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# Exploring the Ethical Awareness of Generative AI among Research Scholars at the University of Delhi

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**ABSTRACT**

This study explores the level of ethical awareness about Generative AI usage in research among research scholars at University of Delhi. Study also highlights the research scholar's perspective about the pros and cons of Generative AI usage in research, as well as their attitude towards responsible research with AI application. The rapid growth of Artificial intelligence (AI) has given rise to Generative AI, which can generate new content, including text, images, audio and videos. While Generative AI holds immense potential for various applications, such as research and creativity, it also raises serious ethical concerns like plagiarism in research publications, scope for misinformation and dissemination of fake news. Being at the forefront, research scholars play a crucial role in shaping the ethical debate surrounding the use of AI technology in research. The study conducted through a survey method, questionnaire was sent to select Ph.D research scholars from various departments at the University of Delhi. The study evaluated the Generative AI usage in research across different research phases like text generation for literature review, data synthesis etc. The findings highlight the need for institutions to enhance their research support mechanism for the responsible and transparent research environment in academia with AI. Insights from this study can be useful for the people working on AI ethics and usage in research.

**Keywords:** Generative AI, Ethical awareness, Research scholars, University of Delhi, Ethical implications.

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## 1 INTRODUCTION

Artificial intelligence has shown tremendous growth in the last few years. And its large scale transformation can be seen in the various fields such as academics, research and education. In this series of developments generative AI is the one that has shown new possibilities of machine learning by generating human-like content using a large language model (Goodfellow et al., 2014). Generative AI can be utilised for content creation problem solving and tiresome repetitive task to improve human productivity (Elgammal et al., 2017; Huang & Belongie, 2017), its usage creating a new ethical challenge for the academic research (Siau & Wang, 2020).

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The University of Delhi is among one of the top leading universities of India, which actively participating in artificial intelligence research and education. With a large an active community of researchers and faculty members examining the ethical awareness about the usage of Generative AI is very crucial for cultivating responsible and accountable research environment.

This study aims to explore the ethical awareness of researchers at the University of Delhi for the usage of Generative AI in research. There is a gap in documentation for understanding scholar perspective and practices regarding ethical concerns involved with generative AI uses. Despite existing ethical norms on AI their application has received very little attention within research community. Addressing this issue is important for original and informed decision making. Present study aims to

provide first hand observational insights into research scholar's ethical awareness and institutional support mechanism for AI application in research. Study scope includes select Ph.D research scholars from the various departments of University of Delhi (North campus) only. Study is guided by the existing theoretical frameworks in AI ethics and ethical decision making.

## 2 LITERATURE REVIEW

Generative AI is a series of machine learning algorithm models which is capable of generating new text images or audio content by using existing patterns from big datasets (Goodfellow et al., 2014). These models, which include Autoregressive models, Generative Adversarial Networks (GANs), and Variational Autoencoders (VAEs), have done impressive work in text generation, image synthesis, and music composition (Brock, Donahue, & Simonyan, 2019). Generate AI applications can be seen in numerous fields like education, healthcare scientific research and in the creative industries (Elgammal et al., 2017). Generative AI has been used in creative fields to generate original music composition, art works and fashion designs (Huang & Belongie, 2017) and in their ethical dilemma rises from the AI based Technology usage, Siau and Wang (2020) emphasized the importance of addressing the key issues like explain ability, data biasedness and AI systems related ethical concerns. Study emphasizes the need of some new ethical standards, laws and policies for the ethical use of AI and to mitigate the AI related hazards. Correa et al. (2023) noticed a similarity in the ethical principles guiding AI usage worldwide by meta-analysis of 200 governance policies and ethical guidelines. They highlight the significance of addressing AI related ethical concerns like privacy breach, algorithmic prejudice and transparency. The study identified 17 key guiding ideas for the upcoming legislative initiatives and for the application of AI in the light of ethical principles. Leung et al. (2023) Identified ethical implications of generative AI to create content for scientific writings in research publication community. Also study emphasizes how generative can be utilised for generating research ideas, enhancing programming and creating scientific content. Further study outlined the editorial norms for the use of generative AI in authorship; peer review and editorial process in scholarly publications, study mention the need for prudence while employing generative AI.

