



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Artificial Intelligence And Employee Perception: An Emperical Study On Selected Bank Employees Of Vadodara City

Ms Pushpanjali Datar

Research Scholar

Faculty of Commerce

The Maharaja Sayajirao University of Baroda

Assistant Professor

Parul University, Vadodara , Gujarat .India

Dr Shamal Pradhan

Professor

Department of Commerce & Business Management

Faculty Of Commerce

The Maharaja Sayajirao University of Baroda

Vadodara , Gujarat .India

Abstract: This study examines the views of private bank employees in Vadodara, India, concerning the implementation of Artificial Intelligence (AI) in the banking industry. Data were obtained from 105 respondents using a standardised, closed-ended questionnaire disseminated through Google Forms. The investigation concentrated on characteristics such as experience, attitude, skill, and adaptability, utilising statistical methods including Z-tests and ANOVA.

Results demonstrate a largely favourable disposition towards AI, with 78% of employees indicating agreement or strong agreement about its advantageous effects. Although 63% assert they have the requisite abilities to adapt to AI technology, a substantial majority exhibit a willingness to enhance their competencies, recognising the organization's supportive framework for such advancement. The adaptability variable indicated a positive inclination towards AI integration. The ANOVA results indicate that experience, attitude, skill, and flexibility equally influence employee opinions of AI adoption.

The study shows that staff are predominantly amenable to AI implementation, acknowledging its capacity to improve efficiency and optimise banking processes. It emphasises the necessity of ongoing training and ethical considerations to mitigate issues around job security and data privacy. These insights are essential for banking institutions seeking to use AI technology effectively while maintaining staff engagement and well-being.

Index Terms – Human Resource Management, Artificial Intelligence, Perception

Introduction

As technology continues to grow at an unprecedented rate, artificial intelligence, or AI, has gained a lot of attention in recent years. Artificial Intelligence (AI) is the study of creating computer systems that are capable of learning, solving problems, and making decisions—tasks that normally require human intelligence.

AI's capacity to swiftly and effectively evaluate enormous volumes of data, producing predictions and insights that are more accurate, is one of its main advantages. This has streamlined procedures and enhanced results, revolutionizing sectors like healthcare, banking, and transportation.

But there are also worries about AI, especially with regard to ethical issues and employment displacement. There is concern that a large number of professions may become obsolete as machines grow more adept at carrying out tasks that have historically been completed by humans.

Banking is also a sector in India that is gradually adopting AI into its operations. And as we know change is never easy. But managing change is the only way to adapt and flourish in all the endeavours.

By offering creative ways to improve decision-making, expedite operations, and improve customer experience, artificial intelligence is transforming the banking sector. Artificial intelligence (AI)-driven chatbots have emerged as a useful instrument for bank customer care due to the growing need for customized solutions and instant communication. These virtual assistants can help with transactions as well as routine questions and account information.

Additionally, AI algorithms are being utilized to stop cyberattacks and identify fraudulent activity, guaranteeing the protection of important client data. Artificial intelligence (AI) technologies can spot trends and abnormalities that human analysts would miss by instantly analyzing enormous volumes of data.

But as we all know, change also brings challenges. For effective implementation of any process/ technology/ policy, the readiness of the human resource is very crucial. Through all the stages of technology adoption human resource plays a very crucial role. Therefore it becomes very important to understand the perception of employees before introducing any change and once this is known we can take further steps pertaining to making them change ready and then implementing the change.

This paper studies the perception that the employees hold towards the application of AI processes in banking industry.

The study is carried over the selected private bank employees of Vadodara City.

Objectives of the Study

1. To understand how AI is perceived by the employees.
2. To understand upskilling requirements of the employees.
3. To understand availability of upskilling infrastructure with the organization.
4. To understand whether the employees have an adaptive approach towards application of AI.
5. To understand which processes can be automated using AI according to the employees.

