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Opportunities and threats of artificial intelligence in our society: A statistical analysis on the views of different professionals

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Abstract
Application of Artificial Intelligence (AI) is a revaluation of computer science, which becomes a core component of all modern software over the coming years and decades. This research paper is based on the survey amongst the professionals from various areas to understand that how much they are aware of the threat and opportunities of AI. A questionnaire on various factors has been prepared and analyzes the data using SPSS software. Chi-square test has been done. The significant associations are discussed between important factors.

Keywords: Artificial intelligence, advantages and disadvantages, professionals, Chi-Square test, level of significance, SPSS software, significant association

Introduction

An artificial intelligence (AI) program is a program that is capable of learning, thinking and performing a task that we would normally assume a human would perform. The decisions taken by AI in every step is decided by information previously gathered and a certain set of algorithms. It is a booming technology, has an important role in the last ten years in all areas of human life.

Literature review: The development in Artificial intelligence is a combination of benefits and drawbacks. One of the biggest benefits of it is that it can significantly reduce errors and increase accuracy with precision. When programmed properly, these errors can be reduced to null. An example of the reduction in human error through AI is the use of robotic surgery systems, which can perform complex procedures with precision and accuracy, improving patient safety in healthcare (Chen *et al.*, 2022) [8].

Also to overcome human's risk, AI robots are used for defusing bomb, going to space, exploring the deepest parts of oceans accurately as machines with metal bodies are resistant in nature and can survive in hazardous atmospheres (Fox and Das, 2000) [3]. AI can handle tedious repetitive jobs endlessly without breaks. They think much faster than humans and perform multiple tasks at a time with accurate results. A prominent example of this is online customer supports chatbots (Misischia *et al.* (2022) [9].

AI brought a drastic development in medical field. AI-based technologies have allowed doctors to detect breast cancer at an earlier stage. It has also made significant contributions, with applications ranging from diagnosis and treatment to drug discovery and clinical trials by analysing patient data, identifying potential health risks, and developing personalized treatment plans (Minz and Mahobiya, 2017; Ribbens *et al.*, 2014) [10, 7].

Self-driving cars which use a combination of cameras, sensors, and AI algorithms to navigate roads and traffic, have the potential to improve road safety, reduce traffic congestion, and increase accessibility for people with disabilities or limited mobility.

Today, our everyday lives are entirely dependent on mobile devices and the internet. We utilize a variety of apps, including Google Maps, Alexa, Siri, taking selfies, making calls, responding to emails, etc. With the use of various AI-based techniques, we can also anticipate today's weather and the days ahead.

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Let us now look at what are the main obstacles that Artificial intelligence holds. The ability to create a machine that can simulate human intelligence requires plenty of time and resources and can cost huge money. AI also needs to operate on the latest hardware and software to stay updated and meet the latest requirements, thus making it quite costly. Also a big disadvantage of AI is that it is capable of learning over time with pre-fed data and past experiences, but cannot be creative in its approach (Khanzode *et al*. 2020) [5].

One application of artificial intelligence is robot, which is displacing occupations and increasing unemployment (in a few cases). For instance, robots are frequently utilized to replace human resources in manufacturing businesses, customer care, proof reading and some more (Chen *et al*., 2020) [1].

Aims and Objectives of Studies
Aim of this study was to find
- About the awareness of the use of Artificial Intelligence in profession amongst the professionals.
- The significance of association between
- Gender and Awareness about Artificial Intelligence.
- Gender and rating the use of Artificial Intelligence in profession.
- Profession and Reasons of implementing Artificial Intelligence in Companies.
- Profession and Perception of professionals that Artificial Intelligence will create so many jobs as it eliminates.

- Implementation of Artificial Intelligence in companies and its impact on jobs in future.
- Reasons of implementing Artificial Intelligence in companies and its impact on creation of new jobs in future.

Research Methodology
An online survey was conducted by using Google form to collect the primary data for this research purpose. Target respondents were professionals like teachers, Engineer, media persons, researchers, scientist, students and others. 58 professionals were participated in this survey. SPSS software is used to analyse the data. Descriptive statistics and Chi-Square test have been used to do that.

Results and Discussion
After analysing the statistical data by using statistical software SPSS, following results were obtained.

