FAST INDIA

National Survey on Scientific Awareness and Engagement

Science Perception, Literacy, and Career Aspirations of STEM Students in India

Foundation for Advancing Science and Technology (FAST India)

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Executive Summary

The survey aimed to understand the interest of STEM students[1] in science and technology (S&T) – their influences, levels of scientific engagement, and their ways of consuming scientific information. This led us to then examine the exposure to scientific research of the respondents[2] and their perception of S&T in India, followed by their awareness of scientific advancements and their preferences on the STEM careers they wish to pursue. Finally, the survey measured the level of scientific literacy of the respondents on scientific facts and commonly held scientific disbeliefs.

1. General Interest in Science

- "*Personal curiosity and passion*" along with "*Good science teachers in school*" are considered the most important factors influencing interest in science and technology (S&T) by 86% and 87% of STEM undergraduate students respectively. "*Peers*" are rated lower, at 74%.
- An intriguing trend shows strong multidisciplinarity interest, with science undergraduate students interested in technology and engineering and technology undergraduate students interested in sciences.
- Science students seek out scientific information and engage in discussions more often than engineering and technology students. Additionally, science undergraduate students question their professors more frequently compared to engineering and technology undergraduate students.
- "*Social media platforms*" and "*Streaming platforms*" have emerged as the primary sources for S&T-related information among STEM undergraduate students. Conversely, "*Conversations with peers*" and "*Interactions with experts*" are less preferred primary sources.

2. Exposure to Scientific Research

- Exposure to scientists is notably low, particularly for engineering and technology undergraduate students; only 17% have heard or met an Indian scientist, compared to 43% of science students.
- Almost 30% of respondents stated it was difficult to access scientific journals or papers.
- Engagement in research work and reading scientific papers differs starkly between groups; 62% of science undergraduate students have undertaken

[1] Throughout this report, "*STEM*" denotes Science, Technology, Engineering, and Mathematics. Additionally, "*students*" comprise of individuals pursuing either Undergraduate, Postgraduate, or PhD/Postdoc in a STEM field.
[2] "Respondents" include undergraduate, postgraduate, PhD, and Postdocs students combined.

research work compared to 27% of engineering and technology undergraduate students. Similarly, 50% of science undergraduate students have read a peer -reviewed paper versus 28% of engineering and technology undergraduate students.

- Publishing in scientific journals is uncommon; 90% of STEM undergraduate and postgraduate students have never published.

3. Perception of Science and Technology

- The survey found high trust towards Indian scientists and scientific organisations, with 64% stating they "*completely trust*" or "*mostly trust*" them.
- STEM students perceive India as doing well in "*Space research*", "*Medicine/healthcare*", and "*Agricultural research*". They perceive India as not doing as well in "*Earth/environmental science*" and "*Basic science research*".
- "*Engineers*" and "*Scientists*" are the professions rated highest for their contribution to the well-being and development of society by students, whereas "*Sportspersons*" and "*Artists*" are rated lower.

4. Awareness of Science and Technology

- There is high confidence among STEM undergraduate students in their ability to understand S&T concepts, with 62% stating they are "*very*" or "*somewhat*" confident in their ability to understand scientific concepts and research findings.

5. STEM Careers

- "*Industry core-engineering roles*" are the most preferred career path by STEM undergraduate students, followed by "*Entrepreneurship*" and "*Academic research*". "*S&T policy research*" is the least preferred.
- STEM undergraduate students report a high level of awareness of a career in "*Teaching*" and "*Science Communication*", with 41% and 35% being "*extremely*" or "*moderately*" aware of a career in them, respectively.

6. Science Literacy

- In science literacy, a substantial majority of STEM undergraduate students hold scientifically incorrect beliefs. More than one-third incorrectly believe that 'people can move objects with the mind', 'planetary waves influence personality', the 'law of conservation of energy shows evidence of rebirth', and that 'AI can do everything humans can'.

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Introduction

The understanding of public perceptions of science and technology (S&T), familiarity with scientific research ecosystem, and exposure to scientific information and activities offer insights into how people engage with science. Towards this end, the Foundation for Advancing Science and Technology (FAST India) conducted an online survey between October 2024 and February 2025 to assess the various facets of S&T ecosystem gauging the perception, understanding, and engagement among STEM students.

The survey underpinning this report explores, inter alia, the factors that spark and maintain interest in S&T, examines the interdisciplinary perspectives held by students, and investigates how the students seek, share, and critically evaluate scientific knowledge. It sheds light on what are the enablers, barriers, and opportunities in STEM education and science communication in India, allowing for the development of appropriate policy and programmatic interventions to bridge the science and society gap.

Additionally, the information ecosystem of the 21st century has accelerated the widespread dissemination of misinformation about science[3]. As such, our survey also provides insights on the knowledge of the respondents about commonly held scientific beliefs and misbeliefs.

The survey respondents comprised of undergraduate, postgraduate, and doctoral students pursuing a STEM field. The report analyses their responses and presents the findings across the following six broad sections:

I. General Interest in Science

II. Exposure to Scientific Research

III. Perception of Science and Technology

IV. Awareness of Science and Technology

V. STEM Careers

VI. Science Literacy

[3] National Academies of Sciences, Engineering, and Medicine. 2025. *Understanding and Addressing Misinformation About Science.* Washington, DC: The National Academies Press. https://doi.org/10.17226/27894.