METHODOLOGY

This study consists of primary and secondary data. Convenience sampling method is used to draw the suitable sample from amongst the private bank employees of Vadodara City. Primary data has been collected through the help of structured non disguised close ended questionnaire using google form from 315 respondents. 5 point Likert scale is used for collecting the responses. The collected data is tabulated, analyzed and findings are drawn.

VARIABLE UNDER STUDY

1. Experience
2. Attitude
3. Skill
4. Adaptability

HYPOTHESIS

H01: Employees have a positive attitude to application of Artificial Intelligence.

H02: Employees have the skill to adapt to the AI technologies

H03: Employees are adaptive to application of Artificial Intelligence.

LITERATURE REVIEW

Balakrishna DR, Senior Vice President and Head of Service Offering for Infosys' Energy, Communications, and AI & Automation Services. The financial services industry has globally demonstrated a strong interest in adopting Artificial Intelligence (AI) due to the abundance of data and a willingness to invest. The innovative utilization of artificial intelligence by start-ups and fintech companies has contributed significantly to the advancement of this pattern. AI has facilitated banks in achieving enhanced control and predictability across various areas such as customization, customer service, fraud detection and prevention, compliance, risk management, and intelligent contract agreements. In today's business landscape, clients have high expectations for prompt, customized, and significant services and interactions with their banks. They have limited patience for generic and uninvited messaging. Hence, banks should utilise artificial intelligence (AI) to achieve a harmonious equilibrium between the requirements of privacy and security, while also enhancing personalization and engagement. However, the Indian banking system still needs to make progress in several areas.

Indian banks have predominantly utilized artificial intelligence (AI) to enhance customer experience by using chatbots as supplementary interfaces for clients. Examples include SIA by State Bank of India, Eva by HDFC, and iPal by ICICI. State-owned banks have been hesitant to utilize AI due to the need for them to operate beyond the confines of the conventional privacy framework. India currently lacks a strong and comprehensive data protection and privacy policy. The Reserve Bank of India (RBI) should assume a proactive and influential position in formulating rules pertaining to developing technologies, data protection, and safeguarding the economic interests of banks.

Banks must concurrently embrace new business models to incorporate AI into their strategic objectives and leverage AI for analytics and enhancing customer experience. Nevertheless, the dependence on outdated technologies, scarcity of skilled data scientists, and financial limitations have hindered the smooth integration of AI. They should prioritize three crucial elements: AI is crucial in detecting fraud, especially in light of the increased risk of cyberattacks. According to the 2019 RBI annual report, losses resulting from banking frauds have increased by a significant 73.8%, despite the Government's attempts to control them. According to data from the RBI, it is concerning that banks took an average of 22 months to uncover instances of fraud after they occurred. Given the RBI's policy of providing full protection against cyber fraud, it is crucial for banks to implement appropriate procedures and technological measures to reduce these risks. The implementation of real-time payments has led to significant advancements in the realm of digital fraud. In this situation, banks need to implement AI solutions that are responsive to the context in order to facilitate enhanced and adaptable real-time monitoring of their payment networks. These AI systems use relevant data points to evaluate the risk of transactions, accurately match identities, and identify complex typologies and patterns.

Process digitization: The extensive growth of mobile devices and the internet may be utilised to enhance the user experience and offer advanced functions based on analytics. This allows consumers to get insights into their spending habits and receive suggestions for investment and risk profiles. Traditional banks have not yet implemented the practice of digitising the KYC procedure, which would eliminate the requirement of physically submitting and verifying documents. One way to simplify this process is by using AI-powered computer vision technology to authenticate documents, Optical/Intelligent Character Recognition (OCR/ICR) technologies to convert scanned documents into digital format, and Natural Language Processing (NLP) to understand the content of the documents.

