

Insights from the APAN58 REN Leaders Forum: Advancing NREN Capabilities with GenAI



The 58th Asia Pacific Advanced Network (APAN58) Meeting was held in Islamabad, Pakistan, from the 26th to the 30th of August 2024. Organised by the Pakistan Education & Research Network (PERN) and the Higher Education Commission of Pakistan, the event welcomed delegates and guests from around the world to the event for four days of meaningful discussions that would promote collaboration and contribute to sustainable societal well-being. This event marks the first time Pakistan is hosting a physical meeting of APAN. In today's digital world, APAN serves as a vital platform for researchers and technical experts from across the region to share insights and forge valuable partnerships.

APAN58 also featured a Special Interest Group (SIG), which facilitated a forum for REN leaders to exchange ideas and thoughts on the present trends, challenges, and opportunities faced by the REN communities. This 90-minute forum comprised a closed assembly of C-Level executives and decision-makers from RENs across the Asia-Pacific region. The NREN Leaders Forum was designed to facilitate high-level strategic deliberations among the leaders of National Research and Education Networks (NRENs) in the Asia Pacific (APAC) region. Thereby, serving as a platform to collectively address challenges and opportunities to empower researchers and academics across borders.

Capacity Building: Generative AI for NRENs



AP-GAINED: Asia Pacific - Generative AI Integration for NREN Enhancement and Development

Lanka Education And Research Network (LEARN)



Type

ISIF Asia Grants



Date

2024



Donor

APIDT



Economy

Sri Lanka



Amount

USD 150,000



Status

In Progress

National Research and Education Networks (NRENs) in Least Developed and Lower-Middle Income Countries often struggle to keep pace with technological advancements due to limited resources and capacity. The rise of Generative AI (GenAI) offers transformative potential, but many NRENs lack the expertise to harness it effectively. This digital divide hinders their ability to support cutting-edge research, education, and innovation within their communities.

The **AP-GAINED** project aims to:

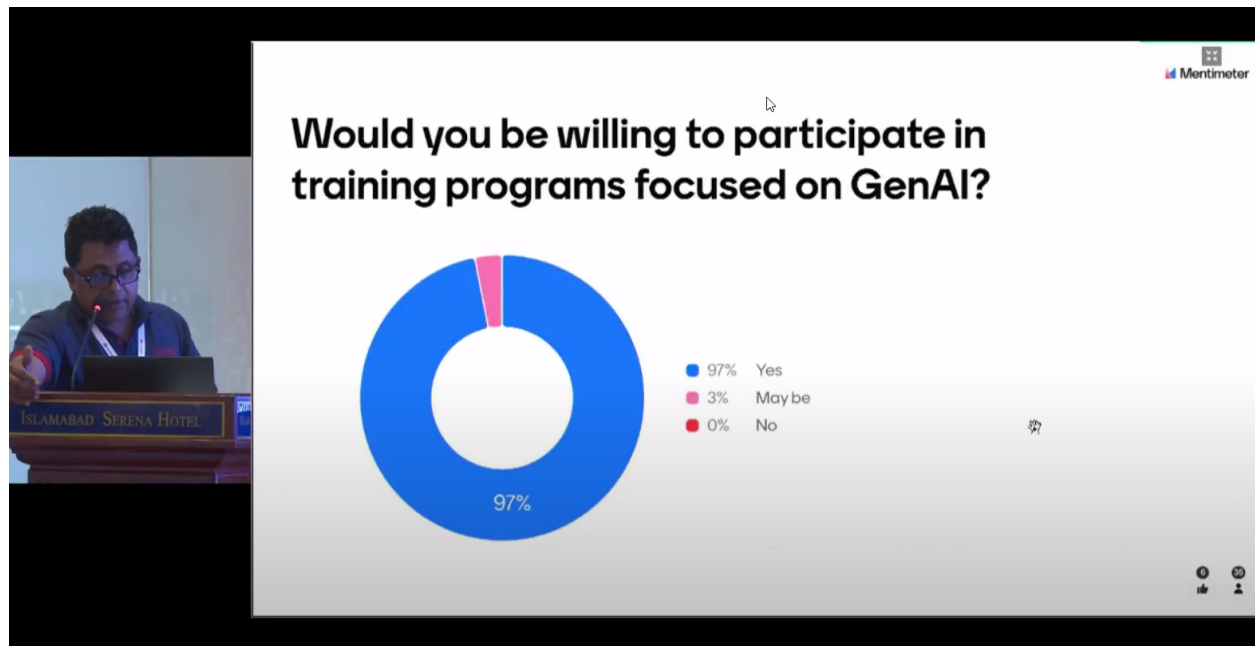
- Develop a comprehensive GenAI capacity development program tailored for NRENs, prioritizing the needs of resource-constrained institutions, while promoting gender equality and social inclusion.
- Deliver hands-on training and pilot projects to equip NREN staff with practical GenAI skills for network operations, NREN administration, research support, and educational outreach.
- Create open educational resources (OERs) to foster a collaborative community of practice and ensure sustainable knowledge transfer.
- Empower NRENs to leverage GenAI for automating tasks, gaining insights, and delivering innovative services that drive educational advancement and research breakthroughs in their countries.