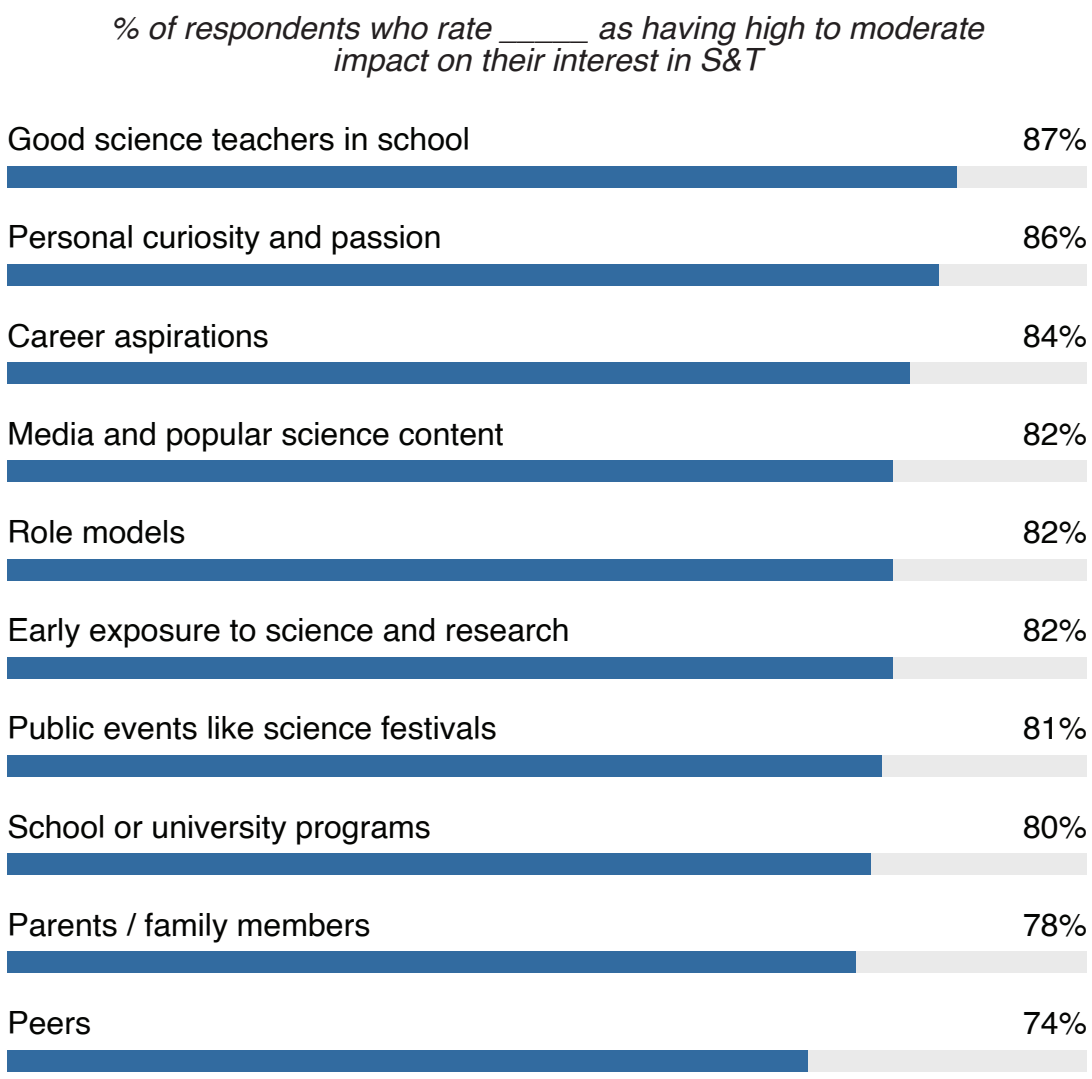
Section I:

General Interest in Science

The Genesis of Scientific Inclination: What Fuels a Budding Scientist?

The survey respondents were required to rate each factor shown in Figure 1 on the impact it has on their interest in S&T. 87% and 86% of undergraduate students rated "*Good science teachers in school*" and "*Personal curiosity and passion*" as a positive influence ("*high influence*" or "*moderate influence*") on their interest in S&T, respectively. In comparison, "*Peers*" and "*Parents/family members*" are rated low with 74% and 78% of undergraduate students rating them as having a positive influence. This suggests that undergraduate students believe that their interest is largely self-driven, as opposed to being influenced by their family members and peers.

Fig. 1. Good science teachers and personal curiosity and passion are the most important factors impacting a STEM undergraduate student's interest in S&T



Assessing Multi-disciplinary: Is students' curiosity bridging science and engineering?

An intriguing trend observed is the strong multi-disciplinarity interest – science undergraduate students show a keen interest in technology, while engineering and technology undergraduate students exhibit an enthusiasm for the sciences. 78% of science undergraduate students are interested in AI, semiconductors, etc., while 78% of engineering and technology undergraduate students are interested in the sciences (See Table 1 below). It is promising to note that students are aware of the inherent interdisciplinarity between the two disciplines.

Table 1. Engineering and science undergraduate students indicated interest in each other's disciplines

% of respondents who say that they are very or moderately interested in the _____

Response	Engg & Tech*	Sciences
Technology (e.g., AI, semiconductors)	**80%**	**78%**
Sciences (eg. physics, biology)	**78%**	**92%**

*Note: *For the purpose of this report, hereafter, 'Engg & Tech' is used as a shorthand for 'Engineering and Technology'.*

The Pursuit of Scientific Understanding: Seeking, Sharing, and Scrutinising Knowledge

Our survey finds that science undergraduate and postgraduate students report greater critical thinking skills compared to engineering and technology students, primarily demonstrated by a higher rate of questioning their science teachers/professors and the course material (See Table 4 below). Additionally, compared to engineering and technology students, science students[4] tend to show a greater interest in their subject and engage more holistically with their discipline (See Table 2 below). This holistic engagement includes seeking out scientific information more frequently and showing a greater interest in scientific topics beyond their coursework (See Table 3 below).

[4] Unless specified otherwise, "engineering and technology students" and "science students" include undergraduate, postgraduate, PhD, and Post-docs students combined.

Table 2. Science students seek out for scientific information more frequently than engineering and technology students

% of respondents who seek out scientific information or news

Response	Engg & Tech	Sciences
Daily + Weekly	**45%**	**76%**
Monthly	**18%**	**13%**
Never + Rarely	**37%**	**11%**

Table 3. Science students engage in discussions on scientific topics much more frequently than engineering and technology students

% of respondents who engage in discussions about scientific topics with family, friends, and colleagues

Response	Engg & Tech	Sciences
Very often	**16%**	**41%**
Occasionally	**33%**	**39%**
Never + Rarely	**51%**	**20%**

Table 4. Undergraduate and postgraduate science students question their professors more frequently than engineering and technology students

% of respondents who question what their science teachers/professors teach them in class

Response	Engg & Tech	Sciences
Very often + Often	**35%**	**55%**
Occasionally	**36%**	**34%**
Never	**29%**	**11%**