Decision making: AI is well-suited for domains that rely on both organised and unorganised data to make judgements. For instance, it can assist in forecasting possible borrowers who may fail on their loans and provide effective measures to minimise losses for these individuals. It can assist in determining the optimal moment to approach a consumer for the purpose of selling a new product. AI-powered intelligent environments may gather data from various sources and generate insights to empower SMEs in making informed decisions. AI can enhance straight-through processing by employing Intelligent Automation to automate repetitive tasks that need decision-making.

Considering the significant scale of the challenge, it would be logical for banks to collaborate and form a consortium to facilitate the exchange of knowledge regarding artificial intelligence (AI). This will also benefit India's multitude of regional and cooperative banks that are lagging behind in terms of technological advancements. An alliance could facilitate the elevation of these tiny banks and facilitate their smooth integration into a wider, countrywide, and secure banking network. Regardless of the manner in which it occurs, the expansion of artificial intelligence (AI) in the Indian banking sector is inevitable. Anjum Khurshid holds the position of Associate Vice President in the Corporate Business Services Transition department of Wipro's Business Process Services. Utilising cognitive technology alongside Artificial Intelligence (AI) provides banks with the benefit of digitization, enabling them to effectively address the

competition presented by FinTech businesses. According to a collaborative study done by the National Business Research Institute and Narrative Science², around 32% of financial service providers are currently utilising AI technologies such as Predictive Analytics and Voice Recognition.

The future of banking lies in the utilisation of Artificial Intelligence, which harnesses the capabilities of advanced data analytics to effectively address fraudulent transactions and enhance compliance. An AI programme can perform anti-money laundering actions in a matter of seconds, a task that would often require hours or even days. Artificial intelligence (AI) also empowers banks to efficiently handle large amounts of data at an unprecedented pace in order to extract valuable insights. Advanced features like AI bots, digital payment counsellors, and biometric fraud detection techniques enhance the quality of services provided to a larger consumer base. This results in higher income, less expenses, and a surge in profits. Artificial intelligence is enhancing the competitive advantage of banks by:

Improved client satisfaction: Through previous engagements, AI acquires an enhanced comprehension of clients and their patterns of conduct. Banks may enhance financial goods and services by including personalised features and intuitive interactions, thereby fostering meaningful consumer engagement and cultivating strong customer relationships.

AI aids banks in forecasting future outcomes and trends by analysing historical behaviours. This enables banks to identify instances of fraud, uncover patterns related to anti-money laundering, and provide customer suggestions. Money launderers employ a sequence of procedures to create the appearance that the origin of their illicit funds is legitimate. Utilising its capabilities in Machine Learning and Cognition, AI detects these covert operations and aids in saving millions for banks. Similarly, artificial intelligence has the capability to identify suspicious data patterns among vast amounts of data in order to do fraud management. In addition, AI utilizes its primary recommendation engines to analyse historical data and forecast future behaviour of data points. This enables banks to effectively increase sales by promoting more products and services.

Automating cognitive processes: This feature allows for the automation of many banking activities that include a large amount of information, are expensive, and prone to errors, such as claims management. This enhances return on investment (ROI), minimises expenses, and guarantees precise and prompt processing of services at every stage. Cognitive process automation involves the automation of a series of processes, which are continuously improved through ongoing machine learning.

Authentic interactive interfaces: Chatbots analyze the context and emotions expressed in the text conversation and provide a response that is best suitable for the given situation. These cognitive machines allow banks to save time, enhance efficiency, and save millions of dollars through cumulative cost reductions.

Efficient and judicious process of making decisions: Cognitive systems emulate human expertise by thinking and responding in a manner similar to human experts. They provide optimal solutions by analyzing real-time input. These systems store a collection of specialized information in a database known as a knowledge database. Bankers utilize these cognitive mechanisms to formulate strategic decisions.

Robotic automation of processes is the application of Robotic Process Automation (RPA) using AI to review and transform processes. This facilitates the automation of around 80% of repetitive labour procedures,

enabling knowledge workers to allocate their time to value-added operations that necessitate a significant degree of human engagement.

