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An Emperical Study on Employee Readiness for Adopting Artificial Intelligence at Workplace Amongst Selected Bank Employees of Vadodara City

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I. Introduction

Artificial Intelligence (AI) is the development of computer systems that are able to perform tasks that would require human intelligence, Example, visual perception, speech recognition, decision making, translation between languages etc. Artificial Intelligence is a technology that is defining new-age paradigms of operating business. From recruitment to talent management, AI has the power to transform employee experience manifolds through speedy and accurate processing of large volumes of data. In the era today, AI capabilities are scaling new heights and driving the way we function. The success of any organization is dependent on how efficiently and effectively people, process and technology combine and delivers value at optimum cost. Artificial Intelligence helps to automate most of the back office transactional work thereby enabling quick service delivery.

Artificial Intelligence is primarily a technological tool that aims to help us solve cognitive issues and enabling machines to "think like humans". Its core components are- High speed computation through complex machine algorithms in handling and processing huge data volumes Today, Artificial Intelligence is driven by two fundamental technologies – machine learning and deep learning. A machine with strong AI is able to think and act just like a human. It is able to learn from experiences. Machine learning is an application of AI that gives machines the ability to learn and improve without the help of humans or new programming. It can be called as a computational model of human behavior.AI can be used in the areas like business, defence, healthcare and so on.

Industries across the world are embracing AI but in case of banking industry AI is still in its infancy stage. Certain AI tools are being adopted in the banking sector but majorly all task are still not AI enabled. In adoption of any change in the organization, the people factor plays a major role.

The way the human resource embraces the change, defines the success or failure of the new systems, processes etc. therefore we can say that the people factor is crucial for the purpose of change implementation and overall organizational success.

This paper aims to study whether the banking sector is now ready to welcome this wave of change. And has a special focus on People readiness in adopting AI amongst the employees of the selected Private sector banks of Vadodara City.

II. Purpose Of Study

This paper aims to examine how far the people factor in the organization is looking forward to adapt and accept the wave of artificial intelligence.

III. Methodology

This study consists of primary and secondary data. Convenience sampling method is used to draw the suitable sample in Vadodara City. Primary data has been collected through the help of structured non disguised close ended questionnaire using google form.5 point Likert scale is used for collecting the responses. The collected data is tabulated, analysed and findings are drawn.

Variable Under Study

1. Employee Perception
2. Leadership
3. Employee attitude

HYPOTHESIS

H01: Employees have a positive perception towards application of AI.

H02: Leadership has a direct impact in accepting the upcoming change in form of AI H03: Employees have a positive attitude towards AI.

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IV. Literature Review

Balakrishna DR(Senior VP, Service Offering Head – Energy, Communications, Services and AI & Automation Services, Infosys**)** Globally, the financial services industry has proved to be an enthusiastic adopter of Artificial Intelligence (AI) driven by the availability of data and investment appetite. Creative implementation of AI by start-ups and fintechs has helped further this trend. From personalisation to customer service, fraud detection and prevention to compliance, and risk monitoring to intelligent contract documents, AI has helped banks gain better control and predictability.

Today, customers expect faster, personal, and meaningful services and interactions with their banks and little tolerance for generic unsolicited messages. Therefore, banks must leverage AI to balance the need for privacy and security with personalisation and engagement. That said, the Indian banking sector has some amount of catching up to do.

While Indian banks have explored the use of AI, it has primarily been used to improve customer experience by adding chatbots as an additional interface for customers like SIA by State Bank of India, Eva by HDFC and iPal by ICICI. State-owned banks have been slow to leverage AI, largely because AI implementation requires banks to operate outside of the traditional privacy framework. India still does not have robust data protection and privacy policy. Reserve Bank of India (RBI) needs to take a commanding and dynamic role in framing regulations on emerging technologies, data privacy and ensuring the business interests of the banks.