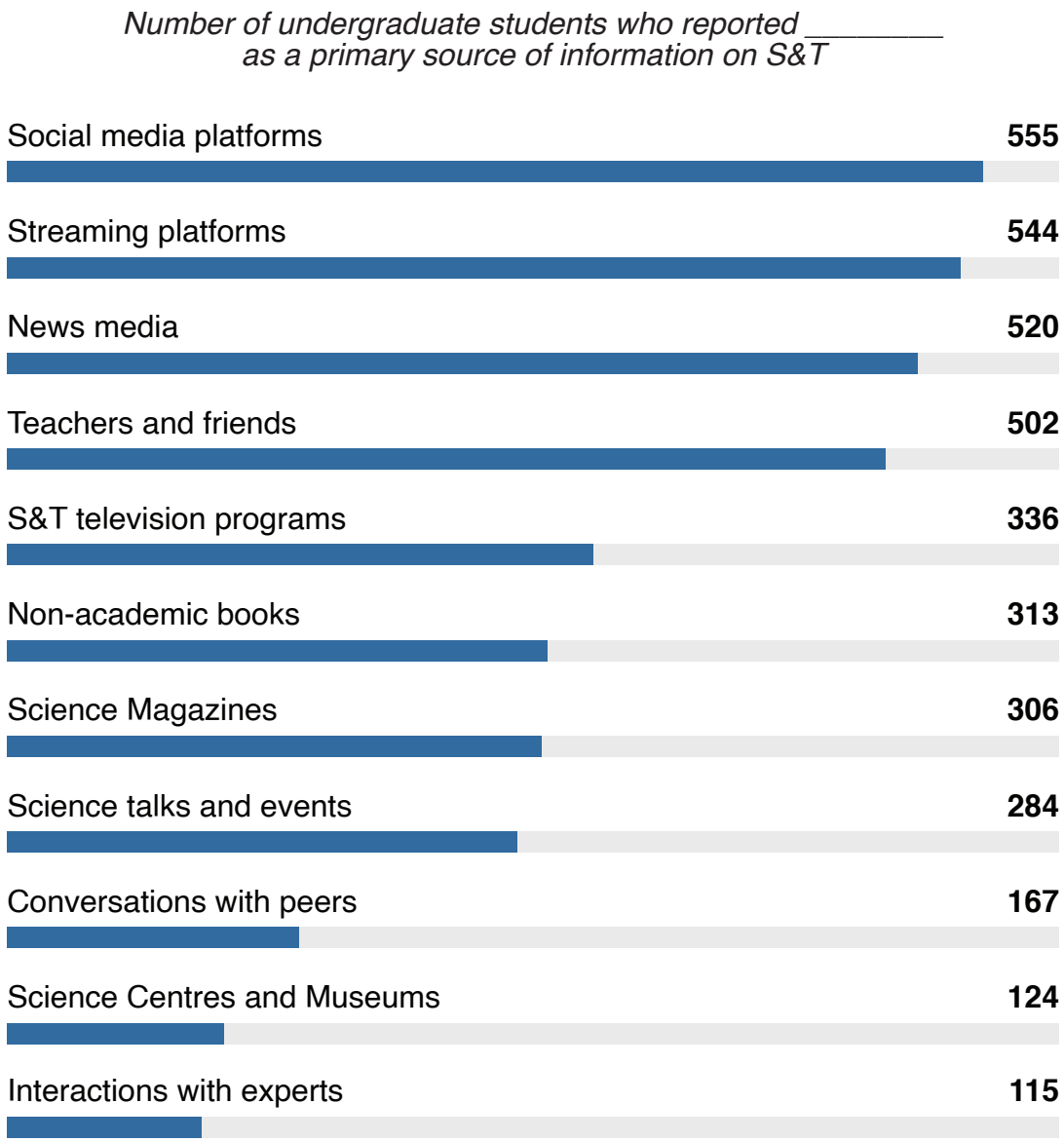
Immersing in the Scientific Narrative: Engaging with Science Beyond Formal Learning

Our study investigates the primary sources utilised by undergraduate students for obtaining S&T-related information. The results suggest a slightly higher preference

among the students for "*Watching films*" (63%) compared to "*Reading books*" (56%). The analysis identifies "*Social media platforms*" and "*Streaming platforms*" as the primary sources for S&T-related information (See Fig. 2 below). On the other hand, "*Conversations with peers*", "*Science Centres and Museums*", and "*Interactions with experts*" are reported as among the least preferred sources for undergraduate students.

While this shift suggests that science is becoming more accessible and increasingly part of public consciousness, it may also point towards a possible cause for the rise of misinformation and an incomplete understanding of complex scientific concepts. There is a need to strengthen community-driven avenues—such as peer dialogue and expert engagement—for sharing S&T information.

Fig. 2. Social media platforms and streaming platforms emerge as the top sources of S&T information



Section II:

Exposure to Scientific Research

Access to Science: How much exposure do students have to scientists and scientific research?

Only 17% of engineering and technology undergraduate students have heard from or met an Indian scientist, and 10%, a foreign scientist. In comparison, 43% of science undergraduate students have heard from or met an Indian scientist, and 26%, a foreign scientist (See Table 5 below). Additionally, almost 30% of overall respondents[5] stated that it was difficult for them to access a scientific journal or paper. This could be due to universities not having adequate subscriptions to scientific journals and databases. Improving the ease of accessing scientific research is crucial to enable students to engage in scientific research.

Table 5. Less than 20% of engineering and technology undergraduate students have met or heard from a scientist

% of respondents who have met or heard from an Indian/Foreign scientist/researcher in-person

Response	Engg & Tech		Sciences	
	Indian Scientist	Foreign Scientist	Indian Scientist	Foreign Scientist
Yes	**17%**	**10%**	**43%**	**26%**
No	**57%**	**71%**	**47%**	**66%**
Maybe	**26%**	**19%**	**11%**	**8%**

Note: Due to rounding, column totals may not sum to 100%.

STEM Student Engagement in Scientific Research

There is a stark difference in the engagement of scientific research between the groups surveyed. 24% of engineering and technology undergraduate students reported that they had undertaken research work as a part of their curriculum/ internships. In contrast, 42% of science undergraduate students reported to have undertaken research work (See Table 6 below).

[5] "Overall respondents" include Undergraduate, Postgraduate, and PhD/Postdocs combined.

Table 6. Science undergraduate students undertake research work much more frequently as compared to engineering and technology undergraduate students

% of respondents who have undertaken research work as a part of their curriculum/internships

Response	Engg & Tech	Sciences
Yes	**24%**	**42%**
No	**76%**	**58%**

Moreover, science undergraduate students also reported having read scientific papers much more frequently than engineering and technology students. 50% of science undergraduate students stated that they had read a peer-reviewed scientific paper, as compared to 28% of engineering and technology undergraduate students (See Table 7 below). Additionally, 44% of engineering and technology postgraduate and PhD students combined state that they haven't read a journal article.

Table 7. Less than one-third of engineering and technology undergraduate students have read a peer-reviewed scientific paper

% of respondents who have read a peer reviewed scientific paper

Response	Engg & Tech	Sciences
Yes	**28%**	**50%**
No	**72%**	**50%**

Our survey finds that STEM undergraduate and postgraduate students publishing in research journals is not very common. 90% of the group has not published in a research journal (See Table 8 below). These findings suggest that publishing in research journals is a rarity at the undergraduate and postgraduate level.

Table 8. STEM undergraduate and postgraduate students rarely publish papers in research journals

% of respondents who have published a paper in a research journal

Response	Total of undergraduate and postgraduate students
Yes	**10%**
No	**90%**

Section III:

Perception of Science and Technology

Trust in Indian Scientists and Organisations: How high is the confidence among STEM students?

Table 9 illustrates the trust that STEM students have towards Indian scientists and scientific organisations. Our survey finds that there is generally a high trust towards scientists in India, with 64% stating they "*completely trust*" or "*mostly trust*" them, which corroborates a 2020 report of the Pew Research Center[6]. Only 4% of respondents state that they "*completely distrust*" or "*mostly distrust*" Indian scientists and scientific organisations.

Table 9. There is high trust in Indian scientists and scientific organisations among STEM students

% of respondents who trust information provided by Indian scientists and scientific organisations

Response	Total*
Completely trust + Mostly trust	**64%**
Neutral	**32%**
Mostly distrust + Completely distrust	**4%**

*Note: *Total refers to all the respondents of our survey – including all engineering & technology and science students.*

India's Science Outreach: How effective is it in reaching the public?

As shown in Table 10, only 18% of respondents believe that the current efforts to popularise science in India are "*very effective*" in reaching out to the general public and explaining complex scientific ideas. A large majority of the respondents are neutral ("*somewhat effective*", "*neutral*", or "*somewhat ineffective*") about the current science communication efforts. This finding suggests that while the science communication efforts in India are yielding some positive results, there is still a long way to go for the efforts to effectively impact STEM students.