An overview of the AP-GAINED project

One of the key focuses of the REN Leaders Forum was understanding how NRENs are utilising Generative AI (GenAI) to enhance their services and capabilities. Opening the discussion, the CEO of LEARN, Prof. Roshan Ragel, reflected on the discussions from the previous APAN57 meeting in Bangkok, where it was identified that there were no established training programs focused on GenAI. In response to this gap, LEARN has developed a proposal in collaboration with BdREN to address this issue through the AP-GAINED project.

This AP-GAINED initiative aims to build capacity by training NREN staff on the effective use of GenAI technologies. The project's first step involves identifying stakeholders' needs to develop a tailored curriculum. Already, the exploration has revealed that GenAI holds immense potential in sectors such as finance, education, healthcare, and agriculture, among others. During the discussion, the Chief Administrative and Finance Officer at BdREN, Dr. Mohammed Farooq Ali Tarafder emphasised the importance of training non-technical staff at NRENs. He highlighted the growing need for these staff members to be proficient in utilising cutting-edge technologies like GenAI to ensure smooth operations and broader impact across the sectors they support.

Key Findings: GenAI for NREN Empowerment survey



Dr. Asitha Bandaranayake - presenting the results of the survey at the APAN58 REN Leaders Forum

Subsequently, the CTO of LEARN, Dr. Asitha Bandaranayake, presented the results of a survey titled, “GenAI for NREN Empowerment,” which was conducted before the session among NREN personnel. The survey aimed to quantify the needs and challenges faced by the community across academic, technical, and administrative job roles, with a particular focus on the potential of Generative AI (GenAI) in enhancing their workflows. While the majority of the survey participants were from Pakistan, there was a diverse representation from other regions. Respondents held various roles, including engineers, administrative staff, management, academic staff, research personnel, and other positions. Most participants had been working at their respective NRENs for over a year.

One of the survey's primary objectives was to assess the daily challenges faced by NREN staff. It was found that most of their tasks required communication skills, followed closely by technical and administrative skills. However, a significant challenge was the limited support for research activities. The survey also highlighted that the majority of participants had engaged with ChatGPT and found it highly efficient for carrying out tasks such as report writing, proposal development, and creating educational content. Despite this, users reported inefficiencies in their daily or weekly use of the platform, suggesting room for improvement in their functionality.

Notably, the results showed that NREN staff are open to adopting new tools, with many identifying time savings as the key metric to measure the success of such technologies. Most rated their organisations to be moderately ready to integrate GenAI into their workflows and were confident that they would benefit from its adoption. However, the cost of GenAI tools emerged as the primary concern, presenting a barrier to widespread implementation. In terms of training, hands-on experience with GenAI tools at physical, in-person training sessions was the most requested form of AI education, with respondents preferring this over online options. Commenting on these findings, Dr. Bandaranayake called for a combination of physical and online learning opportunities to help NREN staff develop these skills.

Detailed survey results are included in the appendix at the end of this report.

Addressing common challenges faced by NRENs



Top (L to R): Dr. Chalernpol Charnsripinyo - President of ThaiREN, Prof. Roshan Ragel - CEO of LEARN. Bottom (L to R) - Mohammad Tawrit - CEO of BdREN, Dr. Mohammad Farooq Ali Tarafder - CAFO of BdREN.