Table 1: Age and Gender wise distribution of respondents

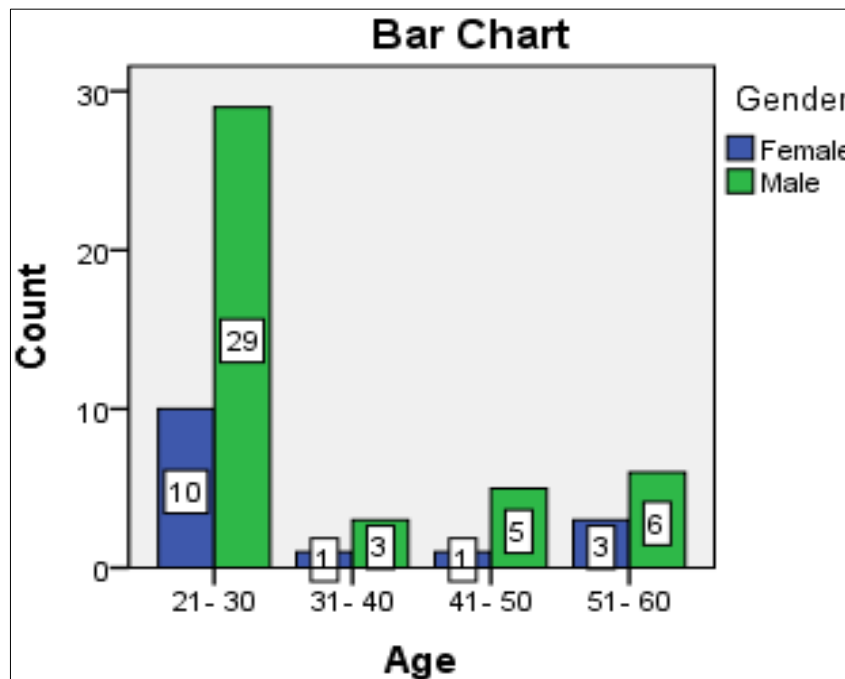| Age	Gender		Total
	Female	Male	
21- 30	10	29	39
31- 40	1	3	4
41- 50	1	5	6
51- 60	3	6	9
Total	15	43	58

Fig 1: Age and Gender wise distribution of respondents

Table 2: Profession wise distribution of respondents

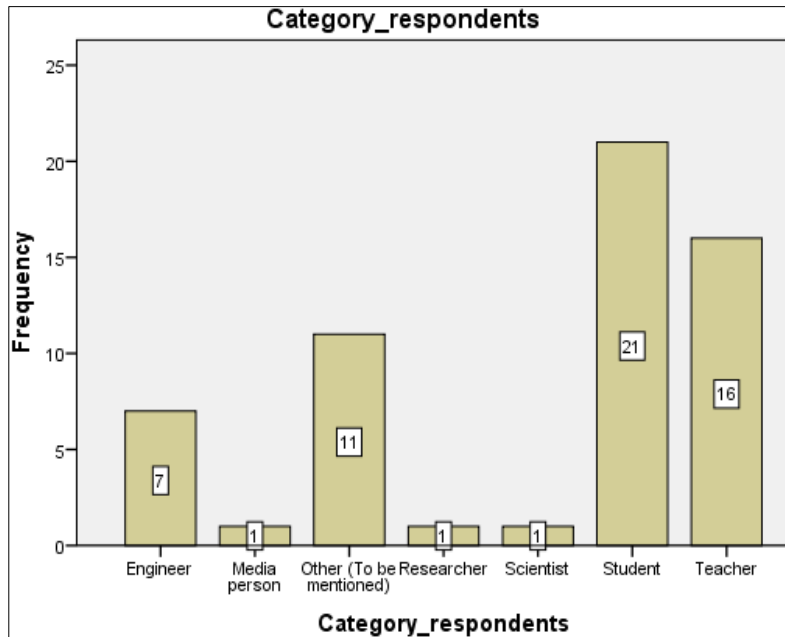| Profession	Frequency	Percent	Valid Percent	Cumulative Percent
Engineer	7	12.1	12.1	12.1
Media person	1	1.7	1.7	13.8
Other (To be mentioned)	11	19.0	19.0	32.8
Researcher	1	1.7	1.7	34.5
Scientist	1	1.7	1.7	36.2
Student	21	36.2	36.2	72.4
Teacher	16	27.6	27.6	100.0
Total	58	100.0	100.0	