Kingsley (2023) explains how ChatGPT a generative AI algorithm can be used for generating new content in various media format including text, image, audio, video, code and simulations. The study further examined the UNESCO recommendation guidelines for employing ChatGPT into the research and academic publication procedures. Kingsley also point out the growing trend of academic writers and researchers using AI in their work. In their comprehensive investigation of AI Technologies usage in education, Chiu et al. (2023) focused on the AI application in the area of learning, teaching, assessment and administration. Further study highlights the need for new pedagogies and interdisciplinary teaching by identifying learning outcomes challenges and future scope for AI usage in education. Chiu (2024) survey discusses the effects of the generative AI on learning outcomes in higher education. The qualitative study emphasized on how changing higher education can train and prepare the students for the AI driven workforce. And it also examines the student perspective about the pros and cons of AI usage in education. Stahl and Eke (2024) explored the plus and minus of conversational AI such as ChatGPT, to check the ethical concerns they pose, the study also addressed the ethical and social implications of AI usage and issues such as accountability, biasedness responsibility and inclusivity.

## 3 STATEMENT OF PROBLEM

Despite the fast growth and increasing popularity of the generative AI technology usage in academia, a significant and continuous gap can be seen in understanding the ethical awareness of researchers at the University of Delhi, who actively use AI technology in their work. Generative AI capability to generate human like content across various discipline questions on ethics and emphasize the need to analyse how research scholars will understand and address these questions. Current ethical principles for AI usage are often generalized and there is a lack of documentation about their systematic application by University researchers. This gap in empirical data hinders the development of a responsible and accountable research culture within academia. Hence this study explores the level

of ethical awareness understanding among research scholars of different departments at the University of Delhi and identifying factors that affect the ethical decision making. Further study mention about the institutional support mechanism for tackling the ethical concerns associated with the generative AI usage in research.

## 4 OBJECTIVES OF THE STUDY

The objectives of the study are:

- To check the level of ethical awareness about generative AI usage among research scholars;
- To explore how awareness can affect research scholars' ethical practices and decision making;
- To suggest useful insights for enhancing ethical awareness about generative AI usage in research.

## 5 SCOPE AND LIMITATIONS OF THE STUDY

This study is focused on Ph.D research scholars at University of Delhi. This study explores their understanding of ethical principles and guidelines regarding the usage of generative AI in research. The survey area is restricted to the University of Delhi (North campus) and its affiliated departments. The sample includes only registered PhD research scholars excluding undergraduate, postgraduate, certificate and diploma students, faculty members and non-teaching staff. This study applied a mixed method approach, integrating surveys and personal interviews for data collection.

Findings of this study are not limited to University of Delhi only it may also give some useful insights for other institutions working on the generative AI ethical usage in research. The study's limitation is its limited participant's pool of research scholars which may not serve justice in representing the broader perspective of all stakeholders, who directly or indirectly using generative AI in their work. A big section of excluded students and staff may also limit the scope of captured ethical awareness. Furthermore the brief duration of study provides only a snapshot of ethical awareness at particular point of time. which highlights the need for a continuous longitudinal research to trace the new emerging trends. These limitations are explained in order to increase transparency and establish the findings within the defined parameters of study.

## 6 RESEARCH METHODOLOGY

A structured questionnaire was designed after thorough review of literature on the areas including AI ethics, AI usage in education and research, as well as different institutions recommendation and guidelines related to generative AI application in research and education are consulted. For data collection a questionnaire was developed (only for registered PhD research scholars at the University of Delhi) on the topic "Exploring the Ethical Awareness of Generative AI among Research Scholars at the University of Delhi". The survey questionnaire was sent via email and WhatsApp to select PhD research scholars across various departments at the University of Delhi. The data was collected over a period of one month from November to December 2024. Out of total 100 some 52 (52%) research scholars completed the questionnaire successfully.