[6] Pew Research Center, Sept. 2020, "Science and Scientists Held in High Esteem Across Global Publics"

Table 10. The majority of the respondents are neutral about the effectiveness of the efforts to popularise science in India

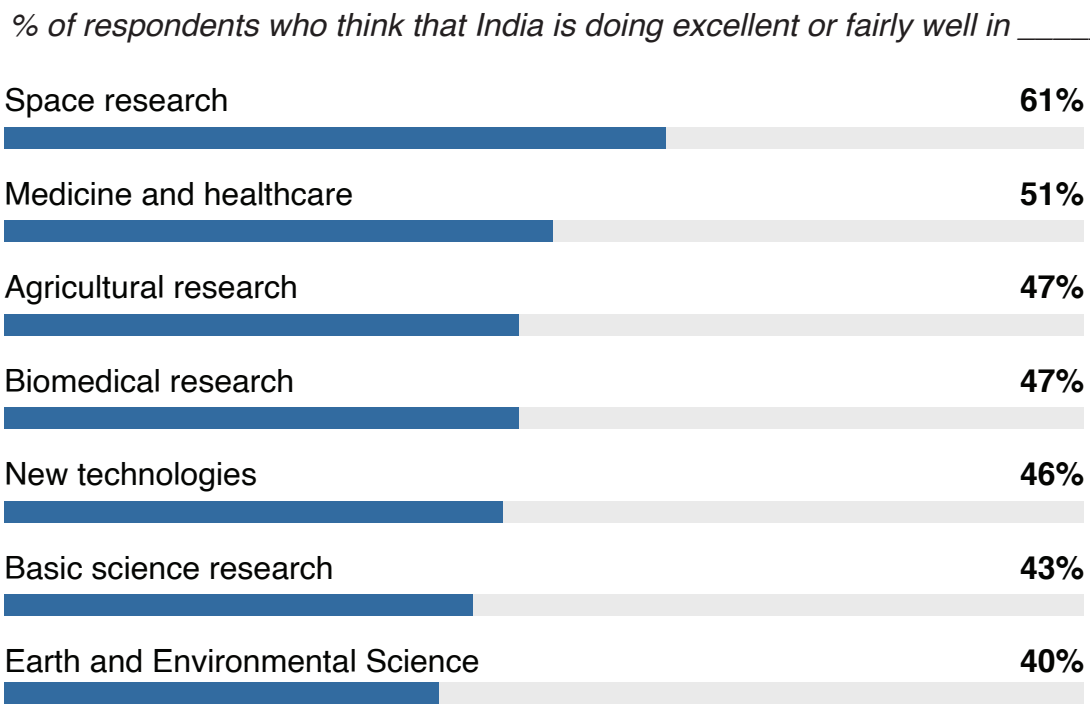
% of respondents who think the current efforts to popularise science in India are effective in reaching out to the general public and explaining complex scientific ideas

Response	Total
Very effective	**18%**
Somewhat effective + Neutral + Somewhat ineffective	**76%**
Very ineffective	**6%**

India's Science Landscape: Which sectors are thriving according to the STEM students?

The survey respondents were asked to rate India's performance on each of the research areas in Figure 3. A majority, 61%, of respondents think that India is doing "*excellent*" or "*fairly well*" in "*Space researc*h". Following closely is "*Medicine and healthcare*" (51%) and "*Agricultural research*" (47%). In contrast, a smaller proportion of respondents think that India is doing well in "*Earth and environmental science*" and "*Basic science research*" (40% and 43% respectively).

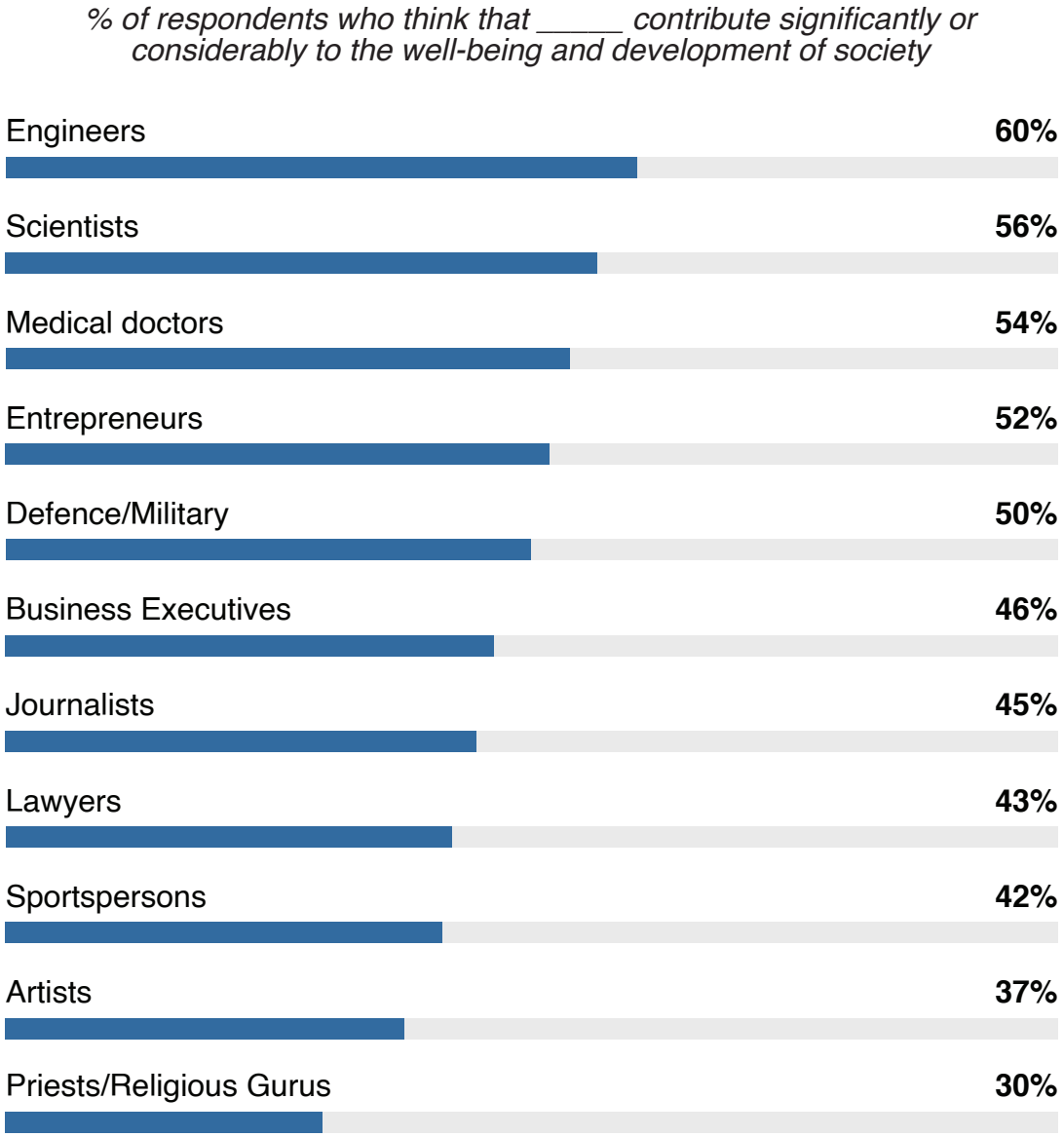
Fig. 3. STEM students believe India is doing well in space research and poorly in basic science research



Societal Impact: Which professions do STEM students believe contribute the most?