The REN Leaders Forum at APAN58 addressed several critical challenges and opportunities in implementing GenAI across NRENs in the Asia-Pacific region. A key issue highlighted was the high cost of GenAI tools for academics. Another pressing need was for Large Language Models (LLMs) that support local languages, requiring substantial infrastructure and collaboration. Japan's comprehensive approach to AI provided valuable lessons, showcasing the role of academia in policy-making. Finally, ensuring the effectiveness of GenAI was discussed, emphasising the importance of accurate data for AI-generated insights and the need for leadership to guide automation efforts in alignment with NREN strategies. The discussions underscored the importance of collaboration, resource-sharing, and strategic leadership in maximising the benefits of GenAI.

Prohibitive costs of GenAI tools for academics

A significant challenge highlighted during the forum was the cost of GenAI tools for academics in the region. Prof. Ragel emphasised that the prohibitive cost of these tools was a serious issue, as confirmed by the survey findings. He shared that several member institutions of LEARN have already requested assistance in reducing these costs. To address this shared problem, Prof. Ragel proposed that regional NRENs, including LEARN, could explore the possibility of negotiating with GenAI service providers to establish a subsidised education subscription tier specifically for NREN member institutes. Thereby, enabling academic institutions to access the benefits of GenAI without being hindered by prohibitive costs.

Lessons from Japan's Approach to GenAI



Prof. Shinji Shimojo - Chairman of APAN, speaking at APAN58

During the discussion, valuable insights were shared from Japan's experience in developing comprehensive guidelines for the application of GenAI across different areas. Chairman of APAN, Prof. Shinji Shimojo, explained that Japan's focus on AI has been broad, encompassing not just the work of specific NRENs but also involving academia in shaping national AI policies. Universities in Japan have been actively involved in the process, utilising AI for creating educational content and streamlining administrative tasks. Prof. Shimojo also noted that the Japanese government is already exploring significant investments in large-scale computing facilities, aimed at developing LLMs that support the Japanese language.

Ensuring the effectiveness of GenAI

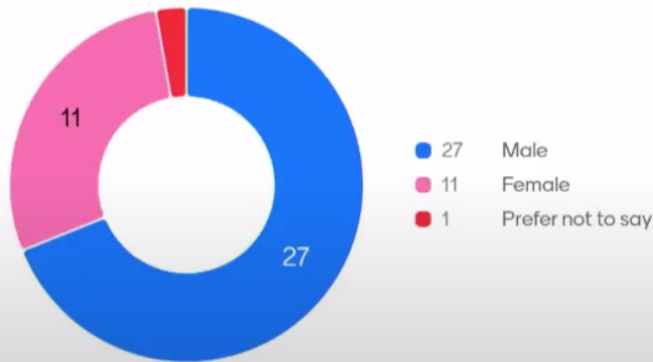
Towards the latter half of the discussion, the CEO of BdREN, Mohammad Tawrit, highlighted a critical factor in ensuring the effectiveness of GenAI: the accuracy of the data. Without accurate and reliable data, AI tools may struggle to provide correct insights or solutions, thereby limiting their usefulness. Dr. Bandaranayake added that the application of AI can be viewed from two perspectives. The first is using AI to generate valuable insights, which can assist NREN leaders in making informed, strategic decisions. The second is leveraging AI to automate repetitive tasks, a function particularly beneficial for NREN working professionals, allowing them to focus on more productive activities. However, Dr. Bandaranayake stressed that all applications of AI must align with the overarching vision set by the leadership. While working professionals can identify routine tasks, break them down, and suggest plans for automation, it is up to the leadership to ensure these efforts are aligned with the long-term goals of the NREN and its strategic direction.

