

## Artificial Intelligence Awareness Among Stakeholders of Higher Education Institutions of Sirsa District of Haryana State

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### Abstract

**Context:** This research paper adds to existing literature that it is essential to become aware of the cons and pros of AI, before applying it in any field. Artificial intelligence is used in scientific research, social research and education. Stakeholders are generally unaware of the proper applications and limitations of artificial intelligence. AI has advantages like high accuracy, speed and convenience along with drawbacks like intermixing and fabricated content. **Objectives:** 1. To study the level of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District. 2. To study the significance of differences in mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on demographic variables. **Methodology:** Descriptive research was used as a survey by investigators through a self-developed Google form. A sample of 131 stakeholders was selected through a purposive sampling from Sirsa District of Haryana state. Both qualitative and quantitative data were used in this study. Statistical techniques- p-p plots, K-S test, Shapiro-wilk test, Percentage analysis, Mean, S.D., t- test and ANOVA one-way were applied in this study to compute results. **Results:** It was found that 25.95% (N = 34), 45.80% (N = 60) and 28.24% (N = 37) stakeholders of higher education institutions of Sirsa District had respectively a below average, average and above average level of artificial intelligence awareness. Qualitative analysis suggested that stakeholders of higher education institutions of Sirsa District had different levels of artificial intelligence awareness that depended on their personal perceptions. The quantitative analysis suggested that there were no significant differences in the artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on demographic variables. These results are useful for higher educational institutions to improve artificial intelligence awareness among stakeholders of their institutions.

**Keywords:** Artificial Intelligence, Awareness, Stakeholders, AI Tools, Education

### Introduction

In 1936, Alan Turing proposed a mathematical model as a foundation for electronic computers and in 1943, Neurophysiologists W. McCulloch and W. Pitts developed the first neural network model (M-P model). Further in this series, AI got widespread recognition in the year 1956, when John McCarthy clearly defined artificial intelligence. During this interval, mental work was being replaced by machines (Benko & Lanyi, 2009; & Zhang & Zhang, 1999). Artificial intelligence is developed under different stages as- artificial narrow intelligence (ANI), artificial general intelligence (AGI) and artificial super intelligence (ASI). Artificial intelligence was developed as a journey and the initial stage identified artificial intelligence as an idea until the beginning of the 20th century, at the second stage, during (1950-1970s), artificial intelligence emerged as a scientific discipline, the third stage is the “winter” period and revival during (1970-2000) and fourth stage is ‘modern stage’ year 2000 to present and it consists of numerous applications of AI in human life (Mamadiyorov & Narimonova, 2025). AI is an intelligence that is artificial. Abbass (2021) defined AI in two ways. Firstly, “Artificial intelligence is the automation of cognition.” Secondly, “Artificial intelligence is social and cognitive phenomena that enable a machine to socially integrate with a society to perform competitive tasks requiring cognitive processes and communicate with other entities in society by exchanging messages with high information content and shorter representations.” McCarthy (2004), “It is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand

human intelligence, but AI does not have to confine itself to methods that are biologically observable.”

Artificial intelligence technologies include machine learning, deep learning, natural language processing and computer vision. AI automates repetitive learning and discovery, adds intelligence to existing products, adapts data through progressive learning algorithms, analyzes more and deeper data and achieves high accuracy through deep neural networks and gets the maximum data when algorithms are self-learned. Any Summary, Bing Create, Books AI, ChatGPT for Search Engines, Consensus, Elicit, Explain Paper, Formulizer, Gamma App, GPT for Sheets, Grammar GPT, Inciteful, Konjer, Litmaps, MiniGPT-4, OpenRead, Paper Brain, PDF GPT IO, PDFgear, Recast, Research Rabbit, Scholarcy, SciSpace, Scite Assistant, Semantic Scholar, Talk to Books, Teach Anything, Tome AI, Trinka, and Zeroscope Text-to-Video are well-known AI tools (Rathinasabapathy et al., 2023). The education sector uses AI in designing assessments, providing context, interpreting results, continuous improvement, ethical considerations, providing feedback, individualizing instruction, monitoring progress, fostering critical thinking and ensuring accuracy. There are many challenges of applying AI in education like- the role of stakeholders' participation in developing artificial intelligence tools, transparency, bias, lack of human interaction, limited scope, ethical concerns, limited understanding, inadequate training, integration with existing systems, cost, resistance to change, student motivation and engagement, standardization, technical difficulties, data management, and feedback and support (Owan et al., 2023).

