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A STUDY OF DIGITAL BANKING WITH INTERVENTION OF ARTIFICIAL INTELLIGENCE IN 21ST CENTURY

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ABSTRACT

The beginning of digital banking took place way back in 1960 with the launching of debit cards. The world witnessed a huge transformation in banking sector with the introduction of information technology resulting in accomplishment of many high tech features of changing traditional process with the advance touch of information technology. In present scenario of 21st century banking sector from various demographic areas has come under single umbrella irrespective of difference in culture, language and standard of living.

Now the digital process in banking sector is moving ahead into an era of artificial intelligence. The upcoming future of the digital banking is laying under the concept of artificial intelligence where there wouldn't be much more involvement of intellectual man force to track and authenticate the monetary transaction. It can be the game changing factor for the world wide banking institution to enhance technologically most efficiently and effectively.

Current study was conducted with the aim of understanding the implementation of artificial intelligence and its effect on the banking employees and its customers in some cities of India. Explorative research design was used to reveal unknown and hidden facts and figures. The result of the study will state the upcoming opportunity in digital banking along with the changing scenario associated with it.

Keywords- Digital Banking, Artificial Intelligence, transformation, technology.

Introduction

Banking has changed over the decades, it was like cure for shattered banking and transforming it to digital banking. In the era of 21st century digitalization in banking sector took place at a greater extent delivering effective services along with the better customer experience. The journey of digitalization in banking started with the intention to provide ultra-fast transaction process along with easy transaction techniques. It was not always easy for the banking sector for frequent up gradation and also finding newest digital solution every time. To stand still strongly in the competitive environment over the time all the banks have become digitally sound all over the world

depending on the economic condition of their countries.

In addition to that Artificial Intelligence is going to change the overall outlook in relation to the banking sector. Artificial Intelligence is an expert system a counterfeit of human intelligence in machines that are programmed to think and imitate like humans. The more over benefits of artificial intelligence would be verification, validity, control and security. At the end it becomes more important. Artificial intelligence in other simple terms does what actually we want like it can control our car, airplane, pacemaker and most likely banks and banking transactions.

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Purpose of the Study

World scenario is changing constantly as it is with respect to banking sector. Technological advancement is constantly been seen in banking sector from introduction of automated teller machines in 1969 to core banking technique which took place in the years late 1990. Later internet banking in combination with mobile banking just changed the dimensions of the traditional banking services to the fastest mode of transactions ever witnessed. Presently the new technology popularly known as artificial intelligence is commencing to drive technology with a speed never expected. To understand, elaborate and identify the benefits of it, and how it is going to change the look out of the banking sector along with the customers.

Economically is Artificial intelligence a good option for overall growth of the banking domain and whether it is beneficial too for the country's economic development. Employment generation is always the core motive of all the governments, would Artificial Intelligence would affect the same in long run.

Objectives

1. To study, understand and analyze the impact(front, middle and back office of Artificial Intelligence with respect to banking sector
2. To identify how Artificial Intelligence would improve banking process functionality.
3. To study and understand cognitive behavior of artificial intelligence based machines
4. To study how artificial intelligence is enhancing customer service.

Research Methodology

Exploratory research was been carried out for critically understanding the existing condition and implication of new technology in context of banking in accordance to the

Artificial intelligence. Data for research has been collected from open market source. On the other hand expert interview from banking as well as banking customers was considered. Under non probability type of sampling convenience sampling technique was undertaken. Primary data was been collected with the help of questionnaire. A total 600 questionnaires were given out to the banking experts

(Authorities) and customers. Around 350 A response rate was approximately 60%.

Two categories of respondent were considered viz. 1) Banking authorities 2) Customers.

To test the response questionnaire was been developed with five pointer likert scale with a rating

Strongly agree (SA)= 5, Agree (A)=4, Neutral (A)=3, Disagree(DA)=2 and Strongly Disagree (SD)=1.

Research Area

Responses were taken from the bankers/bank authorities/banking employees from Pune and Mumbai with the help of questionnaire under convenience sampling technique.

