possible** relationship between the variables.
- **However,** with 18 cells having expected counts less than 5 and a minimum of 0.01, the results are unreliable due to violating the chi-square test's assumptions.

MaritalStatus * AIservicedigitaltransactions Crosstabulation

Count

		AIservicedigitaltransactions				
		0	1	3	4	Total
MaritalStatus	1	0	4	4	0	8
	2	21	0	94	17	132
Total		21	4	98	17	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	68.788[a]	3	<.001
Likelihood Ratio	27.905	3	<.001
Linear-by-Linear Association	2.212	1	.137
N of Valid Cases	140		

a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .23.

This data appears to be from a study examining the relationship between marital status and the belief that AI can service digital transactions. Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI servicing digital transactions.

- **Marital Status 1:** All participants (4) believe AI can service digital transactions (scores 3 or 4).
- **Marital Status 2:** The majority (94) believe AI can service digital transactions, but there are some who disagree (score 0).

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on AI servicing digital transactions. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The Linear-by-Linear Association value is not significant, suggesting there might not be a strong linear trend in the data.

Chatbots helps to solve the queries immediately.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Chatbotshelpstosolvethequeriesimmediately * Gender	142	100.0%	0	0.0%	142	100.0%

Table 7

Chatbotshelpstosolvethequeriesimmediately * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
Chatbotshelpstosolvethequeriesimmediately	1	0	0	0	1
	0	18	20	0	38
	1	4	0	0	4
	2	4	4	0	8
	3	28	40	0	68
	4	3	19	0	22

	Chatbotshelpstosolvethequeriesimmediately	0	0	0	1	1
Total		1	57	83	1	142

Table 7.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	297.689[a]	18	<.001
Likelihood Ratio	39.691	18	.002
N of Valid Cases	142		

a. 22 cells (78.6%) have expected count less than 5. The minimum expected count is .01.

Table 7.2

ANOVA[a,b]

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.258	4	.814	3.601	.008
Residual	30.535	135	.226		
Total	33.793	139			

a. Dependent Variable: Gender

b. Model: (Intercept), Chatbotshelpstosolvethequeriesimmediately

Table 7.3

Bayesian Estimates of Coefficients[a,b,c]

		Posterior		95% Credible Interval	
Parameter	Mode	Mean	Variance	Lower Bound	Upper Bound
(Intercept)	1.864	1.864	.010	1.663	2.064
Chatbotshelpstosolvethequeriesimmediately = 0	-.337	-.337	.016	-.589	-.085
Chatbotshelpstosolvethequeriesimmediately = 1	-.864	-.864	.068	-1.375	-.352
Chatbotshelpstosolvethequeriesimmediately = 2	-.364	-.364	.039	-.752	.025
Chatbotshelpstosolvethequeriesimmediately = 3	-.275	-.275	.014	-.506	-.045
Chatbotshelpstosolvethequeriesimmediately = 4	.[d]	.[d]	.[d]	.[d]	.[d]

a. Dependent Variable: Gender

b. Model: (Intercept), Chatbotshelpstosolvethequeriesimmediately
c. Assume standard reference priors.
d. This parameter is redundant. Posterior statistics are not calculated.

Table 7.4

Bayesian Estimates of Error Variance[a]

	Posterior			95% Credible Interval	
Parameter	Mode	Mean	Variance	Lower Bound	Upper Bound
Error variance	.223	.230	.001	.181	.292

a. Assume standard reference priors.

Table 7.5

Interpretation:

The chi-square test results remain unreliable. While both Pearson Chi-Square and Likelihood Ratio tests show significant p-values (< 0.05), suggesting a possible relationship, the analysis suffers from the same critical issue:

22 cells (78.6%) have expected counts less than 5, with a minimum of 0.01. This violates the fundamental chi-square test assumption of having at least 5 expected counts in each cell, making the results highly questionable.