The facets of AI include autonomy, learning, and inscrutability, which are interrelated and mutually dependent (Berente et al., 2021). There are many important applications of artificial intelligence in scientific research and education field. It has been reflected in three aspects i.e. appreciation, guidance and learning. Khan Academy is using AI successfully for educational purposes; meanwhile it is required to develop a universal accepted model for AI applications for higher efficiency (Peng, 2025). Now, AI is more widely available than in the past and it is being used as the backbone of new technology revolutions. AI integrates with a variety of disciplines, which can influence human life to large extent (Jiang et al., 2022). Artificial intelligence has a positive relation with job burnout, but has no direct relation with career competencies (Kong et al., 2021). Meanwhile, there is a positive relationship between Artificial intelligence awareness and physical and psychological withdrawal behaviors, and job security and emotional exhaustion mediate this relationship (Nguyen & Nguyen, 2025).

### **Rationale of the Study**

It has been reported that generative artificial intelligence tools practice unacceptable epistemic risks in qualitative data analysis (Nguyen & Welch, 2026). Artificial intelligence has been regularly used by academic researchers, but AI is unable to differentiate truths and falsehoods. AI malpractices in language transformation or manipulating manuscripts by incorporating fabricated citations or intermixing data from previously conducted studies (Bruce, 2024). Artificial intelligence has to face many criticisms. Further, it is reported that potential risks are generated by the illegal use of AI-generated images in the development of falsified scientific data and ethical guidelines are advised to follow to stop malpractices of AI (Zecca et al, 2023). Recently, a graduate student created art designs using artificial intelligence, which were used in an exhibition of Alaska University in the United States. Another student protested against AI-generated designs and tore 57 images out of 160, which damaged 220 Dollars and the student was arrested for his act (Dainik Jagran, 2026, 24 January).

Stakeholders usually apply Artificial intelligence, but remain unaware of the cons and pros of Artificial intelligence. After reviewing the previously conducted studies, it is found that AI has very important roles in daily life, but there are some drawbacks of AI, so it requires awareness about the applications of artificial intelligence in daily life. This study is conducted to know

the artificial intelligence awareness of stakeholders and this study is able to fill the research gap in this field.

### Objectives of the Study

1. To study the level of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District.
2. To study the significance of differences in mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on demographic variables.

### Hypotheses of the Study

H<sub>0</sub>1: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on occupation.

H<sub>0</sub>2: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on Institution type.

H<sub>0</sub>3: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on age.

H<sub>0</sub>4: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on class.

H<sub>0</sub>5: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on stream.

H<sub>0</sub>6: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on locality.

H<sub>0</sub>7: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on gender.

### Research Methodology

In this study, Descriptive research methodology was used, and a survey was conducted through a self-developed questionnaire by the investigators. The theoretical bases of this research were based on the findings of the study conducted by Ferikoglu and Akgun (2022). All the stakeholders of higher education institutions constituted the population and a sample of 131 stakeholders was selected as a sample through purposive sampling. This study included both quantitative and qualitative data and the statistical techniques p-p plots, K-S test and Shapiro-wilk test were employed to compute the normality of data. Percentage analysis was also computed in this study. Mean and SD were used as descriptive tools and t- test and ANOVA one-way were applied in this study to compute the differential analysis.

### Data Analysis and Interpretations

#### Section I: Level of Artificial Intelligence Awareness

Table No. 1: Level of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District

Sr. No.	N	Score-range	Percentage	Interpretation
1	34	Below 60	25.95	Below Average
2	60	60 to 69	45.80	Average
3	37	70 and Above	28.24	Above Average

It was found in Table no. 1 that 25.95% (N = 34), 45.80% (N = 60) and 28.24% (N = 37) had a below average, average and above average level of artificial intelligence awareness respectively.