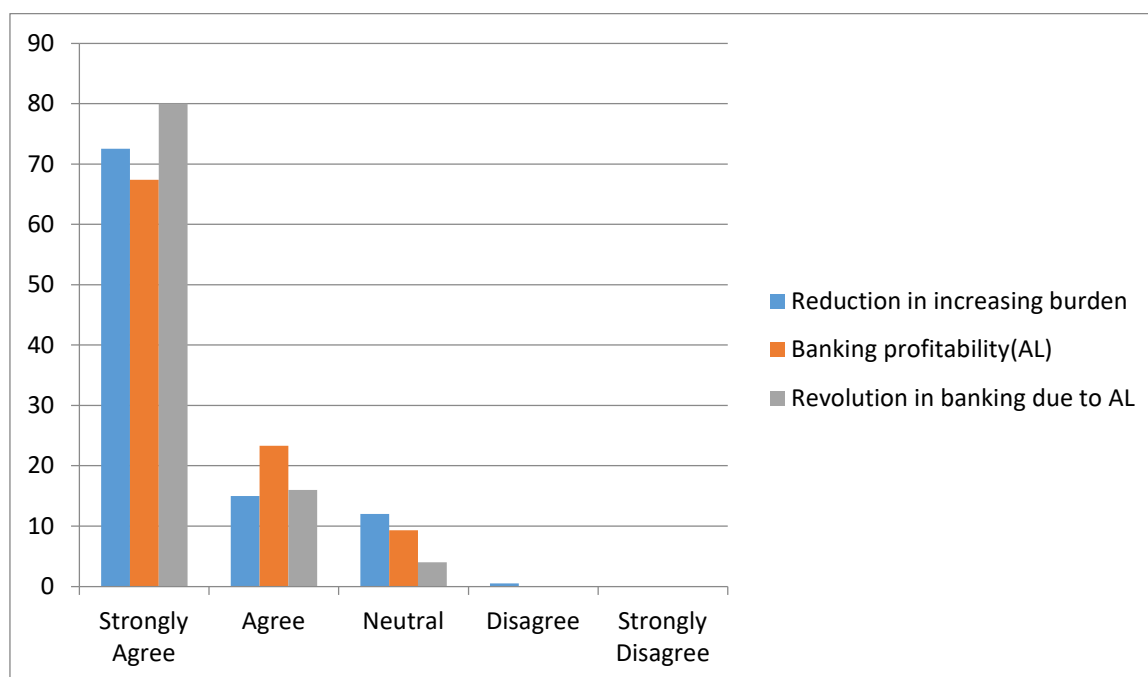
(1) Impact of Artificial Intelligence in minimizing the ever increasing burden on banking sector and resulting in economic development within banks.

Artificial intelligence is going to help banking sector to save most of the cost and it is estimated that 1 trillion dollars can be saved if it is actively implemented. The biggest advantage would be ease in operation effortlessly reducing the ever increasing burden on banking sector. The below table would give the details about the opinions provided by the employees working in the banks that how artificial intelligence had reduced the burden of huge number of transactions and other operational processes.

Table no. 1

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Does your ever increasing burden due to implementation of Artificial Intelligence has reduced	72.50%	15%	12%	0.50%	0
Artificial Intelligence technology has resulted into the profitability in banking sector	67.40%	23.30%	09.30%	0	0
Does Artificial intelligence is going to bring revolution in banking sector	80%	16%	4%	0	0

Graph no- 1



The above table and bar diagram conveys that there is a powerful and a positive impact of artificial intelligence. About 72.50% of the bank employees have strongly agreed that artificial intelligence have reduced their ever increasing burden of work. On the other hand 67.40% of the banking employees have again strongly agreed, due to operational efficiency witnessed in transactional process a huge customer base have resisted to change banking services.

80% of the surveyed employees think artificial intelligence is going to bring revolution in banking sector. Other than this the responses from the banking employees/authorities were not negative. Either due to lack of appropriate

knowledge some respondent were neutral and negligible were disagreeing with the concept.