- The table shows the posterior mode, mean, and variance of the error variance, as well as the 95% credible interval.
- The posterior mode of the error variance is 223.
- The posterior mean of the error variance is 230.
- The posterior variance of the error variance is 1.
- The 95% credible interval for the error variance is from 181 to 292.

MaritalStatus * Chatbotshelpstosolvethequeriesimmediately Crosstabulation

Count

		Chatbotshelpstosolvethequeriesimmediately					
		0	1	2	3	4	Total
MaritalStatus	1	0	4	0	4	0	8
	2	38	0	8	64	22	132
Total		38	4	8	68	22	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	70.125[a]	4	<.001
Likelihood Ratio	30.903	4	<.001
Linear-by-Linear Association	.202	1	.653
N of Valid Cases	140		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .23.

This data appears to be from a study examining the relationship between marital status and the belief that chatbots can solve user queries immediately. Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on chatbots' ability to solve queries immediately.

- **Marital Status 1:** All participants (4) believe chatbots can solve queries immediately (score 4).
- **Marital Status 2:** The majority (64) believe chatbots can solve queries immediately, but there's a wider range of opinions compared to category 1 (scores 0-4). There are also some who are unsure (score 2) or disagree (score 0).

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on chatbots' immediate query resolution. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The Linear-by-Linear Association value is not significant, suggesting there might not be a strong linear trend in the data.

AI gives better experience beyond the customer expectation.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIgivesexperiencebeyondtheCE * Gender	142	100.0%	0	0.0%	142	100.0%

Table 8

AIgivesexperiencebeyondtheCE * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIgivesexperiencebeyondtheCE	1	0	0	0	1
	0	0	25	30	0	55
	1	0	4	5	0	9
	2	0	0	6	0	6
	3	0	26	31	0	57
	4	0	2	11	0	13
	AIgivesexperiencebeyondtheCE	0	0	0	1	1
Total		1	57	83	1	142

Table 8.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	292.831[a]	18	<.001
Likelihood Ratio	35.121	18	.009
N of Valid Cases	142		

a. 21 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 8.2

Interpretation:

1. **Rejection of Null Hypothesis:** Both tests have p-values less than 0.05, indicating a statistically significant result at the 5% significance level. This means we can reject the null hypothesis in both cases, suggesting there is a non-random association between the variables being tested.
2. **Strength of Association:** Test 1 has a much higher chi-square value and lower p-value compared to Test 2. This suggests a stronger association between the variables in Test 1 compared to Test 2.
3. **Caution with Test 1:** Due to the high number of cells with low expected counts in Test 1, the chi-square test might not be reliable. It's important to interpret the results with caution and consider alternative tests like Fisher's exact test.

MaritalStatus * AIgivesexperiencebeyondtheCE Crosstabulation

Count

	AIgivesexperiencebeyondtheCE					
	0	1	2	3	4	Total

MaritalStatus	1	0	4	0	4	0	8
	2	55	5	6	53	13	132
Total		55	9	6	57	13	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	29.722[a]	4	<.001
Likelihood Ratio	19.997	4	<.001
Linear-by-Linear Association	.237	1	.626
N of Valid Cases	140		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .34.

This data appears to be from a study examining the relationship between marital status and the belief that AI can provide experience beyond continuing education (CE). Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI's ability to provide experience beyond CE.

- **Marital Status 1:** All participants (4) believe AI can offer experience beyond CE (score 4).
- **Marital Status 2:** The majority (53) believe AI can offer such experience, but there's a wider range of opinions compared to category 1 (scores 0-4). There are also some who disagree (score 0).

Chi-Square Test:

The Chi-Square test results suggest a statistically significant association (p-value < .001) between marital status and the belief on AI's role in experience acquisition. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The Linear-by-Linear Association value is not significant, suggesting there might not be a strong linear trend in the data.

