
ARTIFICIAL INTELLIGENCE IN SERVICE ENTERPRISES AND ECONOMICS RESEARCH: TRENDS AND FUTURE

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ABSTRACT

This research examines the perception of professionals in healthcare, banking, insurance, and education sector towards applications of artificial intelligence with special reference to Bangalore City. The study investigates the awareness level and perception of professionals towards applications of artificial intelligence in their respective sectors. The study also intends to determine the prospects of artificial intelligence. This study employs quantitative research methods, namely the questionnaire research method. AI is a technology which imitates human intelligence having both merits and demerits. The AI is in its inception stage and has now started to penetrate in every field and hence the need to be aware of its application arises.

Keywords: *Artificial Intelligence, Service Sector, Healthcare, Banking, Education, Insurance*

1. INTRODUCTION

Artificial intelligence (AI) is concerned with development of algorithms to prompt human intelligence. Its aim is to enable machine to record and analyse data to predict trends. Nowadays many companies are using artificial intelligence applications to study customers' preferences and predict trends. Companies then incorporate this data into their production schedule and increases their revenue. Most of the machine present today could process large amount of data with ease and efficiency. Machine Learning or Deep Learning, a branch of AI, whose aim is to enable robots to learn autonomously. Automated vehicles are one of the outcomes of AI. This growth is currently going on continuously and more sectors which are using these new technologies, includes health, cybersecurity, finance, industry, etc. India's service sector is playing a pivotal position in the increase of Indian economy and employment technology. Over time, provider Exports has continuously been giving exchange surplus for India. India marks its position Globally by way of the ranked 6th largest exporter (Three percentage of world Exports) and 7th biggest importer (Three point one percentage of

worldwide imports) in business alternate services¹. The service quarter in India emerges as a sizable player in phrases of its contribution to country wide and states earning, alternate flows, and FDI inflows. India has export capacity in lots of ability-primarily based and labour-based services. For India offerings, particularly essential are professional offerings, R&D services, consultancy services, printing and publishing services, telecommunication offerings, academic services, some financial and entertainment offerings. consequently, India has superb capability to be outsourcing destination for lots above offerings².

2. REVIEW LITERATURE

Sanjay Dwivedi (2022)³, the objective of this research is aimed to propose a methodological framework to guide law enforcement agencies in decision making through the developed Model using Machine Learning technique. The results of the model created in this research are well-behaved because of the rich sourced data. **Gagana Kumar B (2021)**⁴, In this research an attempt has been made to identify the factors that influenced the artificial intelligence enablement practices in the health sector area. The study has highlighted the significance of artificial intelligence enablement variables that provides a coherent framework for the digital healthcare services providers to increase the workforce productivity in nine categories. The factors like artificial intelligence enabled solutions help in improving the service levels at the hospital, artificial intelligence enabled tools can collect and analyse data from genetic sequencing to image recognition and gives physicians better insight into diagnosis and treatments, artificial intelligence enabled intelligent systems can solve complex problems in diagnosing the disease are highly correlated with each other. **Ritu Aggrawal**

¹ Bernard Marr and co (2021): Impact of artificial intelligence on society
<https://bernardmarr.com/what-is-the-impact-of-artificial-intelligence-ai-on-society/>

²Profile of artificial intelligence:

<https://www.datasciencetech.institute/jobs/artificial-intelligence-engineer-job-description/>

³Sanjay Dwivedi (2022): Study of investigative data mining techniques for combating terrorism <http://hdl.handle.net/10603/368935>

⁴ Gagan Kumar B (2021) : Diffusion of Artificial Intelligence Enablement and Its Impact on Organizational Performance A Study with Reference to Digital Healthcare Service Providers in Bengaluru <http://hdl.handle.net/10603/341625>