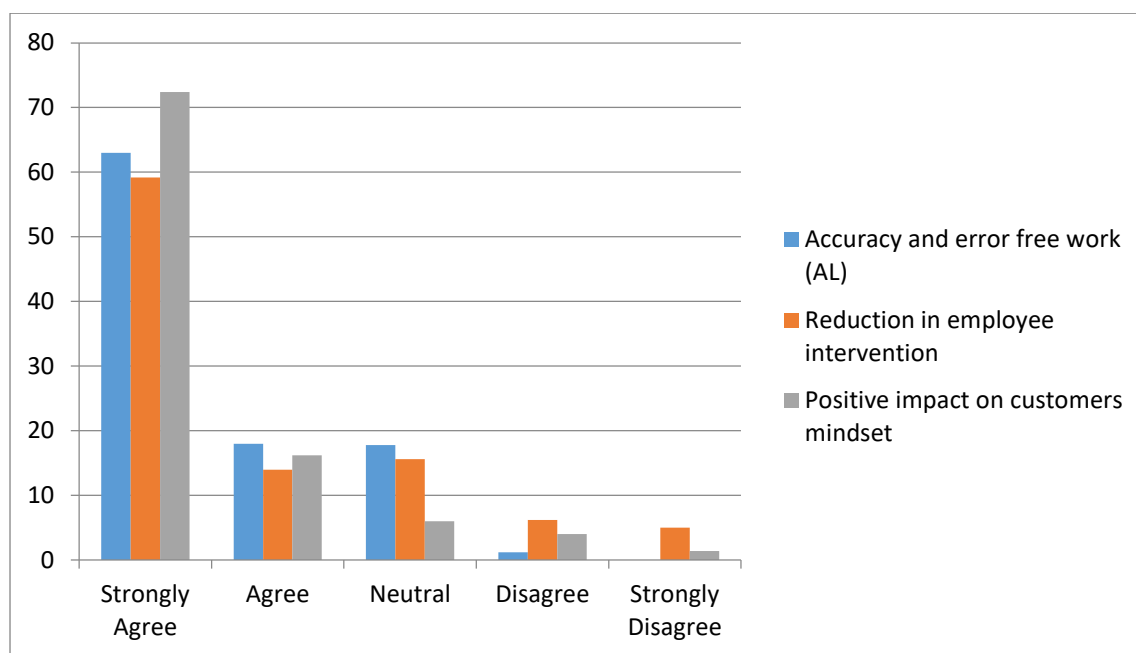
(2) Has artificial intelligence resulted in improving working process functionality.

In the era of digital banking too the intervention of human brains are required during the break down of digitally process driven activities. But due to the capability of enacting like human brain the digital banking process have become much more simplified and even if error is occurred it is been resolved by the machine itself. The below table no. 2 provides the details about the opinion provided by the bank employees regarding working process functionality with the help of artificial intelligence.

Table no. 2

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Implementation of artificial intelligence has resulted in 100 percent accuracy and error free work	63%	18%	17.80%	1.20%	0
Employees intervention has reduce during error occurrence in monetary transactions and related banking process	59.20%	14%	15.60%	6.20%	5%
Change in process does have a positive impact on customer's mindset.	72.40%	16.20%	6%	4%	1.40%

Graph no. 2



The above table no.2 and graphical representation signifies the responses of the banking employees where 63% of the banking employees strongly believes that high amount of accuracy and error free work is been carried out with the help of artificial intelligence, 18% employees are again agree on the same and 17.80% respondent are neutral and on the other hand 1.20% disagree with the same. However on the other hand 59.20% percent respondent have agreed on reduction in human intervention in banking related process, going with 14% and 15.60% on agreed and neutral basis. Remaining 11.20% employees still believes that there is a requirement of man force to handle the task whenever required.

When asked to the employees about the changing mindset of the customer, 72.40% respondent strongly agreed on positive impact on customer's mindset on implementation of artificial intelligence. 16.20% of the respondent too agree on the positive change where as 6% are neutral and 5.40% disagree with it.

(3) Understanding cognitive behavior of artificial intelligence based machines.

Mimicking the human behavior and thinking capabilities is the greatest task for the machine (computer) and is now possible because of artificial intelligence.

The below table no.3 focuses on the opinions of the bank employees along with the bank

customers in knowing artificial intelligence have accurately imitate in providing required banking services.