Survey respondents were asked to rate each of the professions in Figure 4 on their societal impact. 60% of STEM undergraduate students believe "*Engineers*" contribute "*significantly*" or "*considerably*" to the well-being and development of society, more than any other profession. "*Scientists*" follow closely at 56%, indicating that engineers and scientists are held in high esteem by STEM undergraduate students for their societal impact. "*Medical doctors*" and "*Entrepreneurs*" follow next with 54% and 52% respectively. On the other hand, "*Sportspersons*" (42%), "*Artists*" (37%), and "*Priests/religious gurus*" (30%) rank lowest for their contribution to society.

Fig. 4. STEM undergraduate students value the role that engineers and scientists play in the development of society



Section IV:

Awareness of Science and Technology

Comprehending Scientific Research: How do students rate their ability to comprehend science?

A clear majority of STEM undergraduate students (62%) report feeling confident ("*very confident*" or "*somewhat confident*") in their ability to understand scientific concepts and research findings (See Table 11 below). However, the level of confidence differs notably between the groups surveyed. Respondents in the sciences field demonstrate a considerably higher level of confidence, with 74% stating they are confident.

In contrast, those in engineering and technology are less confident than their counterparts in sciences, with 51% reporting confidence. Furthermore, the engineering and technology group has a significantly larger proportion of individuals who are "*neutral*" (42%) regarding their confidence compared to the sciences group (21%).

Table 11. High confidence among STEM undergraduate students in their ability to understand S&T concepts

% of respondents who are _____ in their ability to understand scientific concepts and research findings

Response	Engg & Tech	Sciences	Total
Very confident + Somewhat Confident	**51%**	**74%**	**62%**
Neutral	**42%**	**21%**	**32%**
Not very confident + Not confident at all	**7%**	**5%**	**6%**

How do students rate their awareness of the latest advancements in science and technology?

40% of STEM undergraduate students rate their awareness of the latest advancements in S&T as "*very high*" or "*high*". A majority (51%) rate their awareness as "*average*", whereas a small minority (9%) report low awareness ("*very low*" or "*low*"). There is not much difference observed in the responses of engineering and technology undergraduate students and science undergraduate students. Overall, it is encouraging that a significant proportion of STEM undergraduate students report a high level of awareness of advancements in S&T. This trend may, in part, be attributed to the growing role of social media platforms and streaming services as accessible sources of S&T information.

Table 12. Vast majority of STEM undergraduate students believe they have an average or above average awareness of the latest advancements in S&T

% of respondents who rate their awareness of the latest advancements in S&T as _____

Response	Engg & Tech	Sciences	Total
Very high + High	**39%**	**41%**	**40%**
Average	**51%**	**52%**	**51%**
Very low + Low	**10%**	**8%**	**9%**

Section V:

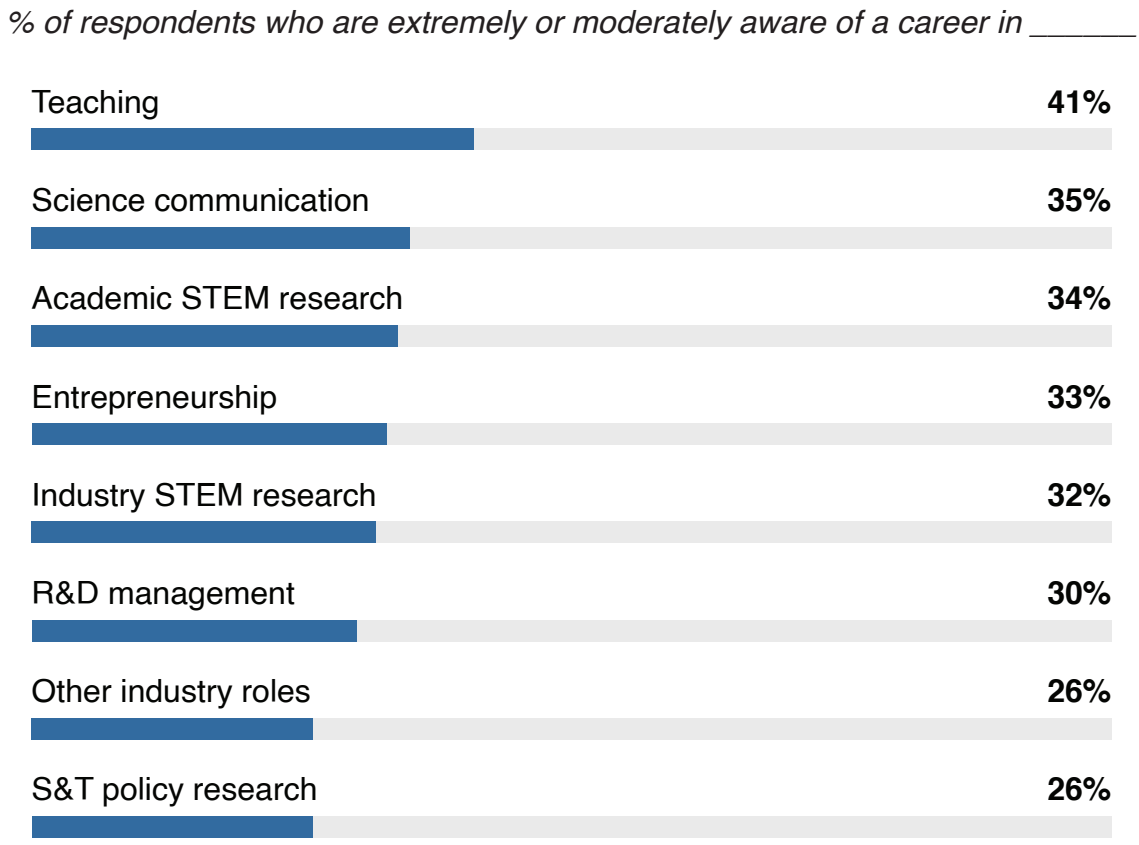
STEM Careers

Awareness of Careers: How aware are STEM students of various career paths?

STEM undergraduate students were asked to rate their awareness of career options in each of the careers listed in Figure 5. "*Teaching*" is the career path that the highest percentage of respondents (41%) are "*moderately*" or "extremely aware" of. Following closely is "*Science communication*" (35%) and "*Academic STEM research*" (34%).

The least awareness is reported for "*R&D management*" (26%) and "*S&T Policy Research*" (23%). This indicates that while academic and science communication roles have moderate awareness, careers in science policy and less defined industry roles are comparatively less familiar to STEM undergraduate students.