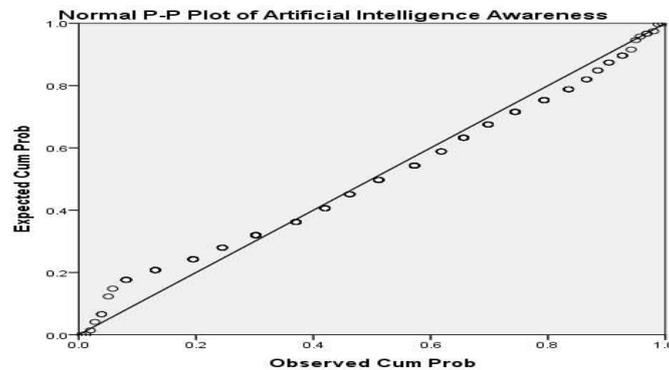
#### Section II: Normality of Data

Table No. 2: Normality of Data of Artificial Intelligence Awareness

	Tests of Normality					
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Artificial intelligence awareness	.115	131	.000	.922	131	.000

a. Lilliefors Significance Correction

It has been found in Table no. 2 that the calculated values of Kolmogorov-Smirnov (K-S test) was .115 and Shapiro-wilk test was .922 and these both values were higher than .05 level of significance, so these were insignificant and data was found to be normally distributed. It was also analysed in Graph No. 1. that in p-p plots points lies near the straight line which indicates that the data of artificial intelligence awareness was found to be normally distributed.



**Graph No. 1: p-p plot of Artificial Intelligence Awareness**

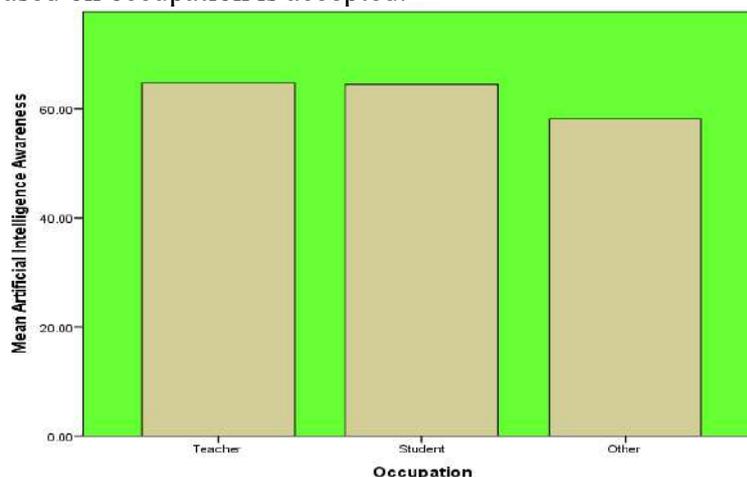
### Section III: Differential Analysis

$H_0$ : There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on occupation.

**Table No. 3: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on occupation.**

Occupation	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	343.141	2	171.571	2.329	.102	Insignificant
Within Groups	9430.370	128	73.675			
Total	9773.511	130				

Graph no. 2 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on occupation. It was revealed in the Table no. 3 that the calculated F-value was found ( $F_{2/128} = 2.39$ ) for artificial intelligence awareness based on occupation at level of significance .05, which was found less than critical  $F_{2/128} = 3.02$  at level of significance .05, and ( $p = .102 > .05$ ), so it was insignificant, so  $H_0$ : There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on occupation is accepted.