Table no. 3

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Automated techniques with the help of artificial intelligence in banking sector has resulted as a boon for transactional problems	63%	24.30%	8.40%	4%	0.30%
Like a human assistance provided in transactional process, machinery is also too supportive and up to the mark	50%	23%	16%	5.50%	2.50%
Your opinion regarding the quality of work done with the help of artificial intelligence is satisfactory	59%	23.40%	12.40%	3.20%	2%

Graph no. 3

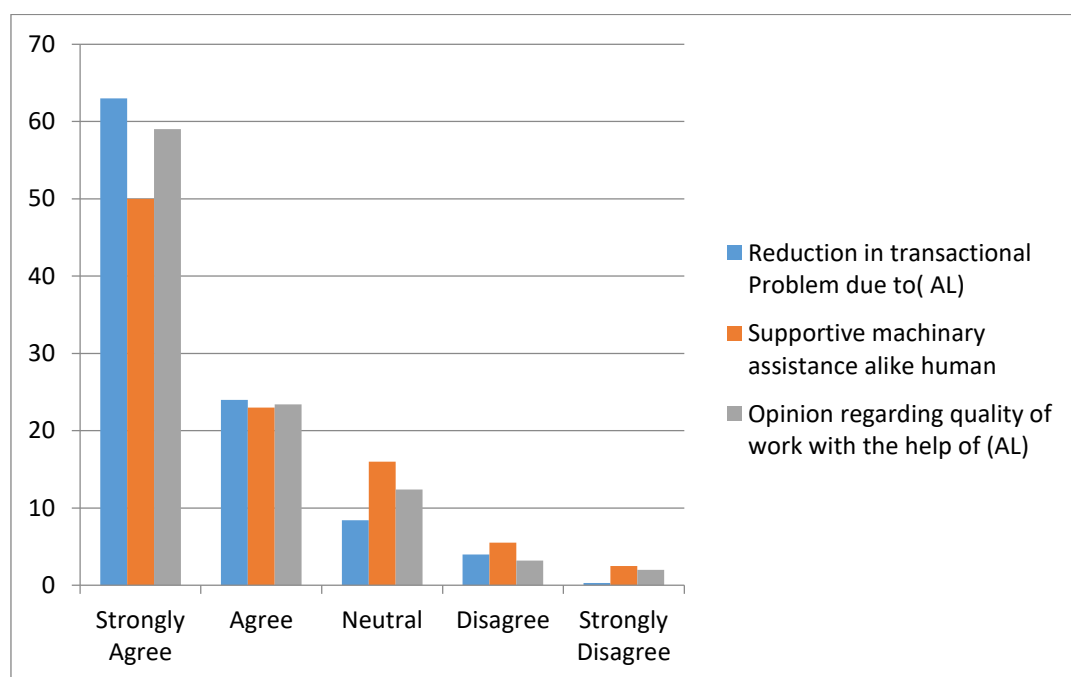


Table no. 3 and graphical representation signifies the responses of both bankers/banking authorities as well as customers of the banks where focus was given on the opinion on whether artificial intelligence technology would mimic human thinking ability and the responses were on the basis of transactional related problems 63% of the respondents strongly believe that artificial intelligence can solve the transaction related problem accurately and smoothly where as 24.30% of the respondent agrees on the same and 8.40% are neutral and

again there is a negligible respondent who don't go with the same which are 4.30%.

On the basis of machine support other than humans 73% of the respondents are on the side and support of artificial intelligence where 16 % being neutral and 8% of the respondent not in support. In addition to the above when asked about the quality and satisfactory level 82.40% of the respondent agrees on the satisfaction on the basis of the quality service provided. 12.40%

respondent being neutral and negligible respondents against it.

(4) Customer satisfaction while handling banking transitions supported by artificial intelligence

Personalize experience created with the help of machinery supported by artificial intelligence has changed the view point of the banking customers. The concepts like robo readers, mobile check deposits, personalized banking and quick resolution task without

human intervention has resulted in ever increasing satisfactory level amongst the customers using banking services. The main core aim of the banking industry is to provide better service rather satisfactory service which would intern resist their customers to shift towards other side under which ever conditions. Below table no. 4 would help in understanding the opinions by all the banking customers. This would help us to understand the satisfactory level of them at core.