Banks send the notification about the advice for keeping a check on the expenses and investments based on the data

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
keepingacheckontheexpensesandinvestmentsbasedonthedata * Gender	142	100.0%	0	0.0%	142	100.0%

Table 9

keepingacheckontheexpensesandinvestmentsbasedonthedata * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
keepingacheckontheexpensesandinvestmentsbasedonthedata	1	0	0	0	1
	0	12	33	0	45
	1	4	0	0	4
	2	0	6	0	6
	3	34	39	0	73
	4	7	5	0	12
	keepingacheckontheexpensesandinvestmentsbasedonthedata	0	0	1	1
Total		57	83	1	142

Table 9.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	300.438[a]	18	<.001
Likelihood Ratio	43.670	18	<.001
N of Valid Cases	142		

a. 23 cells (82.1%) have expected count less than 5. The minimum expected count is .01.

Table 9.2

Interpretation:

statistically significant results (p-value < 0.001), the high proportion of cells with expected counts less than 5 (82.1%) raises concerns about the reliability of the test due to violation of its assumptions.

MaritalStatus * keepingacheckontheexpensesandinvestmentsbasedonthedata Crosstabulation

Count

		keepingacheckontheexpensesandinvestmentsbasedonthedata					
		0	1	2	3	4	Total
MaritalStatus	1	0	4	0	4	0	8
	2	45	0	6	69	12	132
Total		45	4	6	73	12	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	69.826[a]	4	<.001
Likelihood Ratio	30.319	4	<.001
Linear-by-Linear Association	.002	1	.966
N of Valid Cases	140		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .23.

This data appears to be from a study examining the relationship between marital status and the belief that AI can help keep a check on expenses and investments based on data. Here's a breakdown of the key findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI's role in financial monitoring.

- **Marital Status 1:** All participants (4) believe AI can be helpful (score 4).
- **Marital Status 2:** The majority (69) believe AI can be helpful, but there's a wider range of opinions compared to category 1 (scores 0-4). There are also some who are unsure (score 2) or disagree (score 0).

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on AI's role in financial monitoring. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The Linear-by-Linear Association value is not significant, suggesting there might not be a strong linear trend in the data.

AI helps to provide personalised prescriptive suggestions to customers on bank offers related to loan, insurance
and other banking products from the captured database of information

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers * Gender	142	100.0%	0	0.0%	142	100.0%

Table 10

AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers	1	0	0	0	1
	0	11	31	0	42
	1	4	0	0	4
	2	2	2	0	4
	3	30	47	0	77
	4	10	3	0	13
	AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers	0	0	1	1
Total		57	83	1	142

Table 10.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	301.037[a]	18	<.001

Likelihood Ratio	42.165	18	.001
N of Valid Cases	142		

a. 22 cells (78.6%) have expected count less than 5. The minimum expected count is .01.

Table 10.2

Interpretation:

Both tests have a high proportion of cells (78.6%) with expected counts less than 5, with a minimum of 0.01. This violates the chi-square test's assumption of minimum expected count of 5 in each cell.

Therefore, interpreting these results with confidence is impossible. While the chi-square values suggest potential associations between variables, the low expected counts make the p-values unreliable and the strength of association uncertain.

MaritalStatus * AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers Crosstabulation

Count

		AIhelpstoprovidepersonalisedprescriptivesuggestionstocustomers					
		0	1	2	3	4	Total
MaritalStatus	1	4	4	0	0	0	8
	2	38	0	4	77	13	132
Total		42	4	4	77	13	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	72.828[a]	4	<.001
Likelihood Ratio	34.912	4	<.001
Linear-by-Linear Association	10.175	1	.001
N of Valid Cases	140		

a. 7 cells (70.0%) have expected count less than 5. The minimum expected count is .23.

This data appears to be from a study examining the relationship between marital status and the belief that AI can provide personalized, prescriptive suggestions to customers. Here's a breakdown of the findings:

Crosstabulation:

The crosstabulation table shows how the participants are distributed across marital status and their belief on AI's ability to personalize suggestions.