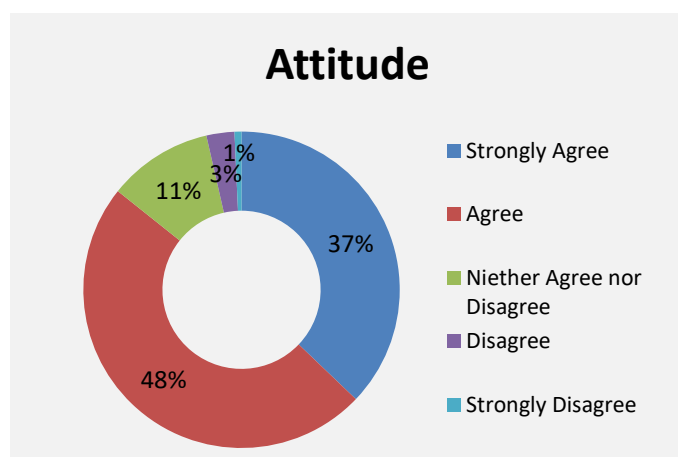
Artificial intelligence (AI) will enhance banks by automating their knowledge workers and making the automation process clever enough to eliminate cyber dangers and competition from FinTech businesses. Artificial Intelligence (AI) is an essential component of the bank's procedures and activities, continuously advancing and introducing new ideas throughout time with minimal human involvement. Artificial intelligence (AI) will allow banks to effectively utilize both human and machine skills in order to enhance operational efficiency, save costs, and provide personalized services. These benefits are now achievable for banks, no longer just a futuristic concept. Leaders in the banking business have already implemented AI technology with careful consideration to gain these advantages. Artificial Intelligence (AI) is not just a future prospect for the banking industry; it is already a prominent and active component of the industry. With the increasing availability of data and the emergence of advanced technologies such as quantum, edge, and cloud computing, the banking industry is undergoing a significant upheaval. It is imperative for all financial organizations to allocate resources towards implementing AI solutions at present. We no longer have to wait to observe consumer responses. Individuals desire unique experiences and exceptional offerings from every service they utilize. If traditional banks are unable to offer such services, there are other innovative fintech solutions available.

Banks must integrate individuals, procedures, and information, ensuring their collective collaboration. The financial industry will fully embrace the transformative power of AI in this new era of AI-driven firms. Avinash Misra is the co-founder and CEO of Skan.AI, a platform that specializes in cognitive process discovery and operational intelligence.

Looking towards the existing literature, a research gap has been identified that no study is talking about the perception of employees towards adoption of artificial intelligence.

DATA ANALYSIS:

Variable: Attitude



Strongly Agree	37%
Agree	48%
Niether Agree nor Disagree	11%
Disagree	3
Strongly Disagree	1
Total	100
H0: Employees have a positive attitude to application of Artificial Intelligence.	H0: P=70%
H1: Employees do not have positive attitude towards application of Artificial Intelligence.	H1: P<70%

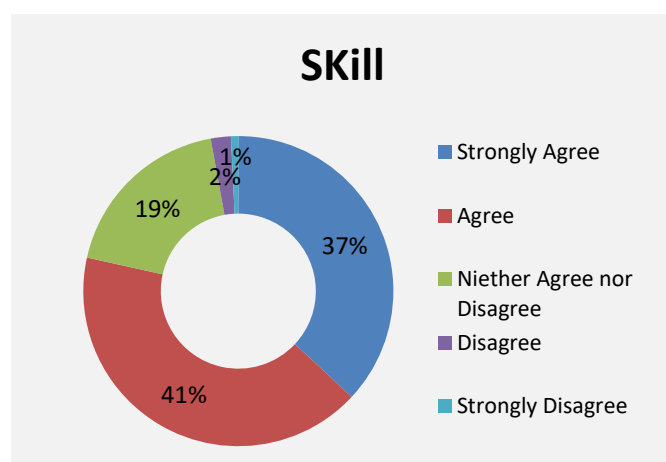
P = Population proportion of Agree and Strongly Agree = 70%

$p^{\wedge}$ = Sample proportion of Agree and Strongly Agree = 78%

$Z_{cal} = (p^{\wedge} - P) / \sqrt{(P * Q) / n}$	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 attitude in perception of AI application perception is 70%, which is significantly higher to conclude that positive attitude around AI among the respondents is significant.