Banks must adopt new business models simultaneously to integrate AI into their strategic plans and explore the use of AI for analytics and to improve customer experience. However, reliance on legacy systems, lack of data science talent, and cost constraints have impeded seamless adoption of AI. They must focus on three key aspects:

Fraud detection: AI plays a vital role in fraud detection, given the heightened threat of cyberattacks. As per the 2019 RBI annual report, losses due to banking frauds have risen by a whopping 73.8% despite the Government's efforts to curb them. What is more alarming is that banks took an average of 22 months between the occurrence of fraud and its detection, as per RBI data. Considering RBI's zero-liability safety net in the event of cyber frauds, it is imperative banks adopt best-fit practices and technology levers to mitigate these risks. With adoption of real- time payments, there has also been rapid innovation in the digital fraud landscape.

Set against this backdrop, banks must deploy context-sensitive AI solutions to enable advanced and adaptive real-time monitoring of their payment networks. These AI solutions additionally leverage relevant data points to assess transaction risk, true identity-matching, and identification of complex typologies and patterns.

Digitisation of processes: The tremendous proliferation of mobile devices and the internet can be leveraged to enable the superior user experience and analytics-based functionalities that give consumers an insight into their spending patterns and provide recommendations on investment and risk profiles. For instance, digitising the KYC process to eliminate the need for physical document submission and verification is something that traditional banks still do not offer. This can be simplified by utilising AI-based computer vision technology to verify documents, Optical/Intelligent Character Recognition (OCR/ICR) technologies to digitise scanned documents, and Natural Language Processing (NLP) to make sense of them.

Decision making: AI is a great fit in areas where decisions are based on available structured and unstructured data. For example, it can help predict potential loan defaulters and offer loss mitigation strategies that will work for them. It can help determine the best time to approach a customer to sell a new product. AI-based smart environments can collate data from multiple sources and drive an inference and enable SMEs to take decisions. AI can also improve straight-through processing using Intelligent Automation to automate repetitive processes that need decision making.

Given the magnitude of the challenge, it might make sense for banks to come together to establish a consortium for knowledge sharing on AI. This would also help India's numerous regional and cooperative banks that are behind on the technology curve. A consortium could help uplift these small banks and enable them to be integrated seamlessly into a broader nationwide secure banking network. Whichever way it happens, AI in Indian banking is only set to grow.

Anjum Khurshid, Associate Vice President – Corporate Business Services Transition, Business Process Services, Wipro Harnessing cognitive technology with Artificial Intelligence (AI) brings the advantage of digitization to banks and helps them meet the competition posed by FinTech players. In fact, about 32% of financial service providers are already using AI technologies like Predictive Analytics, Voice Recognition, among others, according to a joint research conducted by the National Business Research Institute and Narrative Science[2].

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Artificial Intelligence is the future of banking as it brings the power of advanced data analytics to combat fraudulent transactions and improve compliance. AI algorithm accomplishes anti-money laundering activities in few seconds, which otherwise take hours and days. AI also enables banks to manage huge volumes of data at record speed to derive valuable insights from it. Features such as AI bots, digital payment advisers and biometric fraud detection mechanisms lead to higher quality of services to a wider customer base. All this translates to increased revenue, reduced costs and boost in profits.

AI is strengthening competitiveness of banks through:

Enhanced customer experience: Based on past interactions, AI develops a better understanding of customers and their behavior. This enables banks to customize financial products and services by adding personalized features and intuitive interactions to deliver meaningful customer engagement and build strong relationships with its customers.

Prediction of future outcomes and trends: With its power to predict future scenarios by analyzing past behaviors, AI helps banks predict future outcomes and trends. This helps banks to identify fraud, detect anti-money laundering pattern and make customer recommendations. Money launderers, through a series of actions, portray that the source of their illegal money is legal. With its power of Machine Learning and Cognition, AI identifies these hidden actions and helps save millions for banks. Similarly, AI is able to detect suspicious data patterns among humungous volumes of data to carry out fraud management. Further, with its key recommendation engines, AI studies past to predict future behavior of data points, which helps banks to successfully up-sell and cross-sell.

Cognitive process automation: This feature enables automation of a variety of information-intensive, costly and error-prone banking services like claims management. This secures ROI, reduces costs and ensures accurate and quick processing of services at each step. Cognitive process automation fundamentally automates a set of tasks that improvises upon their previous iterations through constant machine learning.