Table no. 4

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Personalize banking with the help of artificial intelligence is beneficial	76.40%	12%	9.60%	2%	0
Artificial intelligence tools has empowered customer services	62.30%	12.40%	16.30%	6%	3%
Artificial intelligence has enabled smooth flow of information	68%	14%	8.40%	7.60%	2%

Graph no. 4

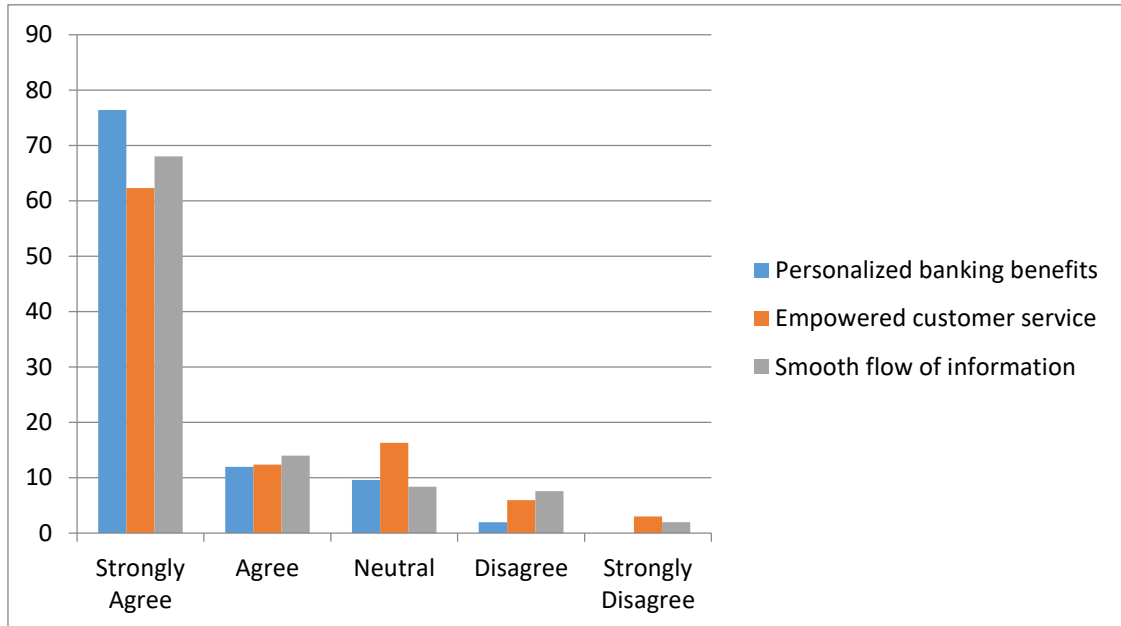


Table no.4 and the graphical representation will help us to understand what customers feels about the assistance received on behalf of the facilities provided with the help of artificial intelligence. 76.40% of the banking customers believe personalized banking have benefited them to a greatest extent. Along with

it 12% of the respondent too agree with the same being 9.60% on the neutral side. On the other hand in relation to the empowering customer services 62.30% of the respondent strongly agree with the services provided. With 12.40% agreeing and 16% being neutral. Only

9% of the respondent are disagreeing on the services provided.

Additionally, when asked to the respondent about smooth flow of information required with the help of the artificial intelligence. The responses were 68% customers highly believe information availability on demand is up to mark. Whereas 14% agrees on the same and 8.40% being neutral. On the other side 9.60% of the customers believe that information is difficult to retrieve and is not as per demand.

Findings and Conclusion

It seems that banking authorities/employees and customers have a positive impact of artificial intelligence and its overall dimensions. Which have changed the view point and the satisfactory level at a great extent. Introduction of chatbots and AI-led machines has resulted in providing next level customized and digital experience which is interactive in nature for the customers. It is resulted that both customers and bankers have found artificial intelligence as one of the best innovative technology which have reduced the heavy burden from employees side on the other hand achievement of satisfactory level from the customers side. Research conducted basically concludes that acceptance level is very high and it is going to create a boom in banking sector in coming years. In India banks in metropolitan cities have already started taking assistance of artificial intelligence in its processes from last half decades. Banks with the implementation of artificial intelligence can make it possible for financial inclusion where in developing country like India, most of the population resides in rural area where banking sector can't provide its service. There is possibility of the same with the intervention of artificial intelligence in the banking service activity. Survey says 65% of the young population do not have bank accounts which needs to be primarily focused on. Flexibility and scalability in terms of quality can be achieved when artificial intelligence would be implemented at a greater extent.

Limitations

(1) Opinions of the respondents from the rural areas were not been considered.

(2) Work scope is mostly restricted within the urban area only.

(3) Technical knowhow is spread mostly within the metropolitan cities only.

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