Variable: Skill



Strongly Agree	37%
Agree	41%
Neither Agree nor Disagree	19%
Disagree	2%
Strongly Disagree	1%
Total	100

Employees have the skill to adapt the AI technologies has direct impact on employee perception for AI	H0: P=70%
Employees have the skill to adapt the AI technologies has direct impact on employee perception for AI	H1: P<70%

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

$p^{\wedge}$ = Sample proportion of Agree and Strongly Agree = 63%

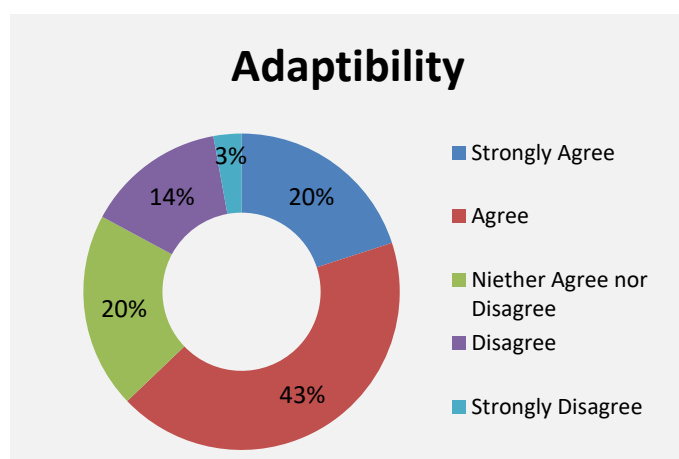
As $Z_{cal} > Z_{tab}$ we do not reject H0 and conclude Employees have the skill to adapt the AI technologies

is 70%, which is significantly higher to

conclude that impact of skill in accepting change in the form of AI is significant.

$Z_{cal} = (p^{\wedge} - P) / \sqrt{(P * Q) / n}$	0.001662612
$Z_{tab} = Z_{\alpha} = Z_{0.05}$	-1.644853627

Variable: Adaptability



Strongly Agree	20%
Agree	43%
Neither Agree nor Disagree	20%
Disagree	14%
Strongly Disagree	3%
Total	100
H0: Employees are adaptive to application of Artificial Intelligence.	H0: P=70%
H1: Employees are not adaptive to application of Artificial Intelligence.	ag. H1: P<70%

$Z_{cal} = (p^{\wedge} - P) / \sqrt{(P * Q) / n}$	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 employees are adaptive to application of artificial intelligence.

ANOVA

H0: Experience, attitude, skill, adaptability are equally effective in determining employee perception for application of AI.

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Experience	5	105	21	389.6016
Attitude	5	105	21	513.2813
Skill	5	105	21	397.76
Adaptability	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 Experience, attitude, skill, adaptability are equally effective in determining employee perception for application of AI.

FINDINGS

1. Employees perceive artificial intelligence will have a positive impact on work.
2. Employees are aware of artificial intelligence and its utility.
3. Employees are showcasing readiness to adapt to artificial intelligence in banking processes.
4. Employees are technology savvy and perceive application of AI shall have positive impact on banking operations.
5. Employee attitude towards AI adoption is positive.
6. It appears that there would be little or no resistance in adoption of AI to banking processes.
7. Employees believe that their organization has adequate upskilling infrastructure to adapt AI.
8. They believe AI will smoothen the work process.
9. They believe AI will increase work efficiency & speed.

CONCLUSION

From the above study we can conclude that over all employees perceive adoption of AI to be positive for them.