## 7 DATA ANALYSIS AND INTERPRETATION

### 7.1 Demographic Information

#### 7.1.1 Gender of the Respondents

Data in the Table 1 reveals that only (30.8%) of participants were male, while (69.2%) were female. This shows a higher representation of females in the study, highlighting gender diversity among the participants.

**Table 1: Gender of the Respondents (n=52)**

| S. No. | Gender | Responses | Percentage |
|---|---|---|---|
| 01 | Male | 16 | 30.8 |
| 02 | Female | 36 | 69.2 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

#### 7.1.2 Age of the Respondents

The collected data in Table 2 show that the majority of participants (76.9%) are in the 26-30 age group. The under-20, 20-25, and 31-35 age groups each account for a small percentage (7.7%) of the

participants, while no participants were over 35 years old.

**Table 2: Age of the Respondents(n=52)**

| S.No. | Age | Responses | Percentage |
|---|---|---|---|
| 01 | Under 20 | 04 | 07.7 |
| 02 | 20-25 | 04 | 07.7 |
| 03 | 26-30 | 40 | 76.9 |
| 04 | 31-35 | 04 | 07.7 |
| 05 | Over 35 | 00 | 00.0 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

### 7.1.3 Department of the Respondents

The data revealed in Table 3 shows that the majority of participants (53.8%) were from the Department of Library and Information Science, followed by those from Hindi (15.4%). The remaining departments, including Computer Science, History, Political Science, and Sociology, each had a smaller representation of participants (7.7%).

**Table 3: Department of the Respondents(n=52)**

| S.No. | Department | Responses | Percentage |
|---|---|---|---|
| 01 | Department of Library and Information Science | 28 | 53.8 |
| 02 | Computer Science | 04 | 07.7 |
| 03 | Hindi | 08 | 15.4 |
| 04 | History | 04 | 07.7 |
| 05 | Political Science | 04 | 07.7 |
| 06 | Sociology | 04 | 07.7 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

### 7.1.4 Education level of Respondents

The data in the Table 4 show that the majority of participants are in their first year of the PhD program (38.5%), followed by those in the fifth year (23%). The distribution indicates a diverse representation across different stages of doctoral studies, with a significant number of participants in the early years of their PhD program.

**Table 4: Education level of Respondents(n=52)**

| S. No. | Education Level | Responses | Percentage |
|---|---|---|---|
| 01 | PhD 1st year | 20 | 38.5 |
| 02 | PhD 2nd year | 08 | 15.4 |
| 03 | PhD 3rd year | 08 | 15.4 |
| 04 | PhD 4th year | 04 | 07.7 |
| 05 | PhD 5th year | 12 | 23.0 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

## 7.2 GENERATIVE A.I. AND RESEARCH

### 7.2.1 Formal education or training on research ethics

Data revealed that out of 52 participants, only 4 (7.7%) had received formal education or training on research ethics, particularly related to the use of Generative AI technologies. In contrast, the majority, 48 (92.3%), had not received such training. This highlights a significant gap in ethical education among research scholars regarding the ethical considerations associated with Generative AI technologies in research.

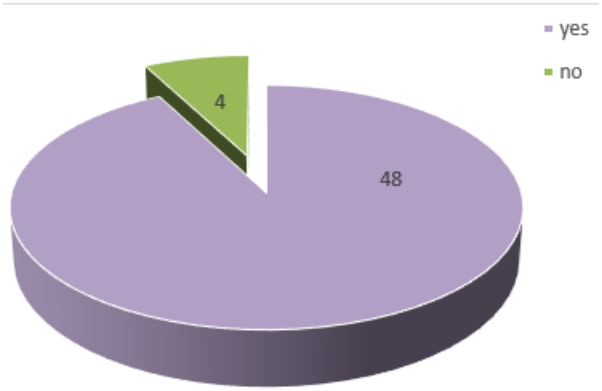


**Figure 1: Formal education or training on research ethics(n=52)** **Source:** Author's own work.

### 7.2.2 Engagement in Generative AI Ethics Workshops

Table 5 shows that a majority of participants (61.5%) would be interested in participating in workshops or training programs focused on ethical considerations in the use of Generative AI in research. (30.8%) responded “Maybe”, indicating some interest but uncertainty. Only (7.7%) said they would not be interested in such programs. This