Fig. 5. STEM undergraduate students report a high level of awareness of career in Teaching and Science Communication

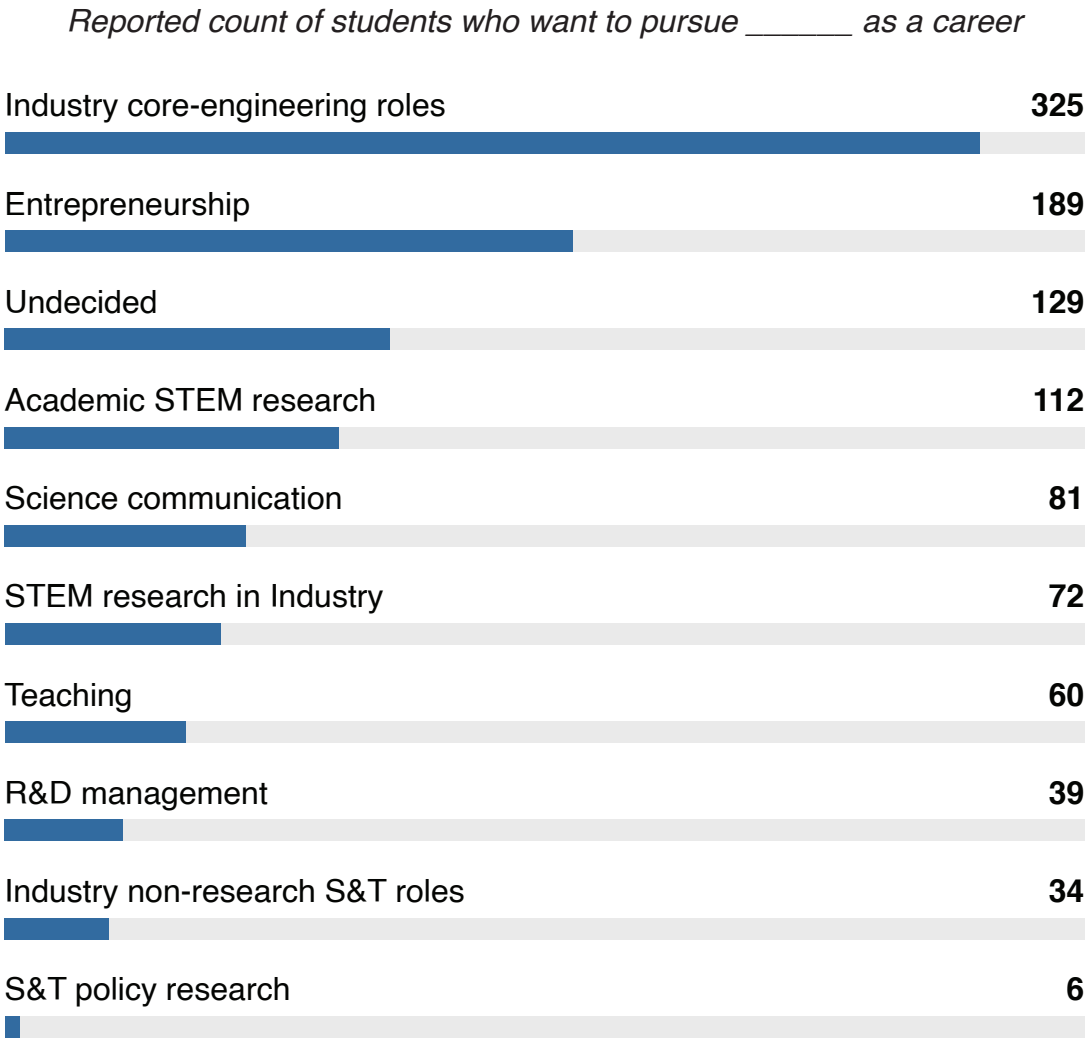


Career Aspirations: What careers do STEM undergraduate students want to pursue?

The Figure 6 illustrates career aspirations of STEM undergraduate students among various careers choices. The "*Industry core-engineering roles*" is the most sought-after, with a very strong preference, career path for the students. It is followed by "*Entrepreneurship*" and "*Academic STEM research*" roles.

The least preferred career path is reported for "*Industry non-research S&T roles*" and "*S&T policy research*" roles. This distribution indicates a strong inclination towards core engineering roles and entrepreneurship, with less interest in academic, policy, or non-core industry S&T roles.

Fig. 6. Core engineering roles in industry and entrepreneurship are the top career choices for STEM undergraduate students



Section VI:

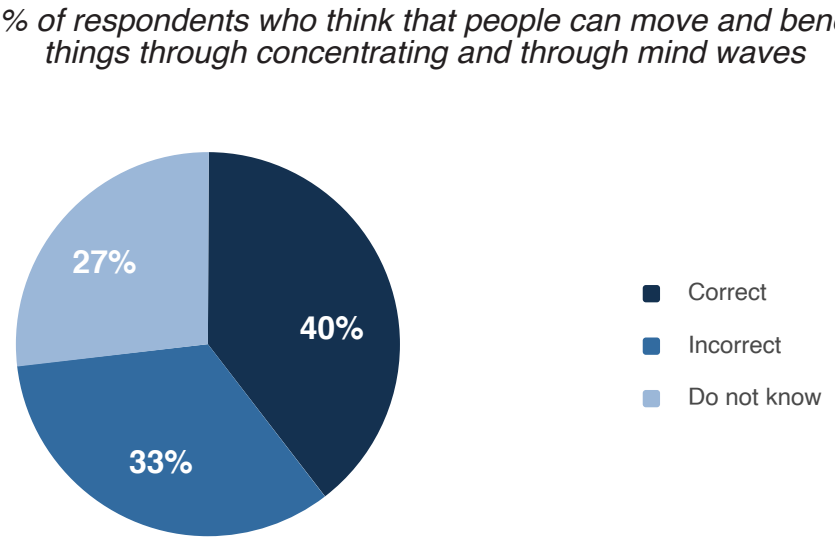
Science Literacy

Pseudoscience: How prevalent are superstitious beliefs?

Based on the Figure 7 showing STEM undergraduate students' beliefs about the "*ability to move and bend things through concentrating and mind waves,*" a notable proportion (33%) hold incorrect beliefs regarding this concept. 40% believe the statement is false, which is a scientifically accepted stance. 33% incorrectly believe it to be true, suggesting a significant level of belief in concepts not supported by scientific evidence.

Furthermore, 27% indicated that they "*Do not know,*" highlighting a knowledge gap or uncertainty on this topic. This suggests that a substantial majority (60%) either hold a scientifically incorrect belief or are unsure about the ability to move objects with the mind.