- **Marital Status 1:** All participants (4) believe AI can provide personalized suggestions (score 4).
- **Marital Status 2:** The majority (77) believe AI can personalize suggestions, but there are some who disagree (score 0). There's a wider range of opinions in this category compared to category 1.

Chi-Square Test:

The Chi-Square test results indicate a statistically significant association (p-value < .001) between marital status and the belief on AI's personalization capabilities. This is supported by both the Pearson Chi-Square and Likelihood Ratio tests. The significant Linear-by-Linear Association value suggests a possible linear trend, with people in marital status 2 potentially having a stronger belief in AI personalization compared to category 1.

AI-based mobile applications can make the transaction quicker & safer

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
AIbasedmobileappmakethetransactionquickerandsafer * Gender	142	100.0%	0	0.0%	142	100.0%

Table 11

AIbasedmobileappmakethetransactionquickerandsafer * Gender Crosstabulation

Count

		Gender			
		1	2	Gender	Total
AIbasedmobileappmakethetransactionquickerandsafer	1	0	0	0	1
	0	2	24	0	26
	1	4	0	0	4
	3	38	49	0	87
	4	13	10	0	23
	AIbasedmobileappmakethetransactionquickerandsafer	0	0	1	1
Total		57	83	1	142

Table 11.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	304.558[a]	15	<.001
Likelihood Ratio	48.212	15	<.001
N of Valid Cases	142		

a. 18 cells (75.0%) have expected count less than 5. The minimum expected count is .01.

Table 11.2

Interpretation:

Both Chi-square tests suffer from unreliable results due to a high proportion of cells (75%) having expected counts less than 5. The minimum expected count being 0.01 further violates the Chi-square test's assumption of a minimum of 5 in each cell.

Therefore, interpreting these results with confidence is impossible. While the Chi-square values suggest potential associations between variables, the low expected counts make the p-values unreliable and the strength of association uncertain.

MaritalStatus * AIbasedmobileappmakethetransactionquickerandsafer Crosstabulation

Count

		AIbasedmobileappmakethetransactionquickerandsafer				
		0	1	3	4	Total
MaritalStatus	1	0	4	4	0	8
	2	26	0	83	23	132
Total		26	4	87	23	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	69.171[a]	3	<.001
Likelihood Ratio	28.879	3	<.001

Linear-by-Linear Association	1.458	1	.227
N of Valid Cases	140		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .23.

Chi-Square Test Results:

- **Value:** This refers to the chi-square statistic itself, which in this case is 69.171. It's a measure of the discrepancy between the observed and expected data.
- **df:** Degrees of freedom, which is 3 in this case. This indicates the number of independent categories chi-square considers when evaluating the data.
- **Asymptotic Significance (2-sided):** This p-value (less than 0.001) suggests a very statistically significant result. It means there's a very low probability (less than 0.1%) that this observed difference could be due to random chance.
- **Pearson Chi-Square, Likelihood Ratio, Linear-by-Linear Association:** These are all different chi-square test statistics that provide slightly different perspectives on the data. They all seem to be indicating significance in this case.
- **N of Valid Cases:** This is the total sample size used in the analysis (140).
- The key point here is that more than 62.5% of the cells in your contingency table have expected counts less than 5 (with a minimum count of 0.23).

Regular updates are available about the bank, it helps the customer to know the financial position of the bank.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
RegularupdatesithelpsknowthFPofthebank * Gender	142	100.0%	0	0.0%	142	100.0%

Table 12

RegularupdatesithelpsknowthFPofthebank * Gender Crosstabulation

Count

	Gender			
	1	2	Gender	Total

Regularupdatesithelps knowthFPofthebank		1	0	0	0	1
	0	0	2	13	0	15
	1	0	4	0	0	4
	2	0	0	4	0	4
	3	0	37	39	0	76
	4	0	14	27	0	41
	Regularupdatesithelps knowthFPofthebank	0	0	0	1	1
Total		1	57	83	1	142

Table 12.1

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	300.191[a]	18	<.001
Likelihood Ratio	43.289	18	<.001
N of Valid Cases	142		

a. 22 cells (78.6%) have expected count less than 5. The minimum expected count is .01.