They believe it will increase efficiency and reduce process time, leading to faster operations. Employees also seem ready to upskill themselves for the adoption of the AI wave and are quite excited to learn new technology.

REFERENCE

- A. Fink, Conducting research literature reviews. From the internet to paper. 3rd ed., London: Sage, 2010. .
- Anupam Jauhari, How AI and Machine learning will impact HR practices, December 18th, 2017, SSRN Electronic Journal
- Acikgoz, Y. (2019). "Employee recruitment and job search: Towards a multi-level integration". Human resource management review, 29, 1-13
- Andersson, N. (2003). Applicant and recruiter reactions to new technology in selection: A critical review and agenda for future research. International Journal of Selection and Assessment, 11(2- 3), 121–136.
- Artificial Intelligence, A Modern Approach, Stuart Russel & Peter Norvig, Third Edition, 2010, Chapter 1, Page 16-28.
- Artificial Intelligence, A Modern Approach, Stuart Russel & Peter Norvig, Second Edition, 2003, Chapter 1.
- Khurshid, A. (2018). Why banks need Artificial Intelligence - Wipro. Retrieved from <https://www.wipro.com/content/dam/nexus/en/service-lines/business-process/latest-thinking/why-banks-need-artificial-intelligence.pdf>
- B. Wirtz, J. Weyerer, and C. Geyer, "Artificial intelligence and the public sector – Applications and challenges," International Journal of Public Administration, pp. 1-20, 2018.
- Barbara Van pay (2018) How AI is reinventing HR, International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 06 Issue: 08 | Aug 2019 www.irjet.net p-ISSN: 2395-0072
© 2019, IRJET | Impact Factor value: 7.34 | ISO 9001:2008 Certified Journal | Page 1238
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3, 77–101.
- Breaugh, A.J. (2008). Employee recruitment: Current knowledge and important areas for future research. Human Resource Management Review, 18, 103-118
- Bringsjord, S. & Schimanski, B. (2003). What is Artificial Intelligence? Psychometric AI as an answer. IJCAI'03 Proceedings of the 18th international joint conference on Artificial intelligence, 887-893
- Chiradeep Basu, Mallick, 3 Ways AI is Impacting Company Culture and Ideas for AI-based Hiring Contributor, HR Technologist 2011
- Chapman, D. S., & Webster, J. (2003). The use of technologies in the recruiting, screening, and selection processes for job candidates. International journal of selection and assessment, 11(2-3), 113–120.
- D. Buchanan, A. Bryman, "The Sage Handbook of Organizational Research Methods," Sage publications, 2009.
- A. Fink, Conducting research literature reviews. From the internet to paper. 3rd ed., London: Sage, 2010.
- D. L., Deadrick, D. L., Lukaszewski, K. M., & Johnson, R. (2015). The influence of technology on the future of human resource management. Human Resource Management Review, 25, 216–231.
- Edge Admin (2017) Artificial Intelligence in HR, Published in Analytic India Magazine, July 17th, 2017.
- Eva Wislow (2017) Top ways to use artificial intelligence in HR, October 24th, 2017.

Faliagka, E., Ramantas, K., Tsakalidis, A., & Tzimas, G. (2012). Application of machine learning algorithms to an online recruitment system. In Proc. International Conference on Internet and Web Applications and Services.

Faiyaz Md.iqbal (2018) Can AI change the way in companies Recruitment, Development, Training and Managing in HR, Published in ISSN(E),2018.

Introduction to Artificial Intelligence, Wolfgang Ertel,2017,Springer Second Edition,2017, Chapter 1, pg 1)

Galanaki, E., Lazazzara, A., & Parry, E. (2019). A cross-national analysis of e-HRM configurations: integrating the information technology and HRM perspectives. *Organizing for digital innovation*. 27, 261-276
J. Sutherland, "Directive decision devices: Reversing the locus of authority in human-computer associations," *Technological Forecasting and Social Change*, vol. 75, n. 7, pp. 1068-1089, 2008.