Realistic interactive interfaces: Chatbots identify the context and emotions in the text chat and respond to it in the most appropriate way. These cognitive machines enable banks to save not only time and improve efficiency, but also help banks to save millions of dollars as a result of cumulative cost savings.

Effective decision-making: Cognitive systems that think and respond like human experts, provide optimal solutions based on available data in real-time. These systems keep a repository of expert information in its database called knowledge database. Bankers use these cognitive systems to make strategic decisions.

Robotic automation of processes: AI reviews and transforms processes by applying Robotic Process Automation (RPA). This enables automation of about 80% of repetitive work processes, allowing knowledge workers to dedicate their time in value-add operations that require high level of human intervention.

AI will not only empower banks by automating its knowledge workforce, it will also make the whole process of automation intelligent enough to do away with cyber risks and competition from FinTech players. AI, integral to the bank's processes and operations, and keeps evolving and innovating with time without considerable manual intervention. AI will enable banks to leverage human and machine capabilities optimally to drive operational and cost efficiencies, and deliver personalized services. All of these benefits are no longer a futuristic vision to accomplish for banks. By adapting AI, leaders in the banking sector have already taken actions with due diligence to reap these benefits.

AI is not the future of banking; it is the present. As more data becomes available and new technology like quantum, edge, and cloud computing continues to transform the market, banking is going through something of a revolution. All financial institutions must invest in AI solutions now. The days of waiting to see how consumers respond are behind us. People want novel experiences and excellent services from every service they use. If their banks cannot provide that, there are plenty of exciting fintech solutions that can.

Banks need to pull together people, processes, and data, having them all working collaboratively. In a new era of AI-driven enterprises, the financial industry will embrace its transformational power. Avinash Misra. (co-founder and CEO of Skan.AI, a cognitive process discovery and operational intelligence platform.)

V. Data Analysis

Total 105 responses where collected and all the responses where considered valid for the purpose of analysis. 74.3% were male respondents while 25.7% where female respondents. 43% respondents are within the age group of 20-30, 31% within 31-40, 11% between 41-50 and 14% above 51 years of age. Of the total responses collected below mentioned is the details of the nature of bank.

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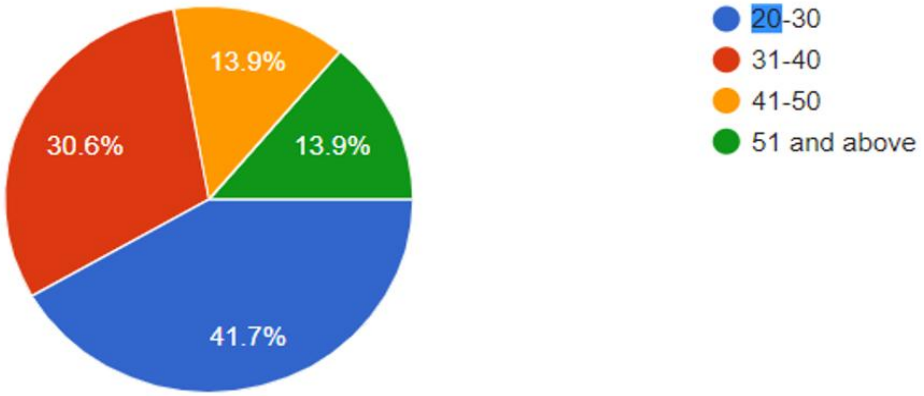
% of respondents	Nature of Bank
5.7	Scheduled Banks
25.7	State Bank of India and its Associated
22.9	Nationalized Banks
5.7	Co-operative Banks
20	Private Banks
20	Foreign Banks

AGE GROUP



It was found the amongst the sample 94% where aware about artificial intelligence.86% believed that AI can be applied to banking sector. The questions were designed to test the variables understudy using the 5 point Likert scale and the below outcomes have been obtained from the responses collected.

In the responses regarding employee perception for application of AI to banking functions, more than 78% of the respondents perceive that AI usage can improve the banking function and smoothen and fasten the banking operations.

In the responses regarding employee leadership for application of AI to banking functions, more than 63% of the respondents feel that they have good leadership in place to welcome the AI wave in the baking sector.