Fig 2: Profession wise distribution of respondents

Table 3: Educational Qualification wise distribution of respondents

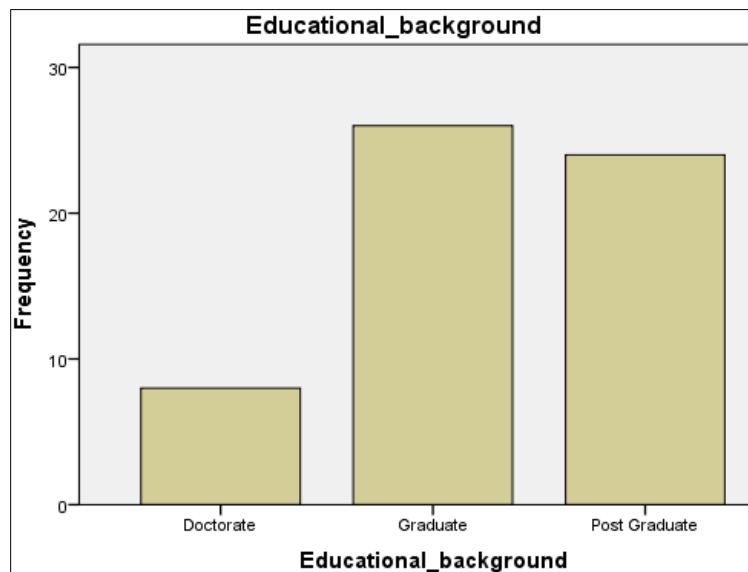| Qualification of respondents	Frequency	Percent	Valid Percent	Cumulative Percent
Doctorate	8	13.8	13.8	13.8
Graduate	26	44.8	44.8	58.6
Post Graduate	24	41.4	41.4	100.0
Total	58	100.0	100.0	

Fig 3: Educational Qualification wise distribution of respondents

Do you hear about Artificial Intelligence?
98.3% respondents were aware about artificial intelligence while 1.7% were not aware.

Do you use Artificial Intelligence in your everyday life?
72.4% respondents agreed to use artificial intelligence in their everyday life.

Which option most suitably describes your organization the use of Artificial Intelligence?
43.1% professionals agreed that they are using Artificial Intelligence currently in their profession, 6.9% are in

process, 31% are planning in future and 10.3% agreed of no need of implementing Artificial Intelligence in their profession.

Table 4: Why are companies implementing Artificial Intelligence at their workplace

Reason of Implementing AI	Frequency	Percent
24/7 Availability	3	5.2
Improved Accuracy	7	12.1
Increased Efficiency	41	70.7
Other	2	3.4
Safety and Risk Reduction	5	8.6
Total	58	100.0

Table 5: Rating the use of Artificial Intelligence by respondents (1- Minimum and 5- Maximum)

Rating of use of AI	Frequency	Percent
1.00	7	12.1
2.00	9	15.5
3.00	16	27.6
4.00	15	25.9
5.00	11	19.0
Total	58	100.0

Skills required to made it easier to use of Artificial Intelligence in their profession

Maximum 36.2% respondents thinks that programming languages like Python, Java, R, etc. are required to made it easy to use Artificial Intelligence, 20.7% think about strong mathematical/computer science/Engineering/ statistics background while 19% think that soft skills (critical thinking, problem solving, communication, etc.) is required to use Artificial Intelligence in their profession.

Table 6: Impact of Artificial Intelligence on Jobs in future

Impact of AI on Jobs in future	Frequency	Percent
Mostly negative, leading to widespread job losses.	11	19.0
Mostly positive, creating new job opportunities and improving efficiency.	31	53.4
Neutral, with minimal impact on jobs.	13	22.4
Other:	1	1.7
Unsure/Not applicable.	2	3.4
Total	58	100.0

Table 7: Jobs in future that will be displaced due to Artificial Intelligence

Jobs in future that will be displaced due to AI	Frequency	Percent
Jobs in content writing	10	17.2
Jobs in human translation and interpretation	10	17.2
Jobs in the health sector such as diagnostic imaging	3	5.2
Jobs in the IT sector, data analytics and interpretation	20	34.5
Jobs involving human customer service roles (call centres, etc.)	8	13.8
Other:	7	12.1
Total	58	100.0

Table 8: New Jobs in future which will emerge due to introduction of Artificial Intelligence

New jobs that will be emerge due to AI	Frequency	Percent
AI Auditor	1	1.7
AI Specialists/Engineers	17	29.3
IT sectors (eg. AI Business Development Manager, Data Annotation Specialist)	27	46.6
Machine Managers- oversee AI operated hardware & systems	7	12.1
Other:	1	1.7
Unsure	5	8.6
Total	58	100.0

Table 9: Possibility of replacing jobs in future by use of Artificial Intelligence (1- Minimum and 5- Maximum)

Rate	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	16	27.6	27.6	27.6
2.00	6	10.3	10.3	37.9
3.00	15	25.9	25.9	63.8
4.00	12	20.7	20.7	84.5
5.00	9	15.5	15.5	100.0
Total	58	100.0	100.0	

Do you think Artificial Intelligence will create as many jobs as it eliminates in future: 31% professionals agreed that AI will create as many jobs as it eliminates in future, 44.8% think that it may be while 24.2% are not agreed about it.