suggests that participants have a significant interest in learning more about the ethical implications of Generative AI in research and in engaging in discussions and training on this topic.

**Table 5 Respondents Interest in Generative AI Ethics Workshops(n=52)**

| S. No. | Response | Responses | Percentage |
|---|---|---|---|
| 01 | Yes | 32 | 61.5 |
| 02 | No | 04 | 07.7 |
| 03 | Maybe | 16 | 30.8 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

### 7.2.3 Awareness of Global Research Ethics on Generative AI

Figure 2 results show that, out of 52 participants, only 16 (30.7%) research scholars were aware of international research ethics guidelines related to the ethical use of AI technologies, including generative AI, in research. The majority, 36(69.3%), were not aware of such guidelines. This indicates a significant lack of knowledge and awareness among research scholars regarding the existing ethical guidelines and principles governing the use of AI in research. It suggests a need for better dissemination of information about these guidelines to ensure that research scholars are well-informed about the ethical considerations and best practices when utilizing AI technologies in their work.

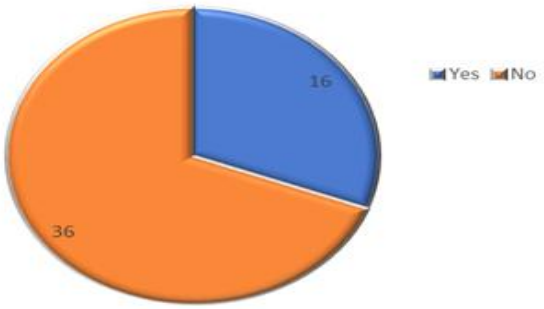


**Figure 2: Awareness of Ethical Guidelines on AI Use (n=52)**

**Source:** Author's own work.

### 7.2.4 Perception of Ethics in Generative AI Research

Table 6 Data reveals that the majority of participants (77%) consider ethical guidelines as very or extremely important when utilizing Generative AI in their research, emphasizing the significance of ethical considerations in the use of AI technologies in their research.

**Table 6: Perception of Ethics in Generative AI Research (n=52)**

| S.No. | Importance Level | Responses | Percentage |
|---|---|---|---|
| 01 | Not important at all | 00 | 00.0 |
| 02 | Slightly important | 08 | 15.3 |
| 03 | Moderately important | 04 | 07.7 |
| 04 | Very important | 20 | 38.5 |
| 05 | Extremely important | 20 | 38.5 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

### 7.2.5 Key Ethical Considerations in Generative AI Research

As per the Figure-3 total 52 participants response data highlights the need for ethical guidelines in generative AI, emphasizing transparency and explain ability of generated AI outcomes (66.7%), privacy and data protection (50%), and respect for the human rights and dignity in Generative AI applications (75%) are more important than bias and fairness in Generative AI algorithms (41.7%), and accountability and responsibility in Generative AI research (50%). Data reveal that Research scholars prioritize these considerations to ensure the responsible development and deployment of AI technologies across various domains, including scientific research and higher education.