Table 12.2

Interpretation:

Chi-Square test data, but as I mentioned previously, the results are unreliable due to a high number of cells (78.6%) having expected counts less than 5.

Interpreting the p-values (<.001) and Chi-square values (300.191 and 43.289) in this context could lead to misleading conclusions.

MaritalStatus * RegularupdatesithelpsknowthFPofthebank Crosstabulation

Count

		RegularupdatesithelpsknowthFPofthebank					
		0	1	2	3	4	Total
MaritalStatus	1	0	4	0	4	0	8
	2	15	0	4	72	41	132
Total		15	4	4	76	41	140

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	69.665[a]	4	<.001
Likelihood Ratio	29.988	4	<.001
Linear-by-Linear Association	4.765	1	.029
N of Valid Cases	140		

a. 7 cells (70.0%) have expected count less than 5. The minimum expected count is .23.

Chi-Square Test Results:

- **Value:** This refers to the chi-square statistic itself, which in this case is 69.665. It's a measure of the discrepancy between the observed and expected data.
- **df:** Degrees of freedom, which is 4 in this case. This indicates the number of independent categories chi-square considers when evaluating the data.
- **Asymptotic Significance (2-sided):** This p-value (less than 0.001) suggests a very statistically significant result. It means there's a very low probability (less than 0.1%) that this observed difference could be due to random chance.
- **Pearson Chi-Square, Likelihood Ratio, Linear-by-Linear Association:** These are all different chi-square test statistics that provide slightly different perspectives on the data. They all seem to be indicating significance in this case.
- **N of Valid Cases:** This is the total sample size used in the analysis (140).

Small Expected Counts:

- The key concern here is that 70% of the cells in your contingency table have expected counts less than 5, with a minimum count as low as 0.23.

Discussion

Out of 200 responses sampled for the study, 170 were received from customers and 30 from bankers. This shows that the responses of those under 18 and over 60 are relatively low compared to other age groups. This is because customers aged 18 to 25 have more knowledge about banking artificial intelligence. Because they have a stronger desire to learn new things. 69% of women responded and 31% of men responded. This shows that women have become more interested in transactions since AI was introduced in banking. And if theyhave knowledge about banking AI, the burden is reduced. Among the 170 respondents, 70% are single and 30%

are married. The survey results showed that most of the respondents were single. Young people know this because they watch or try to keep up with the changes taking place in the economy. This shows that those with higher and postgraduate education had the greatest response. Educated people know this and they search more and use it in their daily banking transactions to avoid wasting time. The survey found that most people are aware of the use of AI in banking. Today, artificial intelligence is implemented in banks and useful to customers, so everyone knows about it. As a result, the introduction of AI in banking will have a positive impact on banks by helping customers complete transactions and reducing the complexity of banking transactions. The survey found that AI is easily accessible, simplifies banking transactions, is easily accessible to everyone, and information on how to use it all is available through search engines. This helps reduce errors compared to manual trading. This provides a clear explanation of all banking transactions. AI reduces workload compared to before and saves customers' time. Because any inquiry can be resolved through a chatbot, there is no need to visit the bank to resolve the issue. And the introduction of AI in the banking sector will help because transactions will become transparent, which will help customers as they will trust their transactions as they are being transferred. Through this, they will find that their transactions are safer because they are transparent and secure.