Unlocking the potential applications of GenAI

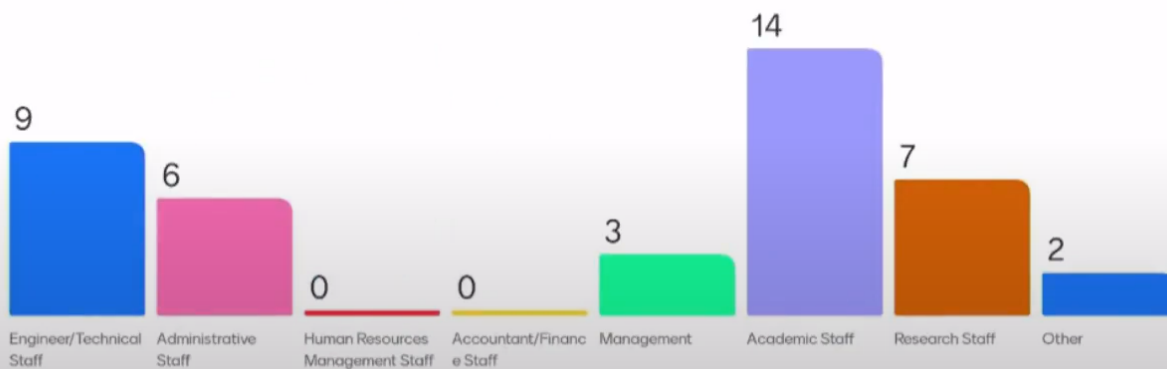


The APAN58 REN Leaders Forum highlighted the transformative potential of GenAI for NRENs in the Asia-Pacific region. It underscored the importance of capacity building as a key driver in the successful adoption of the technology across the region. Thus, collaborative efforts such as the AP-GAINED project by LEARN and BdREN are poised to address the need for targeted training programmes that will equip NREN personnel with the skills to harness GenAI capabilities. The survey results reinforced this by revealing that staff are eager to adopt new tools and to bridge the knowledge gap between technical and non-technical roles. While the discussions highlighted challenges such as the cost of GenAI tools and the need for local language support remain pressing, they also spotlighted the potential of GenAI in improving workflows, enhancing decision-making, and automating repetitive tasks. By fostering collaboration among regional NRENs, there is a significant opportunity to pool resources and knowledge, ultimately improving academic and research communities across the region.