(2021)⁵, the objective of this study is development of effective model for prediction of student's performance using previous student's data with improved accuracy rate of existing technique using feature extraction method. This research has suggested an innovative Artificial Intelligent system and ensemble strategy that can accurately identify Student Performance Prediction. **Jaswinder Sekhon Singh (2021)**⁶, the aim of this research is to design an automatic job performance analysis system using a machine learning approach. The designed model has been well suited to examine the performance of employees in terms of precision, recall, and f-measure. Based on these factors, the satisfaction level predicted using three attributes passes as input data with multiple neurons in the hidden layer. The results show that the GA with the ANN prediction system has a better prediction effect with improved performance. **Jaspreet Kaur (2021)**⁷, Artificial intelligence in CRM is utilized for analysis of information effectively and sharing it with other users. It helps to provide the recommendation for the specific products were looking for. This model has been trained with limited products and brands and can further be extended to train more products. **Desai VP (2021)**⁸, this research work presents a practical approach for the development of a personalized e-learning system. Artificial Intelligence-based system adapts according to the learner's individual needs to improve the performance of the e-learning system. This is an adaptive e-learning system that works according to the different learning dimensions of the learner. Research work integrates data mining algorithms, Artificial Neural Network, Fuzzy logic, and Adaptive Neuro-Fuzzy System to develop an interactive, personalized e-learning system.

3. STATEMENT OF THE PROBLEM

⁵Ritu Aggrawal (2021): Data mining on educational data to predict student performance based on various parameters <http://hdl.handle.net/10603/342422>

⁶ Jaswinder Sekhon Singh (2021): Design and analysis of human resources Using artificial intelligence <http://hdl.handle.net/10603/376205>

⁷Jaspreet Kaur (2021): A Framework For CRM In Business Applications Using Artificial Intelligence: <http://hdl.handle.net/10603/376204>:

⁸Desai VP (2021): Development Of Artificial Intelligence Based E Learning System <http://hdl.handle.net/10603/355638>

Artificial intelligence has become the next milestone in the 21st century. It is the hot topic talked about in almost all the sectors all over the world. In any profession, upskilling plays a vital role in retention in the sector. AI has started to penetrate in every field. The awareness about it among general public is gradually increasing. This area of study is now in the introduction stage. Usually in every profession, it needs high level of expertise to excel in a particular field. Along with expertise, they need to be vigilant about new updates and innovations in the sector. One such innovation is artificial intelligence. Since AI is still in infant stage, every professional should start to keep a close watch on the growth of AI in their respective field.

4. OBJECTIVES OF THE STUDY

- To assess the level of awareness of artificial intelligence applications among professionals in healthcare, banking, insurance, and education sector in Bangalore district.
- To find out the perception of professionals in healthcare, banking, insurance, and education sector in Bangalore district towards applications of artificial intelligence.
- To ascertain the outcomes of implementation of artificial intelligence

5. HYPOTHESIS OF THE STUDY

H0: There is no significant difference between the experience and awareness of artificial intelligence of a professional.

H1: There is a significant difference between the experience and awareness of artificial intelligence of a professional.

H0: There is no significant difference between awareness of artificial intelligence and perception towards artificial intelligence of a professional

H2: There is a significant difference between awareness of artificial intelligence and perception towards artificial intelligence of a professional

6. RESERCH METHOLOGY

Primary Data: The quantitative method was used in order to collect the primary data by circulating a well-structured questionnaire on “An Empirical study on perception of professionals in healthcare, banking, education and insurance sectors towards applications of artificial intelligence with special reference to Bangalore city”

Secondary data: The secondary data was also referred for the purpose of research article. The secondary sources of data comprised of journals, articles, and thesis.

Sampling technique: A well-structured questionnaire was distributed among the respondents who were mainly professionals in healthcare, banking, education, and insurance sectors in Bangalore by the circulation of google form.

Sampling design: Stratified sampling technique was adopted to collect data from the professionals.

Sampling size: To research, total 120 questionnaire circulated out of which 101 responses were received. Hence the sample size is 101 is taken into consideration and 19 responses were not incomplete and not taken into consideration.

Tools for data analysis: The tool used for the analysis of the study is ANOVA and T-test.

7. LIMITATION OF THE STUDY

- The study conducted is restricted within Bangalore district limits.
- The sample does not cover most of the healthcare, banking, insurance and education professionals.
- The conclusion drawn in the study cannot be stated as universally acceptable.

8. ANALYSIS AND INTERPRETATION

Hypothesis 1

H0: There is no significant difference between the experience and awareness of artificial intelligence of a professional.

H1: There is a significant difference between the experience and awareness of artificial intelligence of a professional.