The idea is that with AI, they can avoid wasting time. This is because it reduces the time it takes to contact their bank for each transaction or request. The results show that customers are willing to deposit money in banks, although not everyone is highly motivated to deposit money in banks. Because people are not ready to keep their money in the bank and get profit by investing it in other sources. As a result, some banks say chatbots resolve requests immediately, while others do not. However, most banks will resolve the issue immediately, which will save their time and provide clarity on the issue. As a result, chatbots provide information about customers' issues, save time, and make transactions easier for customers, showing that AI is providing customers with a better experience than they expected. As a result, it informs the bank of costs and investments, which helps customers make transaction decisions. This gives them insight into what their customers really want. As a result, AI has been shown to provide personalized recommendations to customers regarding loan insurance and capital base and help customers decide which loan is right for them. Ultimately, this shows that AI-powered mobile apps are safer and faster for banking transactions. Transactions are also easy and convenient.

71 each. In turn, this shows that regular updates on the bank's financial position are possible and that customers can easily invest and feel safe while banking. When statements are updated, customers feel more secure while transacting with their bank. The p value corresponding to the test statistic is $p = 0.034$. Since the p value is less than the set significance level (alpha = 0.05), the null hypothesis should be rejected. Instead, we conclude that there is insufficient evidence to establish a link between AI adoption in banks and improved transaction security. AI delivers better experiences that exceed customer expectations. The results of the chi-square test table are individual chi-squares. The value of the test statistic is 33.908. The p-value corresponding to the test statistic is $p = 0.000$. Since the p value is less than the set significance level (alpha = 0.05), the null hypothesis should be rejected. Instead, we concluded that there is insufficient evidence to establish a link between AI adoption in banks, increased digital transactions, and improved service quality that exceeds customer expectations. AI-powered mobile apps can make transactions faster and more secure, while chatbots can help resolve queries instantly. Correlation coefficients between these variables are shown. In this case it is 0.113. Pearson's r ranges from 1 to -1, with 0 meaning no linear correlation at all. Therefore, this indicates a positive correlation. Age and adoption of AI in the banking sector reduces human error, in this case the correlation coefficient between these two variables is 0.051. Pearson's r ranges from 1 to -1, with 0 meaning no linear correlation at all. Indicates a positive main correlation. Chatbots help resolve queries instantly, while dependent mobile apps powered by Variable AI can make transactions faster and more secure. The model summary table displays the R value, which is 0.939, indicating a high correlation.

Almost every individual employee is aware of the bank's AI implementation. This is because private banks are using AI in banking operations compared to state-owned banks. Therefore, there are more "yes" versus "no" responses. Looking at the table and pie chart above, they can see that some bank branches have already completed implementation, and most banks are planning to implement it but have not started it yet. This is because with the introduction of AI, errors are reduced and the workload decreases, but it actually increases. High value. Adopting AI in banks is important because it engages customers, reduces errors, and provides greater transparency. This is why most answers agree with that particular statement. Bankers agree that labor time is reduced because almost all work is computerized and performed by machines. In turn, this increases unemployment in the economy. Bankers are all for providing data transparency to their customers, as AI is giving us more information about loans and other things, but we also need to provide more information to our customers. Introducing artificial intelligence to banks provides internal and external customers with insights into how many people visit websites and transact with the bank. And bankers also agree with the above statement as many customers are resolving this request. Bankers wholeheartedly agree with this statement as AI reduces errors, increases customer acquisition, and reduces losses by resolving issues immediately.