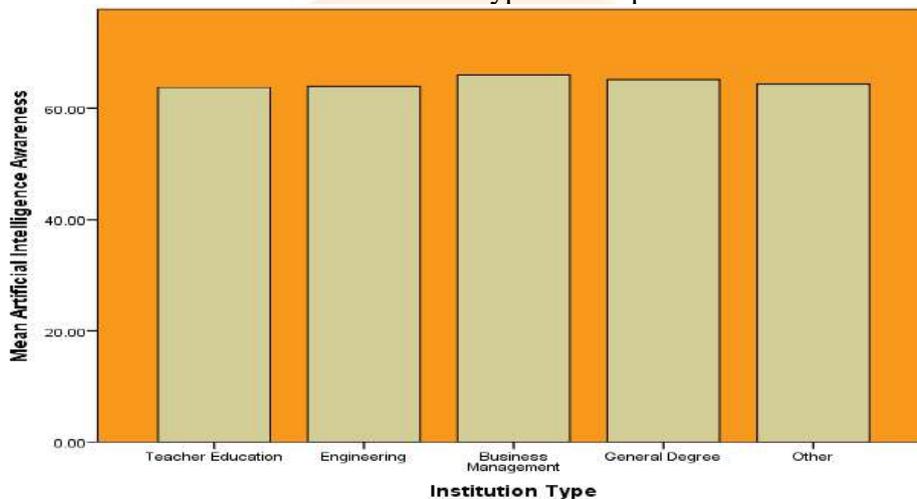
**Graph No. 2: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on occupation.**

H<sub>0</sub>2: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on Institution type.

**Table No. 4: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on institution type.**

Institution Type	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	20.957	4	5.239	.068	.992	Insignificant
Within Groups	9752.555	126	77.401			
Total	9773.511	130				

Graph no. 3 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on institution type. It was revealed in the Table no. 4 that the calculated F-value was found ( $F_{4/126} = .068$ ) for artificial intelligence awareness based on institution type at level of significance .05, which was found less than critical  $F_{4/126} = 2.44$  at level of significance .05, and ( $p = .992 > .05$ ), so it was insignificant, so H<sub>0</sub>2: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on institution type is accepted.



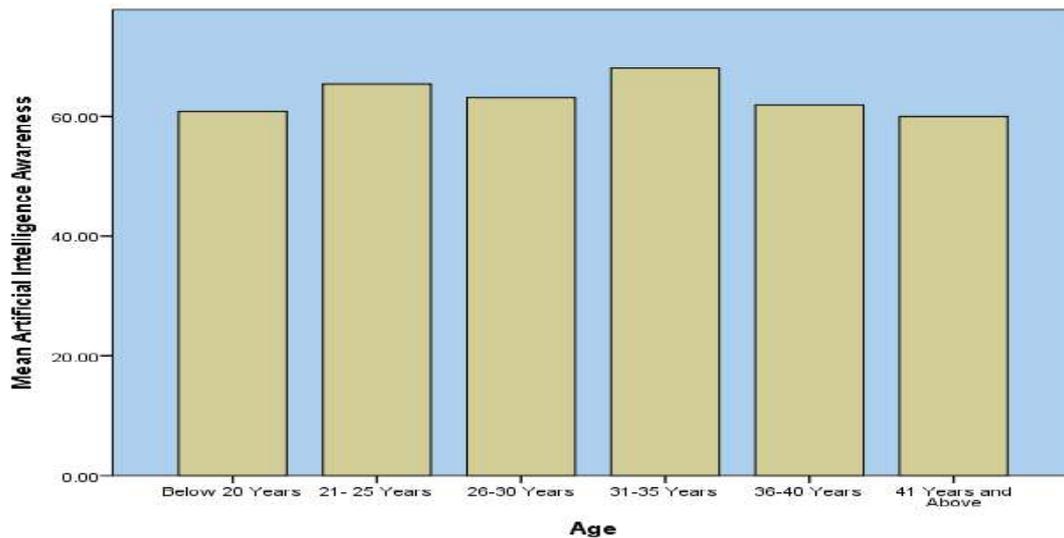
**Graph No. 3: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on institution type.**

H<sub>0</sub>3: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on age.

**Table No. 5: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on age.**

Age	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	565.220	5	113.044	1.535	.184	Insignificant
Within Groups	9208.292	125	73.666			
Total	9773.511	130				

Graph no. 4 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on age. It was revealed in the Table no. 5 that the calculated F-value was found ( $F_{5/125} = 1.535$ ) for artificial intelligence awareness based on age at level of significance .05, which was found less than critical  $F_{5/125} = 2.29$  at level of significance .05, and ( $p = .184 > .05$ ), so it was insignificant, so H<sub>0</sub>3: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on age is accepted.