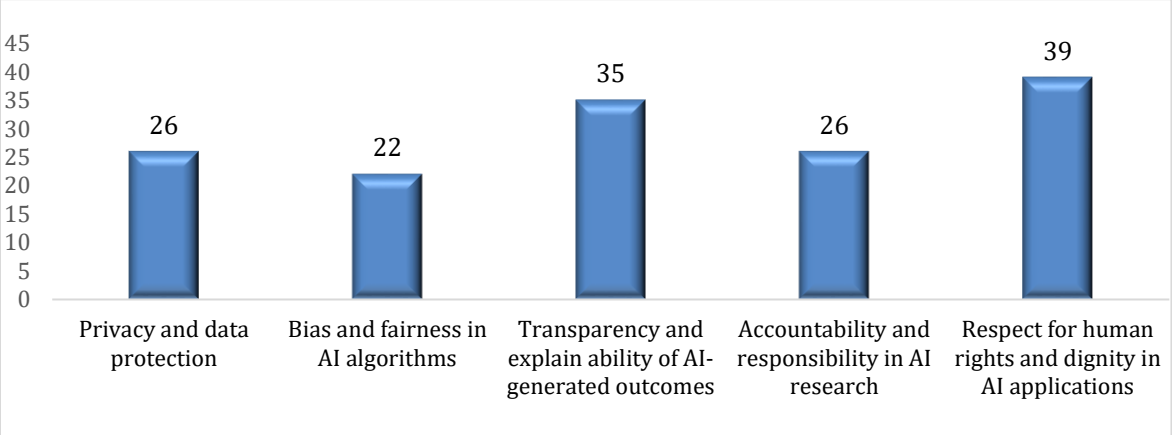


**Figure 3: Ethical Considerations in Generative AI Research (n=52)**

**Source:** Author's own work.

### 7.2.6 Usage of AI Ethical Guidelines in Research

Data indicate that out of 52 participants, only 4 (7.7%) have consciously applied international research ethics guidelines when using generative AI in their research, highlighting a significant gap of 48 (92.3%) between ethical awareness and practical application.

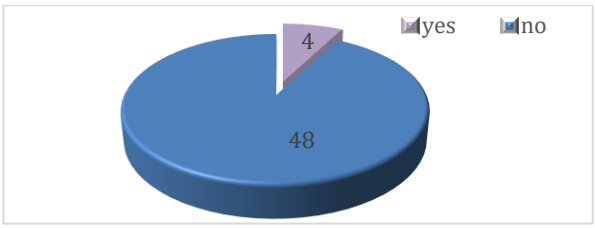


**Figure 4: Usage of AI Ethical Guidelines in Research (n=52)**

**Source:** Author's own work.

### 7.2.7 Opinion on Generative AI Research Potential

Data show that 26 (50%) of research scholars believe generative AI can contribute to advancing research in their field, with 16 (30.8%) agreeing and 10 (19.2%) strongly agreeing. However, a significant portion 20(38.5%) remained neutral, and 6(11.5%) strongly disagreed. This indicates a mixed perception among research scholars regarding the potential use of generative AI to drive progress in their respective research domains.

**Table 7: Opinion on Generative AI Research Potential (n=52)**

| S. No. | Rating | Responses | Percentage |
|---|---|---|---|
| 01 | Strongly disagree | 06 | 11.5 |
| 02 | Disagree | 00 | 00.0 |
| 03 | Neutral | 20 | 38.5 |
| 04 | Agree | 16 | 30.8 |
| 05 | Strongly Agree | 10 | 19.2 |
| | **Total** | **52** | **100** |

**Source:** Author's own work.

### 7.2.8 Knowledge of AI Applications in Research

The data in Table 8 shows the researchers knowledge of various use cases of Generative AI in research. The table presents the percentage of researchers who have some knowledge about each use case. It was found that researchers most commonly use Generative AI for Data synthesis and augmentation (67.3%). "Text generation for literature reviews", "Natural language understanding" and "Drug discovery and molecular design" are the second most common use cases, each with 50% awareness among researchers. "Image generation for data augmentation" and "Simulation and modelling for complex systems" are the third most common, with (42.3%) use for each. "Art and creativity generation for research" is the fourth most well-known use case, with 32.7%. This suggests that a very small portion of researchers possess knowledge about the application of Generative AI in creating art and creative content

for research purposes. Finally, only 25% of researchers knew about the use of generative AI in "Music and audio generation for research". This suggests that the application of Generative AI in music and audio generation for research purposes is less well-known compared to the other use cases presented in the table.