Table 10: Why is it important to regulate the use of Artificial Intelligence

	Frequency	Percent
AI is a powerful tool. Providing free access to everyone can have dangerous consequences.	17	29.3
Can be used to impersonate important figures. This can have dangerous consequences.	6	10.3
Known to give biased results, & will behave unfairly while performing certain tasks.	18	31.0
Loss of employment- AI will cause a momentary disruption in the employment market.	10	17.2
Other:	7	12.1
Total	58	100.0

Chi-square Tests to test the existence of association between various factors at 5% level of significance.

Chi-square Test 1: To test the null hypothesis

H_0: There is no association between Gender and Awareness about Artificial Intelligence.

P $value = 0.088$ which is more than 0.05, therefore null hypothesis will not be rejected at 5% level of significance and hence we can conclude that there is no significant association between Gender and Awareness about Artificial Intelligence.

Chi-square Test 2: To test the null hypothesis
H₀: There is no association between Gender and rating the use of Artificial Intelligence in profession.

P value= 0.742 which is more than 0.05, therefore null hypothesis will not be rejected at 5% level of significance and hence we can conclude that there is no significant association between Gender and rating the use of Artificial Intelligence in profession.

Chi-square Test 3: To test the null hypothesis
H_0: There is no association between Profession and Reasons of implementing Artificial Intelligence in Companies.
$P\ value$ = 0.001 which is very very less than 0.05, therefore null hypothesis will be rejected at 5% level of significance and hence we can conclude that there is strong significant association between Profession and Reasons of implementing Artificial Intelligence in Companies.

Chi-square Test 4: To test the null hypothesis
H_0: There is no association between Profession and Perception of professionals that Artificial Intelligence will create so many jobs as it eliminates.
$P\ value$ = 0.04 which is less than 0.05, therefore null hypothesis will be rejected at 5% level of significance and hence we can conclude that there is significant association between Profession and Perception of professionals that Artificial Intelligence will create so many jobs as it eliminates.

Chi-square Test 5: To test the null hypothesis
H_0: There is no association between Implementation of Artificial Intelligence in companies and Its impact on jobs in future.
$P\ value$ = 0.048 which is less than 0.05, therefore null hypothesis will be rejected at 5% level of significance and hence we can conclude that there is significant association between Implementation of Artificial Intelligence in companies and Its impact on jobs in future.

Chi-square Test 6: To test the null hypothesis Reasons of implementing AI at workplace Vs Creation of new jobs due to introduction of AI.
H_0: There is no association between Reasons of implementing Artificial Intelligence in companies and Its impact on creation of new jobs in future.
$P\ value$ = 0.001 which is very less than 0.05, therefore null hypothesis will be rejected at 5% level of significance and hence we can conclude that there is strong significant association between Reasons of implementing Artificial Intelligence in companies and Its impact on creation of new jobs in future.

Conclusion
These are the following conclusions of the study: There is
- No significant association between Gender and Awareness about Artificial Intelligence.
- No significant association between Gender and rating the use of Artificial Intelligence in profession.
- Strong significant association between Profession and Reasons of implementing Artificial Intelligence in Companies.
- Significant association between Profession and Perception of professionals that Artificial Intelligence will create so many jobs as it eliminates.

- Significant association between Implementation of Artificial Intelligence in companies and its impact on jobs in future.
- Strong significant association between Reasons of implementing Artificial Intelligence in companies and its impact on creation of new jobs in future.

Suggestion
By the analysis in the present paper, it is understood that professionals are fully aware of both the pros and cons of Artificial Intelligence and they think, AI has potential for creating a better world to live in. The most important role for us will be to ensure that the rise of the AI does not get out of human's control. The impact of AI on the society is undeniable. It continues to grow every single day. This certainly calls for the need of AI awareness, literacy and up skilling to get a hold on it.

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