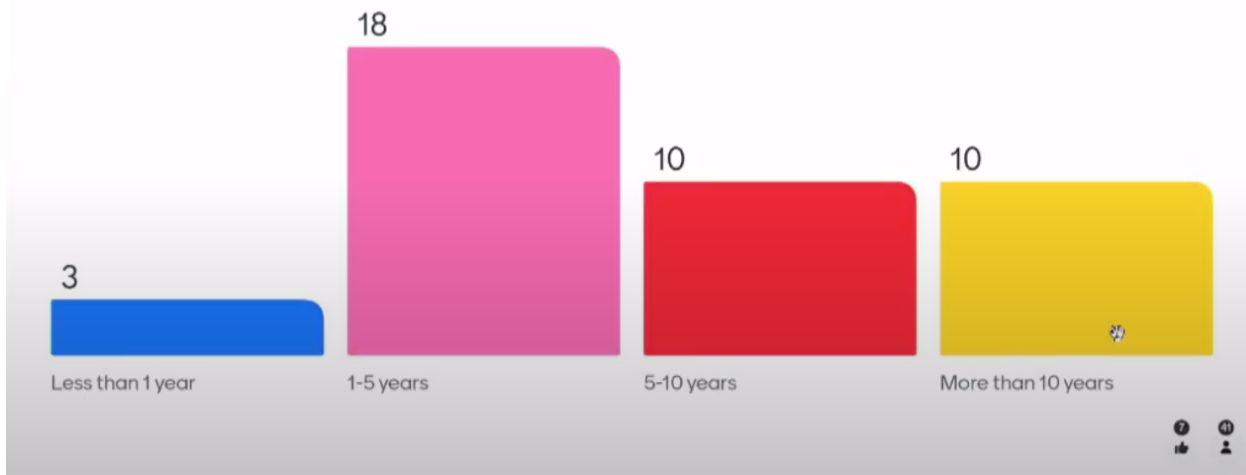
Please specify your gender



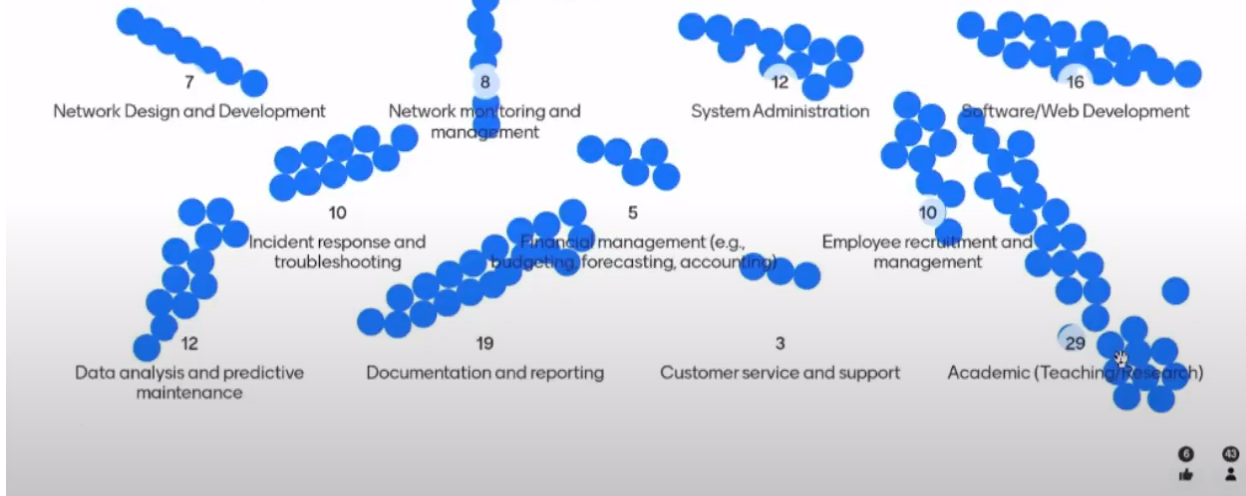
What is your current role within the organization? (Please select the option that best describes your primary responsibilities)



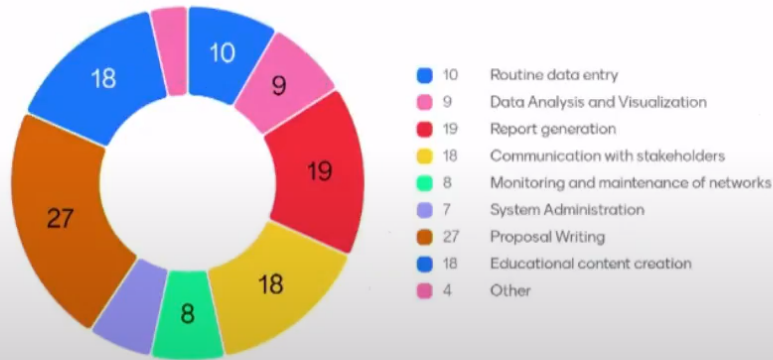
How many years have you been working in your current organization?



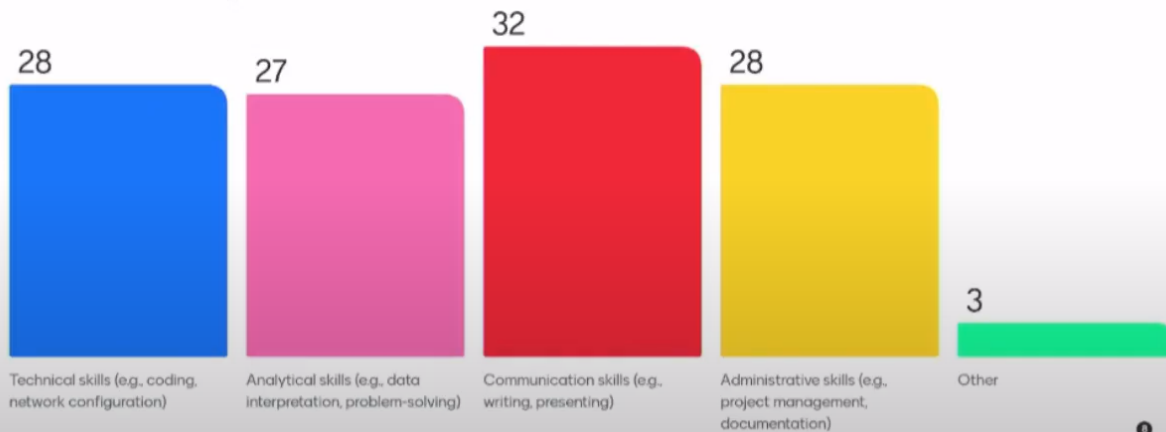
Which of the following tasks are part of your main responsibilities? (Select all that apply)