Jeremy nunn (2019) Emerging impact of AI on HR, Forbes Technology Council, February 6th,2019.

Jac-Fitz-Enz& John R. Mattox II, Predictive Analysis for Human Resources, Wiley Publication 2014..

J. Stajic, R. Stone, G. Chin, and B. Wible, "Rise of the machines," *Science*, vol. 349, n. 6245, pp. 248-249, 2015
J. Reis, P. Santo, and N. Melão, "Artificial intelligence in government services: A systematic literature review," *World Conference on Information Systems and Technologies*, Vol. 932, 2019. DOI: 10.1007/978-3-030-16187-3

J. Bughin, E. Hazan, S. Ramaswamy, M. Chui, T. Allas, P. Dahlstrom, N. Henke, and M. Trench, "Artificial intelligence – the next digital frontier," McKinsey Glob Institute, 2017.

Kaplan, J. (2016). *Artificial Intelligence: What everyone needs to know*. Oxford: Oxford university

K. Heinonen, J. Kietzmann, and L. Pitt, "AI and Machine Learning in Service Management," Special issue call for papers from *Journal of Service Management*, Accessed in January 16th, 2019

Legg, S. & Hutter, M. (2007). *A Collection of Definitions of Intelligence*. *Advances in Artificial General Intelligence: Concepts, Architecture and Algorithms*, IOS press, Issue 157, 17-24 57

Lorenzo Milani, Dariorahmati, Risky neer ak barianti (2017) Exploring the impact of AI on HRM, London school of economics, january 25th, 2017.

Marler, J. H., & Fisher, S. L. (2013). An evidence-based review of e-HRM and strategic human resource management. *Human Resource Management Review*, 23(1), 18–36.

Martincevic, I., & Kozina, G. (2018). *The Impact Of New Technology Adaptation In Business*. Varazdin: Varazdin Development and Entrepreneurship Agency (VADEA).

Megan Marie Butler (2018) Navigating the hype and impact of AI in Hr, December 10th, 2018.

M. Jarrahi, "Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making", *Business Horizons*, 2018

R. Boselli, M, Cesarini, and M. Mezzanzanica, "Framework guidelines to measure the impact of business intelligence and decision support methodologies in the public sector," in *Proceedings of the European Conference on e-Government*, pp. 107-115, 2011.

S. Makridakis, "The forthcoming artificial intelligence revolution: Its impact on society and firms," Futures, vol. 90, pp. 46-60, 2017.

S.N Deepak Kumar, Ajit Joshua Cherian, Impact of Artificial Intelligence on Human Resource Management by (National Digital Library)National Conference on "Artificial Intelligence in Business & Technology Volume : 6Special Issue : 1Month : August Year: 2018ISSN: 2321-788X

Rothwell, W. J., & Kazanas, H. C. (2003). Planning and Managing Human Resources: Strategic Planning for Human Resources Management (2nd ed.). Human Resource Development Press.

Stuart, R., & Norvig, P. (2016). Artificial Intelligence: A Modern Approach. Third Edition. Prentice Hall Press Upper Saddle River.

T. Abbate, C. Bassano, A. Coppola, S. Miranda, and L. Rarità, "A knowledge-based decision support system for the service quality improvement in organizations," in 7th International Workshop of Information Logistics and Knowledge Supply, ILOG, pp. 49-60, 2014.

T. Dhanabalan, and A. Sathish, "Transforming Indian industries through artificial intelligence and robotics in industry 4.0," International Journal of Mechanical Engineering and Technology, vol. 9, n. 10, pp. 835-845, 2018.

<https://www.financialexpress.com/opinion/banking-on-ai-the-time-is-ripe-for-indian-banks-to-embrace-artificial-intelligence/2017963//>

<https://www.wipro.com/business-process/why-banks-need-artificial-intelligence/>