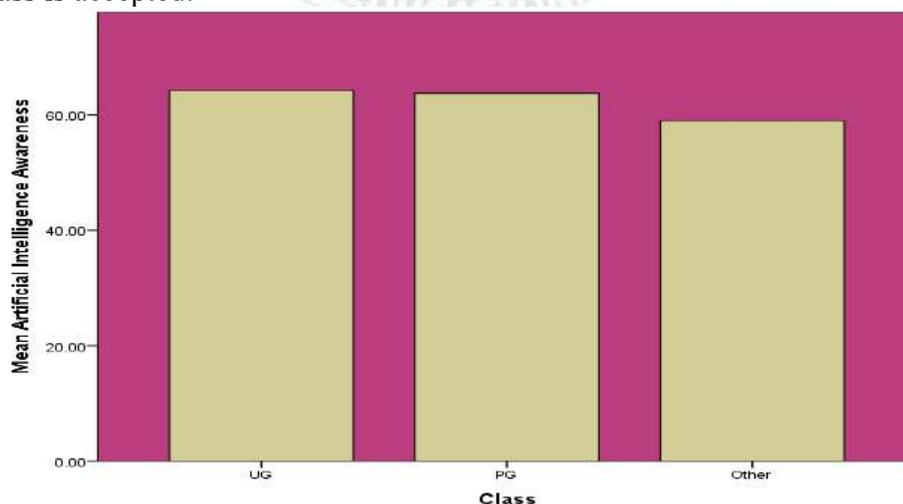
**Graph No. 4: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on age.**

H<sub>04</sub>: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on class.

**Table No. 6: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on class.**

Class	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	54.795	2	27.397	.361	.698	Insignificant
Within Groups	9718.717	128	75.927			
Total	9773.511	130				

Graph no. 5 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on class. It was revealed in the Table no. 6 that the calculated F- value was found ( $F_{2/128} = 1.535$ ) for artificial intelligence awareness based on class at level of significance .05, which was found less than critical  $F_{5/125} = 3.07$  at level of significance .05, and ( $p = .698 > .05$ ), so it was insignificant, so H<sub>04</sub>: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on class is accepted.



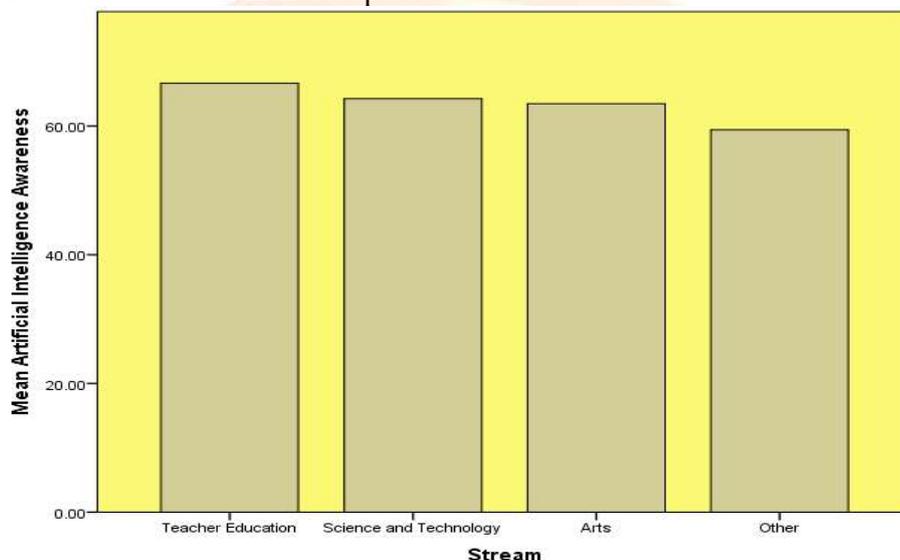
**Graph No. 5: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on class.**

H<sub>05</sub>: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on stream.