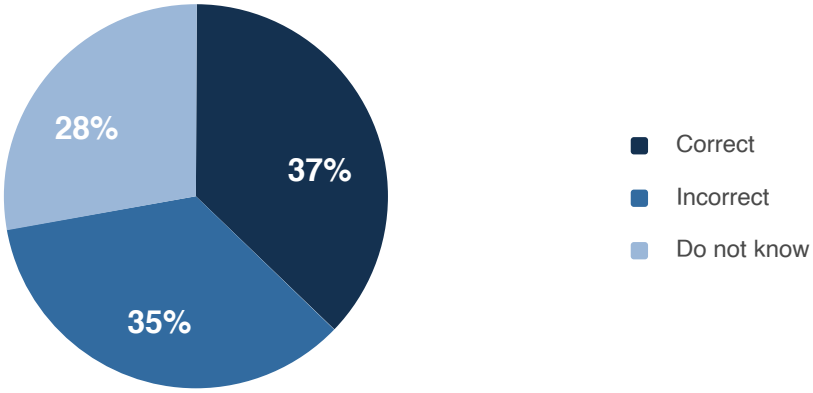
Fig. 7. One-third of STEM undergraduate students think that people can move and bend things through concentration and through mind waves



The Figure 8 shows STEM undergraduate students' beliefs about the "*waves from planets at the time of birth influences personality,*" a notable proportion (35%) believed it to be true. 37% believe the statement is false, which is a scientifically accepted stance. 28% indicated that they "*Do not know,*" highlighting a knowledge gap or uncertainty on this topic. This suggests that a substantial majority (63%) either hold a scientifically incorrect belief or are unsure about the influence of waves from planets at the time of birth.

Fig. 8. More than one-third of STEM undergraduate students think that waves from planets at the time of birth influences personality

% of respondents who think that the waves from planets at the time of birth influences personality



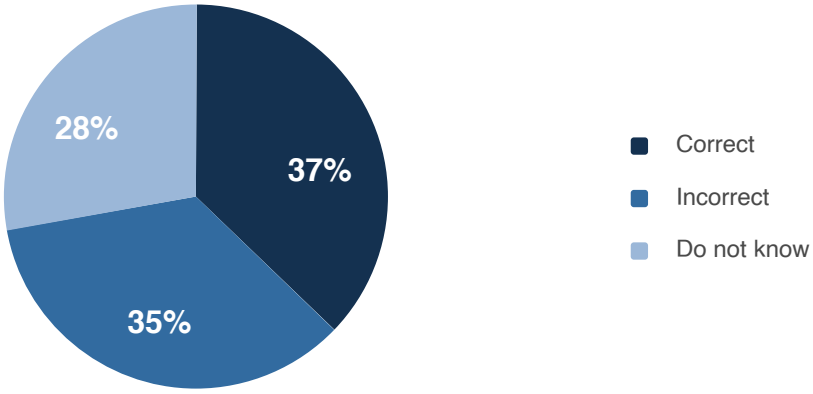
Understanding Scientific Evidence: Can STEM students evaluate scientific evidence?

Based on the Figure 9 showing STEM undergraduate students' beliefs about the "*law of conservation of energy shows evidence of rebirth,*" a notable proportion (35%) hold incorrect beliefs marking the statement as true. 37% correctly identified that statement to be false, which is a scientifically accepted stance.

Furthermore, 28% indicated that they "*Do not know,*" highlighting a knowledge gap or uncertainty on this topic. This suggests that a substantial majority (63%) either hold a scientifically incorrect belief or are unsure whether the law of conservation of energy shows evidence of rebirth.

Fig. 9. More than one-third of STEM undergraduate students think that the law of conservation of energy shows evidence of rebirth.

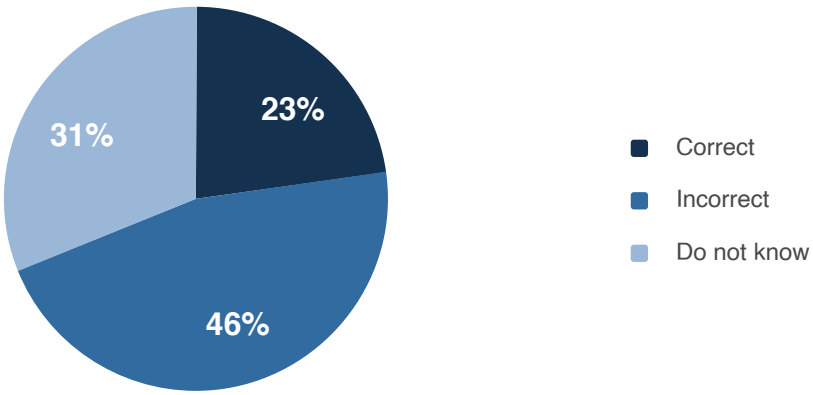
% of respondents who think that the law of conservation of energy shows evidence of rebirth



The Figure 10 showing STEM undergraduate students' beliefs about the "*evidence that there was a universe before the current universe and there will be more in the future,*" a notably large proportion (46%) believed that there is indeed accepted evidence for the statement, which is scientifically a false statement. Only 23% believe the statement is false, which is a scientifically accepted stance. Furthermore, 31% indicated that they "*Do not know*," highlighting a knowledge gap or uncertainty on this topic. This suggests that a substantial majority (77%) either hold a scientifically incorrect belief or are unsure about it.

Fig. 10. More than 45% of STEM undergraduate students think that there is accepted evidence that there was a universe before the current universe and there will be more in the future

% of respondents who think that there is accepted evidence that there was a universe before the current universe and there will be more in the future

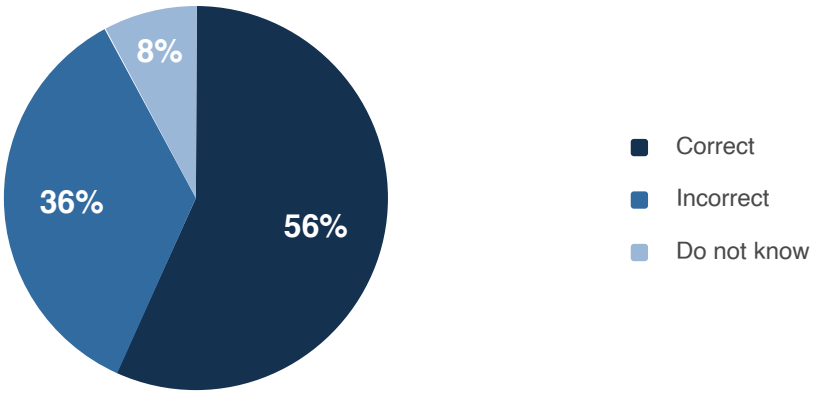


Popular Science: Are STEM students aware about popular science facts?