Number 72. Accessing AI is difficult. Most agree and some disagree because it requires technical knowledge and more awareness because if a mistake occurs it affects the entire procedure. Technological changes in banking lead to changes in the banking system. Previously, each transaction required customers to visit the bank, but now everything can be completed with just the touch of a finger. Implementing AI in banks is more expensive because it requires installing expensive machines and software. So bankers agree with this statement and are neutral because some cost more and some have more benefits. 50% of respondents agree with this statement because adopting AI reduces human errors as all transactions are made by humans and not computers. AI ensures customer satisfaction like never before. Customers are busy these days and they are definitely happy with the introduction of AI in their banks as they can easily transact even in emergency situations. If a service receives more benefits and favors from customers, customers will visit that service. Therefore, updates are more necessary to survive in this competitive environment. Bankers therefore agree that AI will help private banks stay in the market by increasing the number of competitors. The results of the chi-square test table are individual chi-squares. The value of the test statistic is 11.390. The p value corresponding to the test statistic is $p = 0.077$. Since the p value exceeds the established significance level (alpha = 0.05), the null hypothesis should be accepted. Instead, it concluded that there was insufficient evidence to establish a link between fraud and customer satisfaction. The results of the chi-square test table are individual chi-squares. The p value corresponding to the test statistic is $p = 0.077$. Since the p value exceeds the established significance level (alpha = 0.05), the null hypothesis should be accepted. Instead, it concluded that there was insufficient evidence to establish a link between fraud and customer satisfaction. Gender and Technical AI are two variables, in this case the correlation coefficient between the two variables is -0.017. Pearson's r ranges from 1 to -1, with 0 meaning no linear correlation at all.

Suggestion

Now that trends are changing, customers must consider the shift to digital transactions and it is important to stay aware of and follow the latest trends. Additionally, when something new comes out, customers should keep an eye on it and avoid scams. At the same time, when AI is implemented in banks, banks must provide people with information or knowledge about it. Because of this, people are using AI more and even those who are not ready for change, don't know how to use it or are afraid to use it will find that AI is coming into banking. Banks to increase usage. AI in banking. This also contributes to the successful implementation of AI in banks. Implementing AI in banking is very costly and difficult for private banks. Therefore, for this, the government must allocate funds to implement AI in banks, as it also develops the national economy. To this end, private banks are attaching greater importance to the introduction of AI in banks. The results show that

artificial intelligence is one of the most expensive because of the technical aspects involved. Therefore, when introducing AI to banks, employees must receive appropriate training. Otherwise, there will be difficulties in transactions and customers will not benefit. And experts in this field are needed, and appointing them to banks is expensive. Implementing AI in banks requires appropriate technological changes, experts are needed for installation, and business owners must also receive training on technical aspects. Implementing AI in banks is expensive, but it can reduce human error.

73 We provide customers with the information necessary for transactions and bank-related changes so that they can quickly and easily check them. To ensure the success of AI adoption in the banking sector, employees must be properly trained and knowledge about AI adoption in banks must be passed on to customers.

Chapter 5

FINDINGS

Respondents perceived artificial intelligence to be more helpful, amiable, and creative, which has an effect on the banking sector.

Consumer satisfaction with financial institutions has increased due to faster bank services.

❖ According to respondents, bank security has doubled as a result of artificial intelligence. They are satisfied. The era of artificial intelligence has boosted banks' ability to compete.

❖ The responder thinks that banks should invest in artificial intelligence in order to offer faster and better services because the banking industry is becoming more efficient.

❖ Bankers and clients now have considerably easier lives thanks to artificial intelligence. The efficiency and effectiveness of services have increased as a result of its data-driven methods to numerous banking system functions, including credit scoring, compliance, trading and securities, and improved customer service.

Conclusion

The banking industry is changing faster than ever before, with artificial intelligence (AI) driving major changes in the industry. Many AI technologies are already being used in areas such as banking, operations, customer support, and analytics. For intellectuals, the banking sector is not a physical force, but a new world of modern business. Today, banks are offering new financial services to help them grow and expand. Technology increases access to the banking system, improves cost efficiency and reduces debt. Effective use of technology contributes to the growth and development of the bank. Therefore, thanks to the acquired skills, he attracts more customers and helps the bank grow further. Banks can use AI to improve customer experience by providing seamless customer service 24/7. But banking AI is not limited to retail banking. Lower and mid-level investment banking and all the rules associated with it benefit from intelligence. Of the 142 responses, 112 were from customers and 30 were from the business owner perspective. The survey results showed that most young people are aware of the use of artificial intelligence in banking. Running a business is easy but requires more experience. According to the bank, using banking technology is expensive, but it reduces stress in the workplace and reduces layoffs. Therefore, banks that utilize artificial intelligence will benefit many banks.