**Table No. 7: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on stream.**

Artificial Intelligence Awareness	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	435.148	3	145.049	1.973	.121	Insignificant
Within Groups	9338.363	127	73.530			
Total	9773.511	130				

Graph no. 6 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on stream. It was revealed in the Table no. 7 that the calculated F- value was found ( $F_{3/127} = 1.973$ ) for artificial intelligence awareness based on class at level of significance .05, which was found less than critical  $F_{3/127} = 2.68$  at level of significance .05, and ( $p = .121 > .05$ ), so it was insignificant, so H<sub>05</sub>: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on stream is accepted.



**Graph No. 6: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on stream.**

H<sub>06</sub>: There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on locality.

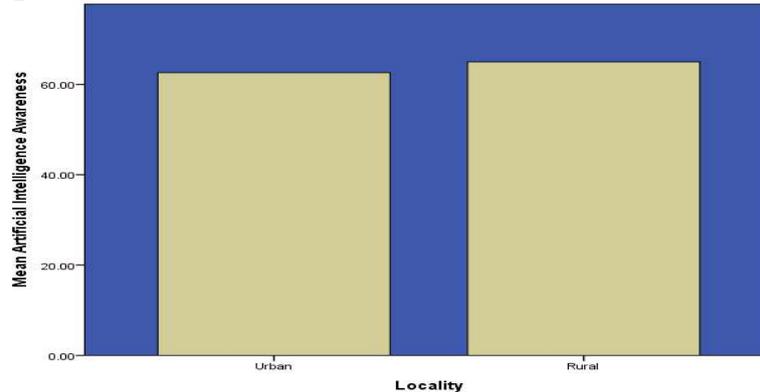
**Table No. 8: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on locality.**

Variable	Locality	N	Mean	Std. Deviation	t Value	Sig.	Interpretation
Artificial Intelligence Awareness	Urban	50	62.60	8.847	1.523	.264	Insignificant
	Rural	81	64.96	8.48888			

Level of significance .05 & df = 129

Graph no. 7 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on locality. It was revealed in the Table no. 8 that the calculated mean and SD for urban stakeholders was 62.60 and 8.847 and for rural stakeholders was 64.96 and 8.488 respectively and the calculated t- value was found 1.523 for artificial intelligence awareness

based on locality at level of significance .05 and  $df = 129$ , which was found less than critical  $t = 1.98$  at level of significance .05, and ( $p = .264 > .05$ ), so it was insignificant, so  $H_0$ : There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on locality is accepted.



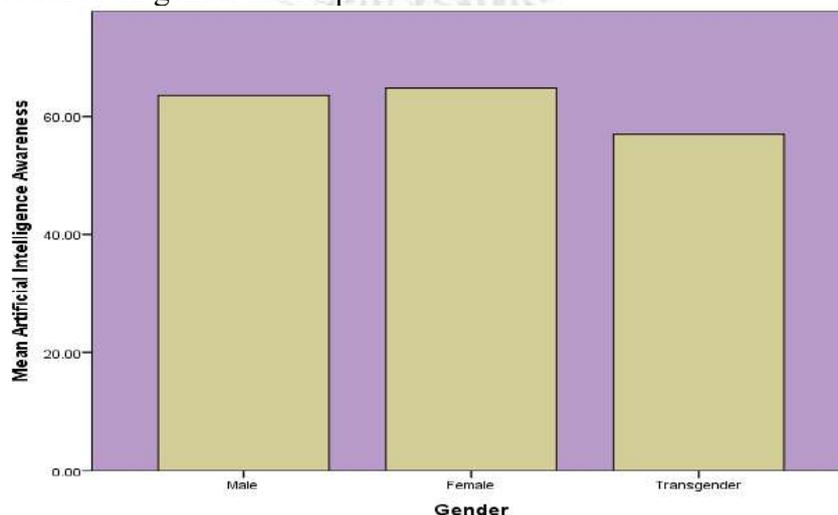
**Graph No. 7: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on locality.**

$H_0$ : There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on gender.