Based on the Figure 11 showing STEM undergraduate students' beliefs about the *ability of AI to do everything that human can,* a notable proportion (36%) hold incorrect beliefs regarding this concept. Majority (56%) believe the statement is false, which is a scientifically accepted stance. Yet, a large group, 36%, incorrectly believe this is true, suggesting a significant level of belief in concepts not supported by scientific evidence. Furthermore, only 8% indicated that they "*Do not know.*"

Fig. 11. More than one-third of STEM undergraduate students think that AI can today do everything that humans can

% of respondents who think that AI can today do everything that humans can

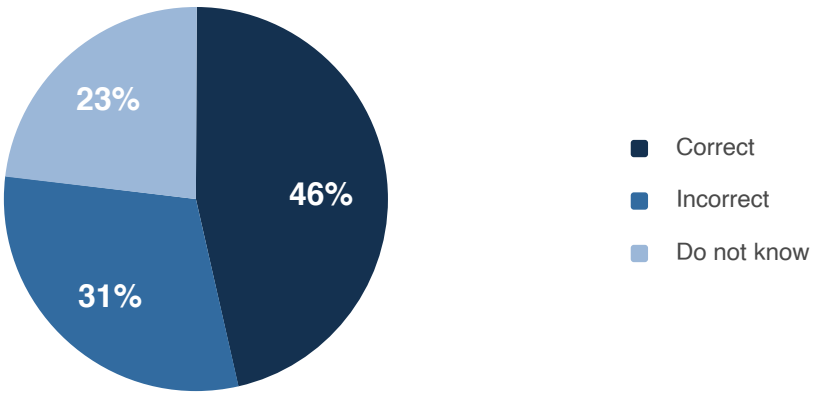


Based on the Figure 12 showing responses for "*who think we have sent objects beyond the Milky Way,*" a notable proportion (31%) hold incorrect beliefs regarding this concept. 46% believe the statement is false, which is a scientifically accepted stance. A large group, 31%, incorrectly believe this is true, suggesting a significant level of belief in concepts not supported by scientific evidence.

Furthermore, 23% indicated that they "*Do not know,*" highlighting a knowledge gap or uncertainty on this topic. This suggests that a majority (54%) either hold a scientifically incorrect belief or are unsure about it.

Fig. 12. Nearly one-third of STEM undergraduate students think that we have sent objects beyond the Milky Way

% of respondents who think we have sent objects beyond the Milky Way



Conclusion

The National Survey on Scientific Awareness and Engagement illustrates some indicative trends in STEM students' engagement with science, career choices, perception of science professionals and organisations, and their general scientific beliefs.

1. Science undergraduate students report higher levels of critical thinking and engagement with their subject outside their coursework. They also read research papers, undertake scientific research, and interact with scientists more frequently than engineering undergraduate students.

2. Core engineering roles in industry remains the most popular choice of a career for STEM undergraduate students, followed closely by entrepreneurship.

3. There is high trust in Indian scientists and scientific organisations among STEM students. When asked about the contribution of various professions in terms of their impact on society, STEM undergraduate students rated scientists and engineers the highest.

4. A large proportion of STEM undergraduate students hold incorrect scientific beliefs, despite reporting a high level of confidence in their ability to understand scientific concepts.

Our survey highlights that there is a need to inculcate a greater engagement with research in engineering undergraduate students. Engineering students participating more in research and having easier access to research resources will lead to greater innovation in emerging fields such as artificial intelligence, semiconductors, quantum technology, etc., which require an interdisciplinary knowledge of both engineering and science.

Further, there is an encouraging shift of STEM undergraduate students being interested in entrepreneurship. This trend is in line with India's rapid startup growth — with over 150,000 registered startups and over 100 unicorns, supported by government initiatives such as Start Up India, Digital India, and the Atal Innovation Mission[7]. It is imperative to build on this positive shift in attitude, and to cultivate an environment that encourages and enables entrepreneurship — particularly deep-tech entrepreneurship. Our survey also finds that Science Communication is gaining popularity as a career option among STEM undergraduate students. For example, there were more respondents interested in pursuing Science Communication than STEM research in industry as a career. The Science Communication community can capitalise on this growing interest and ensure that students are exposed to adequate opportunities and options.

[7] Press Information Bureau. India's Startup Revolution. Press Release. Ministry of Commerce & Industry, 1 Feb. 2025, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2098452

A worrying trend that emerged is the prevalence of scientific disbeliefs among the surveyed population. More than one-third of STEM undergraduate students believed that the law of conservation of energy showed evidence of rebirth and that AI can today do everything that humans can. It is worth noting that 62% of the same population stated that they are confident in their ability to understand scientific concepts and research findings. This suggests that at least some of the confidence that the respondents have is misplaced, and that there is a need to increase the science literacy levels of STEM undergraduate students.

We see this survey as serving as a useful tool for policymakers and educators, enabling them to focus their efforts on key challenges in STEM education in India. While the survey points out several concerns regarding STEM education, it also reveals encouraging insights into STEM students' perception of science. They show a high level of trust and respect towards scientists, value the role that science plays in society, and are cognizant of its importance in societal development. To realise the potential of this positive outlook, it is crucial that policymakers and educators act decisively to address the challenges identified and lay the foundation for a strong S&T ecosystem for India.

Appendix

Data and Methodology

Dissemination of Survey

The **National Survey on Scientific Awareness and Engagement** was conducted as an online survey, between October 2024 and February 2025. Administered by the Foundation for Advancing Science and Technology (**FAST India**), the survey was circulated through targeted email campaigns and social media posts via FAST India's official platforms. Purposive sampling was employed in disseminating the survey, with dissemination channels selected based on informed professional judgment concerning their potential to effectively reach the intended respondent group. These decisions were shaped by both strategic outreach objectives and practical limitations.

Data Cleaning and Analysis

The responses from individuals currently pursuing a Science, Technology, Engineering, or Mathematics (STEM) field at the undergraduate, postgraduate, PhD or Postdoc level was utilised for the analysis. The respondents were grouped into either 'Engineering and Technology' or the 'Sciences' based on the classification of the Indian Standard Classification of Education[8] (InSCED) by the Department of Higher Education, Government of India. Following the data cleaning, there were 1590 respondents in total, with 1220 responses from Engineering & Technology students, and 370 responses from Sciences students. The breakup of the undergraduate, postgraduate, PhD/Postdoc respondents is as follows:

Respondents	Engg & Tech	Sciences	Total
Undergraduate	**1106**	**155**	**1261**
Postgraduate	**82**	**107**	**189**
PhD/Postdoc	**32**	**108**	**140**

Given the unequal distribution of respondents between the 'Engineering and Technology' and 'Sciences' groups, equal weights are allocated to each group to control for sampling imbalance in the aggregated analysis. This approach ensured that neither group disproportionately influenced the overall distribution of responses, enabling a more balanced comparison across disciplines.

For each survey question, the relevant subset of respondents was selected based on the applicability of the question to specific discipline group(s). The overall sample was categorised into three cohorts: undergraduate students, postgraduate students, and PhD

[8] Refer here: https://www.education.gov.in/sites/upload_files/mhrd/files/statistics/InSCED2014_1.pdf

scholars/Postdoctoral researchers. Depending on the nature of each question, an appropriate cohort or a combination of them was chosen to ensure analytical relevance. The data presented in the report has been disaggregated accordingly, an attempt to yield meaningful and insightful interpretation.

The questionnaire for the survey can be found here:
https://www.fast-india.org/wp-content/uploads/2025/08/Questionnaire-National-Survey-on-Scientific-Awareness-and-Engagement-.pdf

FAST INDIA

National Survey on Scientific Awareness and Engagement

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