**Table 8: Awareness of Generative AI Applications in Research (n=52)**

| S. No. | Use Case | Responses | Percentage |
|---|---|---|---|
| 01 | Text generation for literature reviews | 26 | 50.0 |
| 02 | Image generation for data augmentation | 22 | 42.3 |
| 03 | Music and audio generation for research | 13 | 25.0 |
| 04 | Data synthesis and augmentation | 35 | 67.3 |
| 05 | Natural language understanding | 26 | 50.0 |
| 06 | Art and creativity generation for research | 17 | 32.7 |
| 07 | Simulation and modelling for complex systems | 22 | 42.3 |
| 08 | Drug discovery and molecular design | 26 | 50.0 |

**Source:** Author's own work. *Multiple answers are permitted*.

### 7.2.9 Awareness Level of Generative AI Use

Data in the Figure 5 reveals that out of the 52 participants, the majority had some level of awareness about the different applications of generative AI. However, a significant knowledge gap remains, with 16 (30.8%) research scholars being either unaware of or only having heard of the use cases, without any personal experience. The relatively low percentage of participants who were very aware indicates a need for increased education and awareness-building regarding the diverse applications of generative AI technologies.

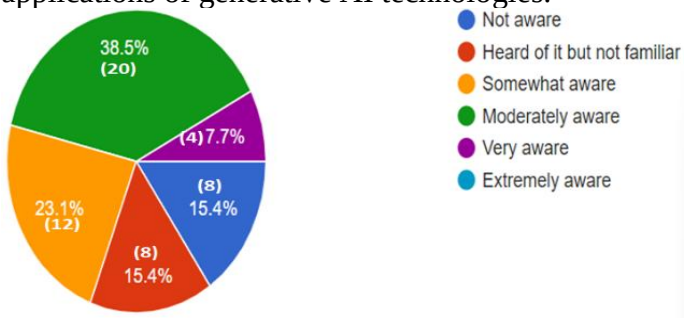


**Figure 5: Awareness Levels of Generative AI Use (n=52)**

**Source:** Author's own work.

## 8 FINDINGS & DISCUSSION

The Study findings reveal a significant gap between the recognition of ethical principles connected to generative AI and their application by research scholars at University of Delhi. While majority of scholars (77%) appreciate moral principle including human rights, transparency and privacy. only a small percentage (7.7%) apply them while using generative AI in their research. This disparity demands for more effective education and formal training on AI that can integrate ethical awareness and practical application. The fact that only (30.7%) of research scholars are aware of international guidelines for AI research ethics. While an overwhelming (92.3%) research scholars lack formal knowledge in this area which shows a systematic failure of institutional mechanism to integrate ethics education within course work programs.

Despite research scholars acknowledge the potential benefits of Generative AI in areas such as language understanding (50%), text generation (50%), data synthesis and augmentation (66.7%) and drug discovery (50%) still the ethical implications have received little to no attention. The significant positive response from the research scholars for participating in seminars and training programs on the ethical usage of generative AI in research shows the scope for institutions to improve their research support mechanism. Organising structured training can mitigate the risk of AI misuse and help in cultivating a responsible research environment. Over all the study found that ethical awareness alone is insufficient without accompanying institutional support to inculcate the best practices for the use of AI in research. This study further underlines the significance of Bridging the gap between ethical awareness and implementation to ensure that the rapid technological advancements in AI must accompanied by equally robust ethical norms within the academic research community.

## 9 CONCLUSION

The study found a considerable gap in ethical awareness and formal training on Generative AI among University of Delhi research scholars. While many scholars recognise the significance of

ethical values, such as human rights and transparency, only a few are actually putting these principles into practice. This highlights the critical need for systematic ethical, education and institutional support to encourage the proper use of Generative AI in academic research. Bridging this gap can help in creating an environment of more ethically accountable innovation and greater transparency in research.

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