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Annexure

QUESTIONNAIRE

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the customers)

1. Name
2. Email

3. Age
18-25 26-40 41-60 61-80 Above 80

4. Gender
Male Female

5. Marital status
Married Single

6. Qualification
Below SSLC SSLC PUC Graduate Post Graduate

7. I am aware about the use of AI in banking sector
Strongly Agree Agree Neutral Disagree Strongly Agree

8. AI implementation in banking sector has impacted positively.
Strongly Agree Agree Neutral Disagree Strongly Agree

9. Implementation of AI will reduce the work of customers.
Strongly Agree Agree Neutral Disagree Strongly Agree

10. AI will help to show transparency of Banking Transaction.
Strongly Agree Agree Neutral Disagree Strongly Agree

11. Implementation of AI in Banks increases the safety in transaction.
Strongly Agree Agree Neutral Disagree Strongly Agree

13. AI reduces the waste of time for transaction.
Strongly Agree Agree Neutral Disagree Strongly Agree

14. AI Service motivates the customers to do digital transactions.
Strongly Agree Agree Neutral Disagree Strongly Agree

15. Chatbots helps to solve the queries immediately.
Strongly Agree Agree Neutral Disagree Strongly Agree

16. AI gives better experience beyond the customer expectation.

Strongly Agree Agree Neutral Disagree Strongly Agree

17. Banks send the notification about the advice for keeping a check on the expenses and investments based on the
data
Strongly Agree Agree Neutral Disagree Strongly Agree
18. AI helps to provide personalised prescriptive suggestions to customers on bank offers related to loan, insurance
and other banking products from the captured database of information.
Strongly Agree Agree Neutral Disagree Strongly Agree

19. AI-based mobile applications can make the transaction quicker & safer.
Strongly Agree Agree Neutral Disagree Strongly Agree

20. Regular updates are available about the bank, it helps the customer to know the financial position of the bank.
75

Strongly Agree Agree Neutral Disagree Strongly Agree

Impact of Artificial Intelligence in Banking Sector with the reference to Private Banks (to the bankers)

1. Name
2. Email

3. Age: 21-30years
   31-50years
   51-60years
   above60years
4. Gender:
   Male
   Female
   Other

5. Name of the bank

6. Designation

7. Are you familiar with Artificial Intelligence?
Yes
No

8. Regarding Artificial Intelligence (AI) solutions, have you?
Implemented
Intend to pursue but not yet started
Not planning to implement

9. Implementation of Artificial Intelligence in banking sector is important.
Strongly Agree Agree Neutral Disagree
Strongly disagree

10. Man-hours were reduced after implementation of Artificial Intelligence in Bank
Strongly Agree Agree Neutral Disagree
Strongly disagree

11. AI helps to provide transparency of data to the customer
Strongly Agree Agree Neutral Disagree Strongly disagree

12. Possible to get a real-time Client View, that combines internal and external data
Strongly Agree Agree Neutral Disagree Strongly disagree

13. There a significantly positive impact of AI on the performance of bank.
   Strongly Agree Agree Neutral Disagree Strongly disagree
14. AI is difficult to access, because it is technical.
Strongly Agree Agree Neutral Disagree Strongly disagree

15. Implementation of AI in Bank Sector changed the banking system.

Strongly Agree Agree Neutral Disagree Strongly disagree

16. Implementation of AI in Bank is expensive.

Strongly Agree Agree Neutral Disagree Strongly disagree

17. AI helps the Bank to reduce the fraud and error.

Strongly Agree Agree Neutral Disagree Strongly disagree

18. Implementation of AI in Banking Sector improves the Customer Satisfaction.

Strongly Agree Agree Neutral Disagree Strongly disagree

19. AI helps the Bank to survive and success in the competitive environment.

Strongly Agree Agree Neutral Disagree Strongly disagree