



A STUDY ON GENDER IMPLICATIONS ON ARTIFICIAL INTELLIGENCE (AI) AND ITS IMPACT ON JOBS

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ABSTRACT

The purpose of this study is to describe about future of workplace from the perspective of artificial intelligence (AI). The perception and attitude of employees in the modern workplace towards artificial intelligence have been done through empirical verification. The insights from this study help employee who are going to experience artificial intelligence (AI) at their workplaces. The future of employees in the technologically advanced world had been described through this research work.

KEYWORDS : Artificial intelligence, robotics, technology, smart workplace, digital workplaces.

INTRODUCTION

Artificial intelligence (AI) refers to the ability of a computer or a computer-enabled robotic system to process information and produce outcomes in a manner similar to the thought process of humans in learning, decision making and solving problems. According to recent survey by Pew Research Center, only 11 per cent of US employees assume that they will lose their jobs because of intelligent IT systems or production robots. The biggest fear is of a plant closure as a consequence of mismanagement. Automation and AI applications are acquiring competences in specific fields, from playing chess to forecasting market demand. As separate competences, these are new for humans to get accustomed to but are comparatively less frightening and therefore the resistance level towards them is relatively low.

Objectives of the study

- To find the impact of gender on perception towards artificial intelligence from the perspective of jobs.
- To know the impact of factors on acceptance of artificial intelligence at workplace.
- To know the impact of AI on employment in India.

Review of literature

West (2015) had explained that modern technology had developed robots, sensors, 3-D printing and mobile sensors with support of artificial intelligence (AI). The rapid increase in emerging technologies suggests that they are having a substantial impact on the workforce. Many of the large tech firms have achieved broad economic scale without a large number of employees. Artificial intelligence refers to "machines that respond to stimulation consistent with traditional responses from humans, given the human capacity for contemplation, judgment and intention". The need for manpower in manufacturing sector had been decreasing rapidly because organizations are showing more interest towards using of artificial intelligence rather than traditional manpower.

According to Wisskirchen et al (2017) had stated that artificial intelligence (AI) creates new technology which drastically changes existing workplace conditions. AI will have an impact on both blue collar and white collar jobs in the long term. AI helps manufacturing organization to perform 24/7 operation and it helps them to work even in danger zones where human beings cannot work. AI also helps manufactures to make production in country of origin because presently they are outsourcing work to low labor cost countries. In future entrepreneurs establish smart factories where intelligent machines and intelligent robot operators perform business process.

Two-thirds of Americans think it's likely that in 50 years robots and computers will do much of the work currently done by humans. New types of jobs like data scientist and crowd

worker will be outcome of AI in future. The era of AI is also referred as industrial revolution 4.0 which brings tremendous changes in the existing job roles and responsibilities. It is also observed that AI had been playing a crucial role in moving jobs or outsourcing in the era of globalization and digitization of the society. The humanoid robots are which behave similar to human beings are assisting the employees at workplace. Future there is scope that Actroids which are humanoid robots may take the place of employees in future.

Tay et al (2014) had explained the role of gender in interaction between robot and human. The social robots and industrial robots perform different tasks where industrial robots perform hard tasks and social robots perform simple jobs. It is also observed that people perceived that gender of robot should be dependent on its role and also according to the type of industry or firm. The behavior of robots should also be related to the nature of job it performs. The models like technology acceptance model and theory of planned behavior have been adopted by the researchers to analyze the perception of people towards the personality of the robot.

According to Becerra-Fernandez (2000) future developments for People-Finder systems such as SAGE and Expert Seeker include the development and integration of artificial intelligence (AI) technologies to enhance the capabilities of these systems where SAGE means searchable answer generating environment. Vochozka et al (2018) had explained the impact of AI in the highly automated society on job market. GDP of developed nations and industry output of developed nations drastically changes after implementing AI at workplaces. Cath et al (2018) had stated that AI is not merely another utility that needs to be regulated only once it is mature; it is a powerful force that is reshaping mankind lives, their interactions, and environments.