In the responses regarding employee attitude for application of AI to banking functions, more than 86% of the respondents were found to have a positive attitude towards acceptance of AI in banking sector.

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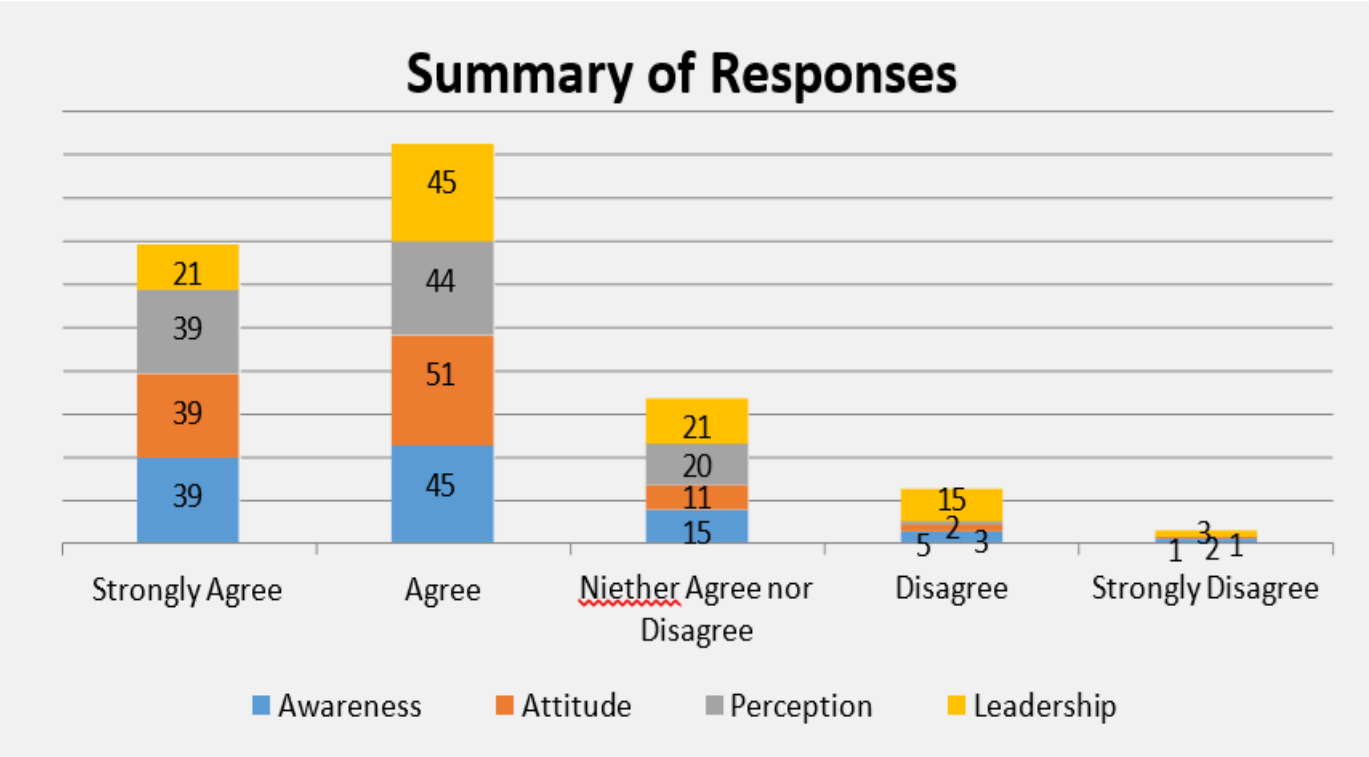
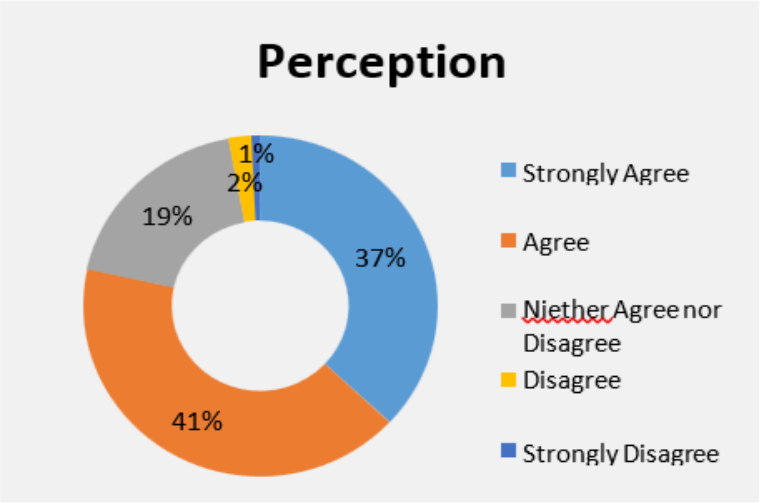
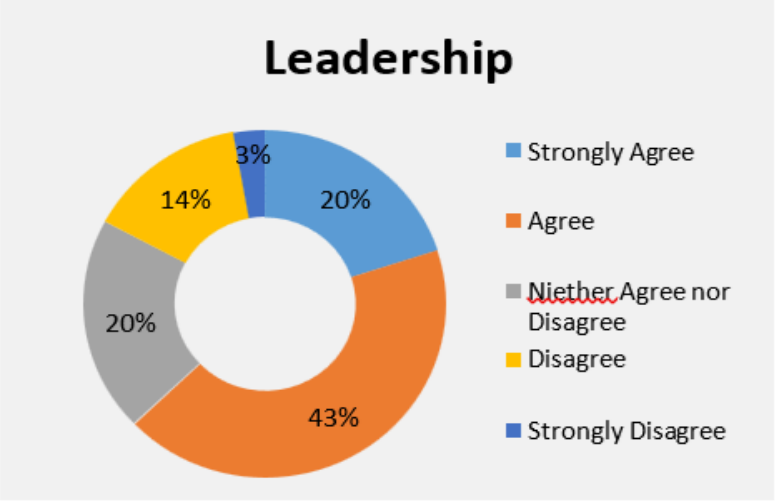