ANOVA SINGLE FACTOR (Summary)

Table 4.1.1

Groups	Count	Sum	Average	Variance
Response id	101	5151	51	858.5
Experience	101	170	1.6831	1.1386
Awareness	101	293	2.9009	2.8309

Table 4.1.2 ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	159820.6403	2	79910.3201	277.9590	0.0000	3.0258
Within Groups	86246.8712	300	287.4895			
Total	246067.5116	302				

INTERPRETATION

The tool used for hypothesis 1 is Anova of single factor because, of the two variables one is categorical and the other is numerical. From the above table 4.1, it is evident that the calculated Anova p- value 0.00 is lesser than the significance value of 0.05, this indicates that there is strong evidence to accept the alternate hypothesis. It is inferred that there is a significant difference between the experience and awareness of artificial intelligence of a professional. Hence, it can be concluded that the awareness of artificial intelligence is not dependent on the no of years of experience.

Table 4.2 t-Test: Two-Sample Assuming Unequal Variances

	Experience	Awareness
Mean	1.683168317	2.9009901
Variance	1.138613861	2.83009901
Observations	101	101
Hypothesized Mean Difference	0	
df	169	
t Stat	-6.143552653	
P(T<=t) one-tail	2.80146E-09	
T Critical one-tail	1.653919942	
P(T<=t) two-tail	5.60291E-09	
T Critical two-tail	1.974100447	

Source: Computed from Primary Data

INTERPRETATION

The tool used for hypothesis 1 is Two sample t-test assuming unequal variance. From the above table 4.2, it is evident that the calculated p- value 0.00 is lesser than the significance value of 0.05, this indicates that there is strong evidence to accept the alternate hypothesis. It is inferred that there is a significant difference between the experience and awareness of artificial intelligence of a professional. Hence, it can be concluded that the awareness of artificial intelligence is not dependent on the no of years of experience.

HYPOTHESIS 2

H0: There is no significant difference between awareness of artificial intelligence and perception towards artificial intelligence of a professional.

H2: There is a significant difference between awareness of artificial intelligence and perception towards artificial intelligence of a professional.

Table 4.3.1 Anova Single Factor (Summary)

Groups	Count	Sum	Average	Variance
Response id	101	5151	51	858.5
Awareness	101	293	2.9009	2.8301
Impact	101	137	1.3564	1.1716

Table 4.3.2. ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	160939.5908	2	80469.7953	279.8944	0.00	3.0258
Within Groups	86250.1782	300	287.5005			
Total	247189.769	302				

Source: Computed from Primary Data

INTERPRETATION

The tool used for hypothesis 2 is Anova of single factor because, of the two variables one is categorical and the other is numerical. From the above table 4.3, it is evident that the calculated Anova p- value 0.00 is lesser than the significance value of 0.05. this indicates that there is strong evidence to accept the alternate hypothesis. It is inferred that there is a significant difference between the awareness of artificial intelligence and perception towards artificial intelligence. Hence, it can be concluded that the awareness of artificial intelligence does not affect perception towards artificial intelligence.

Table 4.4 t-Test: Two-Sample Assuming Unequal Variances

	Experience	Awareness
Mean	2.9009901	1.356435644
Variance	2.83009901	1.171683168
Observations	101	101
Hypothesized Mean Difference	0	
df	171	
t Stat	7.75956166	
P(T<=t) one-tail	0.00	
T Critical one-tail	1.65381332	

P(T<=t) two-tail	0.00	
T Critical two-tail	1.97393395	

Source: Computed from Primary Data

INTERPRETATION

The tool used for hypothesis 2 is Two sample t-test assuming unequal variance. From the above table 4.4, it is evident that the calculated p- value 0.00 is lesser than the significance value of 0.05. this indicates that there is strong evidence to accept the alternate hypothesis. It is inferred that there is a significant difference between the awareness of artificial intelligence and perception towards artificial intelligence. Hence, it can be concluded that the awareness of artificial intelligence does not affect perception towards artificial intelligence.