Smith and Anderson (2014) had stated that by 2025, robotics enter into human life through AI in various industries like health care, transport and logistics, customer service, and home maintenance. But even as they are largely consistent in their predictions for the evolution of technology itself, they are deeply divided on how advances in AI and robotics will impact the economic and employment picture over the next decade. Klumpp (2018) had explained the gap between actual human level competency and required human level competency for attaining the business goals. Since there is gap between actual human level and expected level the alternative option for businesses is adopting the artificial intelligence technology. Baylor (2009) had explained that in the era of digitization, placing an anthropomorphic agent as the front-end for a motivational system requires careful attention to design. In general, while having such an agent visually present to deliver persuasive or soothing messages can be beneficial, there are several considerations regarding how to physically instantiate it and how to design its appearance.

Makridakis (2017) had explained that AI technology will assist the entrepreneurs for brining innovative products into the market comfortably.

Research Methodology

Both primary and secondary sources of data had been used for this research study. Primary data had been collected from managerial level employees in various sectors. An online questionnaire had been developed and sent to the respondents which consist of items related to demographic variables and four psychological variables. The respondents were explained about the objective of research and they are requested to participate in the survey. The sample size of the survey is 110 and convenient sampling methodology had been used for this study. The statistical techniques like frequencies, regression analysis and one-way ANOVA had been used for data analysis. The demographic variables are gender, years of experience and type of industry.

Data Analysis

Among the respondents 68.20 are male and 31.80 are female employees. Majority of the respondents are having 6 to 10 years experience in their respective industry. From the perspective of type of industry many respondents belongs to service sector. Approximately 43 percent belong to service sector and 50 percent had an experience from 6 to 10 years. Nearly 24 percent of respondents had experience in both service and manufacturing sector.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig. (p-value)
	B	Std. Error	Beta		
1 (Constant)	3.092	0.500		6.182	0.000
ATT	-0.186	0.158	-0.177	-1.175	0.243
PT	0.520	0.188	0.464	2.772	0.007
IMP	-0.245	0.113	-0.237	-2.172	0.032

a. Dependent Variable: ACC
Source: Output from SPSS

H1: There is an impact of attitude on acceptance of artificial intelligence.

Result: The p-value for attitude (ATT) in Table 1 is more than 0.05. Hence H1 is rejected.

H2: There is an impact on perceived trust on the acceptance of artificial intelligence.

Result: H2 is accepted because p-value for perceived trust (PT) is less than 0.05 in Table 1.

H3: There is an impact of perception towards jobs on acceptance of artificial intelligence.

Result: The p-value for impact on jobs (IMP) is less than 0.05 as per Table 1 therefore H3 is accepted.

H4: There is an association between gender and attitude towards artificial intelligence.

Result: According to Table 2, the p-value for attitude (ATT) is more than 0.05. Therefore H4 is rejected.

H5: There is an association between gender and perceived trust towards artificial intelligence.

Result: H5 is rejected because p-value in Table 2 for perceived trust (PT) is more than 0.0

		Sum of Squares	df	Mean Square	F	Sig. (p-value)
ATT	Between Groups	.004	1	0.004	0.007	0.932
	Within Groups	62.987	108	0.583		
	Total	62.991	109			

PT	Between Groups	.112	1	0.112	0.222	0.639
	Within Groups	54.651	108	0.506		
	Total	54.764	109			
IMP	Between Groups	3.270	1	3.270	5.753	0.018
	Within Groups	61.386	108	0.568		
	Total	64.656	109			
ACC	Between Groups	22.343	1	22.343	51.861	0.000
	Within Groups	46.530	108	0.431		
	Total	68.873	109			

(Source: Output from SPSS)

H6: There is an association between gender and impact of jobs with regard to artificial intelligence.

Result: H6 is accepted as per Table 2 because p-value for impact on jobs (IMP) is less than 0.05.

H7: There is an association between gender and acceptance of artificial intelligence at workplace.

Result: H7 is accepted because p-value for acceptance of AI (ACC) is less than 0.05 as per Table 2.

DISCUSSION AND CONCLUSION

The gender implication has a mixed impact on perception of employees towards artificial intelligence (AI) at workplace. There is an impact of gender on employees' perception towards job opportunities and acceptance of AI at workplace. From this study it is also evident that AI had both positive impact and negative impact on job market. It is also time for present generation employees to learn about AI and also undergo training programs to be in job. It is inevitable that AI will enter into all type of industries across the globe and India is not an exception. Hence existing employees need to take certification programs on Artificial Intelligence to sustain in the competitive job market. There are many advantages with AI because more accuracy will be there with robots and automated systems rather than manual systems. The comfort of people on this planet definitely enhance with artificial intelligence.

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