Perception
1%
2%
19%
37%
41%
Strongly Agree
Agree
Niether Agree nor Disagree
Disagree
Strongly Disagree


Leadership
3%
14%
20%
20%
43%
Strongly Agree
Agree
Niether Agree nor Disagree
Disagree
Strongly Disagree

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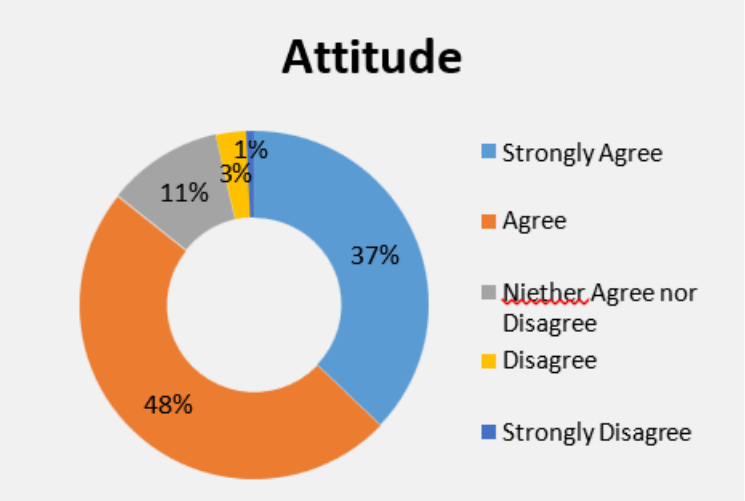

HYPOTHESIS TESTING

The below 3 hypothesis where tested in this study:

Perception

H0: Employees have a positive perception towards application of AI H1:

Employees have a negative perception towards application of AI

In other words

H0: Proportion of positive perception towards AI is 70%

H1: Proportion of positive perception towards AI less than 70%

P = Population proportion of Agree and Strongly Agree =70%

p^ = Sample proportion of Agree and Strongly Agree = 78%

Z cal = (p^-P)/sqrt((P*Q)/n	0.001662612
Z tab = Z alpha = Z 0.05	-1.644853627

As Z cal > Z tab we do not reject H0 and conclude that proportion of positive perception is 70%, which is significantly higher to conclude the perception around AI among the respondents is significant.