9. FINDINGS, SUGGESTIONS, AND CONCLUSION.

Many of the respondents were graduates also from education sector. Most of the respondents have an experience of 5 to 10 years. Most of the respondents were aware of the applications of artificial intelligence. Many of the respondents were moderately aware of the applications of artificial intelligence in their respective sectors. Most of the organisations has been using AI in the range of 25-50%, i.e., AI is in its incentive stage. Half of the respondents felt that their organisations has used AI effectively and half of the respondents felt that their organisation has not used AI effectively. Most of the organisations of the respondents said that their organisation has a dedicated AI specialist or AI department. Most of the respondents remained neutral regarding effect on productivity due to implementation of AI. Majority of the respondents had a positive impact of AI on their work. Half of the respondents felt that benefit of AI has exceeded its cost and half of the respondents felt that benefits of AI has not exceeded its cost. Majority of the respondents felt that AI impact on workload cannot be determined. that half of the respondents felt that quality of work will decrease with implementation of AI and half of the respondents felt that quality of work will not decrease with implementation of AI. Most of the respondents disagreed that an entire organisation can be run only with the help of AI. Based on the above findings, the following suggestions are given. Although majority of the respondents are aware of applications of AI, the application of AI in their respective organisations is comparatively low. Hence, the organisations are suggested to try to implement more AI to increase productivity and reduce

costs. The organisations should also create awareness about the applications of artificial intelligence to their employees. Organisations should get frequent feedback from its employees to overcome flaws in its AI system.

CONCLUSION

“As more and more artificial intelligence is entering into the world, more and more emotional intelligence must enter into leadership.”

-Amit Ray, Famous AI Scientist

Artificial intelligence will dramatically improve the efficiencies of our workplaces and would possibly augment the work humans will do. Once AI takes over repetitive or dangerous tasks, it frees up the human work force to do and work they are higher equipped for tasks that involve creative thinking and sympathy among others. If individuals work that is a lot of participating for them, it may increase happiness and job satisfaction. With higher watching and diagnostic capabilities, computing will dramatically influence tending. By rising the operations of tending facilities and medical organizations, AI will scale back operative prices and save cash. One estimate from McKinsey predicts huge knowledge may save drugs and pharmaceutical company up to \$100B annually. Potential for personalized treatment plans and drug protocols likewise as giving suppliers higher access to data across medical facilities to help inform patient to be life changing. Our society can gain uncounted hours of productivity with simply the introduction of autonomous transportation and AI influencing our holdup problems to not mention the other ways in which it will improve on-the-job productivity. Freed up from disagreeable commutes, humans AR reaching to be able to pay their time throughout a kind of alternative ways in which. The means we tend to uncover criminal activity and solve crimes AR increased with AI. Biometric authentication technology is turning into whilst common as fingerprints. The employment of AI inside the justice system additionally presents several opportunities to figure out, thanks to effective use of technology while not crossing Associate in Nursing individual’s privacy. By way of 2030, the average simulation suggests that 70 percent of businesses might have followed at least one type of AI generation but that less than half can have completely absorbed the five categories. The sample of adoption and full absorption is probably surprisingly speedy—on the high cease of what has been observed with other technologies. It's possible that AI technologies ought to result in a overall performance gap between the front-runners (organizations that fully absorb AI gear throughout their businesses over the next five to seven years) and non-adopters (companies that don't undertake AI technology at all or have not fully absorbed them of their companies by means of 2030). At the end of the spectrum, front-runners are likely to advantage

disproportionately. By 2030, they may potentially double their cash flow (financial gain captured minus associated investment and transition prices). This means extra annual net cash-flow increase of about 6 percentage for longer than the subsequent decade. Front-runners generally tend to have a robust starting IT base, a higher propensity to invest in AI, and fantastic perspectives of the enterprise case for AI. At the alternative cease of the spectrum, non-adopters may be in around a 20 percent decline in their cash flows from today's stages, assuming the equal cost and revenue model as today. One essential driving force of this income pressure is the existence of robust competitive dynamics among agencies that might shift marketplace percentage from laggards to the front-runners and may prompt debate approximately the unequal distribution of the advantages of AI. Using historic developments of new jobs created to antique jobs, and adjusting for a lower hard work-output ratio that considers the probably labour-saving nature of AI technologies through clever automation, new jobs driven with the aid of investment in AI should increase employment via about five percent by 2030. the entire productivity impact ought to have a fine contribution to employment of approximately 10 percentage⁹.

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