**Table No. 9: Significance difference of mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on gender.**

Gender	Sum of Squares	df	Mean Square	F	Sig.	Interpretation
Between Groups	110.376	2	55.188	.731	.483	Insignificant
Within Groups	9663.136	128	75.493			
Total	9773.511	130				

Graph no. 8 represents the mean scores of artificial intelligence awareness and it was found that there were differences in the mean scores of artificial intelligence awareness of stakeholders based on gender. It was revealed in the Table no. 9 that the calculated F- value was found ( $F_{2/128} = .731$ ) for artificial intelligence awareness based on gender at level of significance .05, which was found less than critical  $F_{2/128} = 3.07$  at level of significance .05, and ( $p = .483 > .05$ ), so it was insignificant, so  $H_0$ : There is no significant difference in the mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on gender is accepted.



**Graph No. 8: Mean scores of artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on gender.**

**Qualitative Analysis**

Item no. 21 in this self-developed tool stated that describe about merits and demerits of artificial intelligence, then 25.19% (n = 33/131) of stakeholders did not respond for merits or demerits of AI applications, which suggested that they are not aware of artificial intelligence. One respondent i.e. 0.76% (n = 01/131) answered that artificial intelligence is no longer useful. 22.90% (n = 30/131) stakeholders responded that Chatbot is well known and they think that AI has high speed, high accuracy and time saving, but it ignores human psychology and social interaction, needs proper training and not economical in financial aspects. 16.79% (n= 22/131) stakeholders responded that AI has 24 hours availability and efficient in administrative tasks, but it may result in cyberattacks or job displacement. 13.74% (n = 18/131) Stakeholders responded that AI is more powerful than human mind, ignores human psychology and it has ethical issues in research. 41.22% (n = 54/131) Stakeholders responded that AI provides immediate responding, vast educational resources, self-centered learning experiences, further it was found that AI cannot replace teachers, it has technical issues and unsafe to use many times. It can be concluded from these findings that stakeholders had different level of artificial intelligence awareness that depends on their personal perceptions.

**Discussion of Results**

It was concluded that 25.95% (N = 34), 45.80% (N = 60) and 28.24% (N = 37) stakeholders of higher education institutions of Sirsa District had respectively a below average, average and above average level of artificial intelligence awareness. Qualitative analysis suggested that stakeholders of higher education institutions of Sirsa District had different levels of artificial intelligence awareness that depended on their personal perceptions. The quantitative analysis suggested that there were no significant differences in the artificial intelligence awareness of stakeholders of higher education institutions of Sirsa District based on demographic variables. Our findings support the results of the studies conducted by Alimi et al. (2021), who found that maximum students were unaware of artificial intelligence in learning and there were no significant differences in awareness of artificial intelligence on gender basis. Abayomi et al. (2021) found that academic librarians are aware of AI applications in university libraries and they are afraid of job loss, and similar results were reported by Ahalya and Shreeya (2019) on perspectives of artificial intelligence framework. Gaber et al. (2023) reported that faculty members had a medium level of artificial intelligence awareness and further it was found that there was no significant relationship between AI awareness and technology acceptance; however, a significant positive relationship between AI awareness and digital competencies was reported. Uygun et al. (2024) reported that teachers' AI awareness was at a moderate level and concluded that younger participants with higher academic qualifications had higher knowledge of AI. Dergunova et al. (2022) conducted a qualitative study and used content analysis in this research and reported that there was a good level of artificial intelligence awareness among students, yet there were many advantages and disadvantages that emerged with the use of artificial intelligence. In this series, Kandlhofer et al. (2023) conducted a study in two active phases, in the first phase, applications and training were implemented through didactic concepts and in the second phase, workshops and training were imparted to teachers and students for developing awareness regarding artificial intelligence and further, it was reported that there was a positive impact of both phases on the awareness and general knowledge about artificial intelligence.

**Suggestions for Further Research**

1. In our study, a self-developed tool was used to collect data; in the future, other standardized tools can be used.
2. In further research, cause and effect relationship can be studied.
3. It is suggested that in future research, other data collection techniques like interviews, checklists or schedules can be used.

4. Content analysis can be used for qualitative data analysis in future research in this field.
5. In this study, limited statistical techniques were used, so in further research, other statistical techniques can be used.
6. Similar research can be conducted on a large sample at any level of educational institutions.

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