Leadership

H0: Leadership has a direct impact in accepting the upcoming change in form of AI

H1: Leadership has no direct impact in accepting the upcoming change in form of AI

In other words

H0: Proportion of impact of leadership in accepting change in the form of AI is 70%

H1: Proportion of impact of leadership in accepting change in the form of AI is less than 70%

H0: P=70%

H1: P<70%

P = Population proportion of Agree and Strongly Agree = 70% p^ = Sample proportion of Agree and Strongly Agree = 63%

Z cal = (p^-P)/sqrt((P*Q)/n	-0.001454786
Z tab = Z alpha = Z 0.05	-1.644853627

As Z cal > Z tab we do not reject H0 and conclude that impact of leadership in accepting change in the form of AI is 70%, which is significantly higher to conclude that impact of leadership in accepting change in the form of AI is significant.

Attitude

H0: The employees have positive attitude towards AI H1:

The employees have negative attitude towards AI. In other words

H0: Proportion of positive perception towards AI is 70%

H1: Proportion of positive perception towards AI less than 70%

H0: P=70%

H1: P<70%

P = Population proportion of Agree and Strongly Agree =70%

p^ = Sample proportion of Agree and Strongly Agree = 86%

Z cal = (p^-P)/sqrt((P*Q)/n	0.003325225
Z tab = Z alpha = Z 0.05	-1.644853627

As Z cal > Z tab we do not reject H0 and conclude that proportion of attitude perception is 70%,

which is significantly higher to conclude that attitude around AI among the respondents is significant.

ANOVA

H0: Attitude, perception and leadership are equally effective to define readiness for AI.

H1: Attitude, perception and leadership are equally effective to define readiness for AI.

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Awareness	5	105	21	389.6016
Attitude	5	105	21	513.2813
Perception	5	105	21	397.76
Leadership	5	105	21	234

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	-9.1E-13	3	-3E-13	-7.9E-16	0.000038	3.238872
Within Groups	6138.571	16	383.6607			
Total	6138.571	19				

As p-value is very low compare to 5% value of type one error allowed to the experiment, we do not reject H0 and conclude that awareness, attitude, perception and leadership are equally effective to define readiness for AI.

FINDINGS

1. The employees have a positive approach towards adopting AI.
2. The employees are aware about AI and ready to enthusiastically adopt it.
3. The employees believe that adoption of AI will smoothen and fasten majority of banking operation.
4. The employees believe that the organization has good leadership to support AI adoption.
5. The employees are enthusiastic to learn AI functions.
6. The employees believe that banking industry can take good initiatives to ensure proper training to the employees for smooth AI implementation.
7. More than 70% respondents are from the age group of 20-40, so we can also say that it is a young and technology friendly lot which can make AI implementation way easier.

VI. Conclusion

From the above we can conclude that the people factor in banking industry is very dynamic and holds positive attitude towards the AI wave. Even though AI in banking is still in infancy, it can be successfully implemented as the most crucial, people factor, seems to be ready for the change.

The banking employees are aware about AI and perceive that AI can be applied to majorly all banking functions and it would help them fasten and smoothen the banking functions.

The organizational leadership is efficient and the employees believe that leadership plays an important role in adopting and adapting to change in an organization and their organization has a good leadership to ensure smooth AI adoption.

The employees are having a positive attitude towards AI adoption and are willing to adopt AI into banking. The employee attitude is a proof that the banking industry should now aim at incorporating AI into banking system. Most employees belong to the age group under 50yrs, this can also act as a benefit because these employees have a longer tenure to stay with the organization and also are technology friendly which serves as a perk in process of adopting change.

Thus, we can conclude that all the variables i.e perception leadership and attitude are showing a positive sign towards AI adoption and people factor is ready to adopt AI into banking functions.

VII. Limitations

1. Due to the covid condition larger sample could not be studied it could act as limitation to the study.
2. Ignorance of respondent to answer the questions might act as a limitation.

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