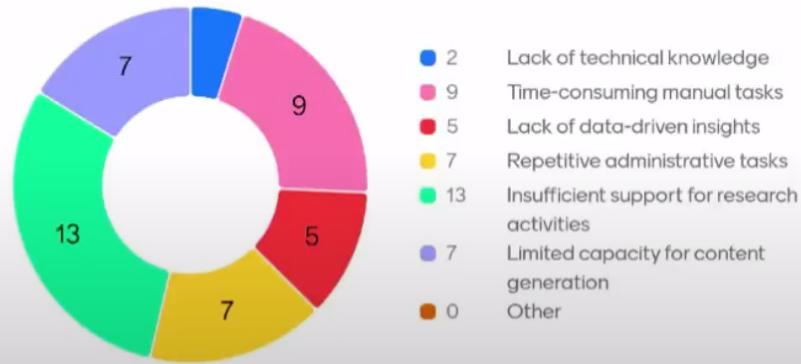
Which of these tasks do you currently perform manually? (Select all that apply)



What skills do you currently use to perform these tasks? (Select all that apply)



What is the biggest challenge you face in your current workflow?



What tools or software do you currently use to assist with your tasks?

Arcmap

Bing AI

EzyCrypt

Chatgpt

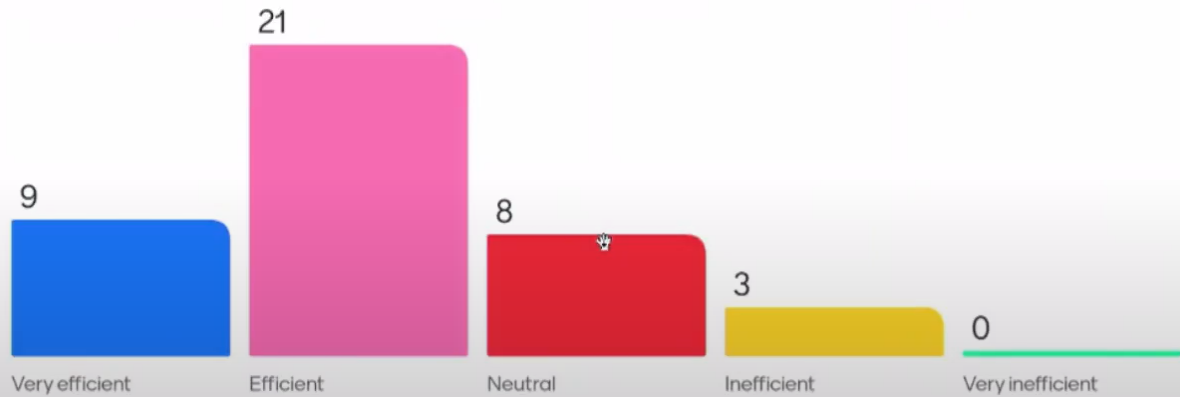
ChatGPT

MS Office

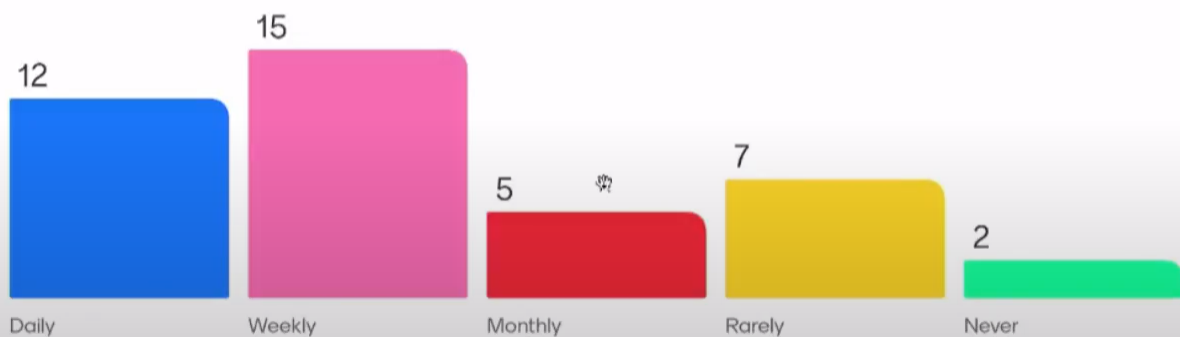
AMPL

ChatGPT

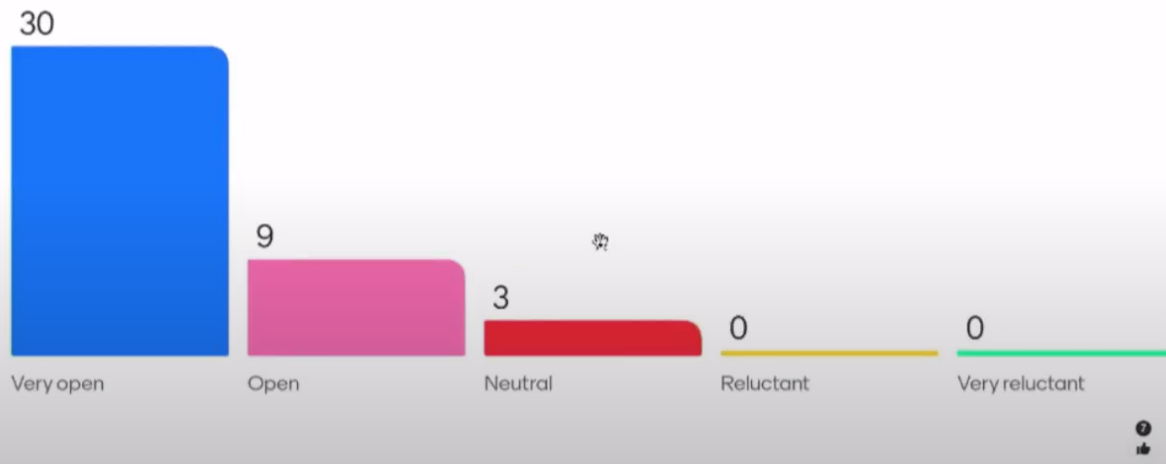
How efficient do you find your current tools when completing tasks?



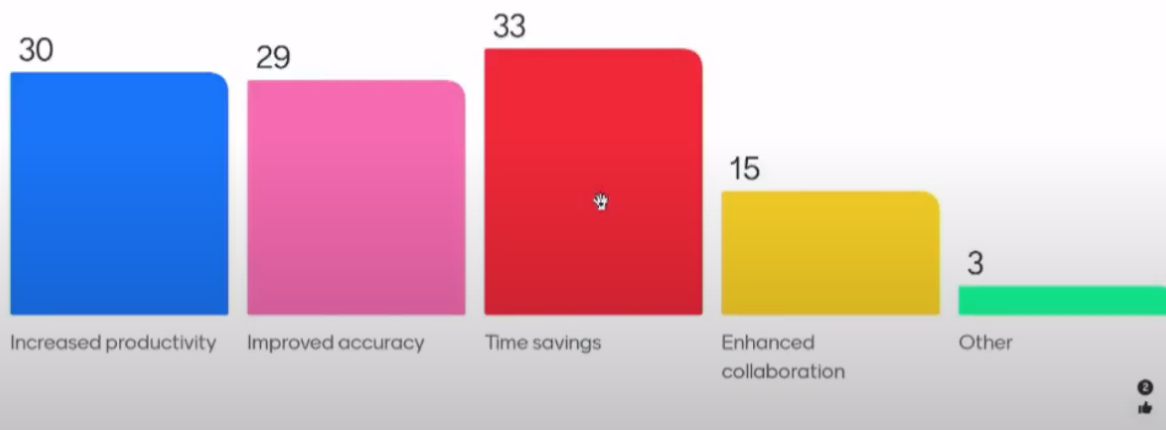
How frequently do you encounter inefficiencies in your current workflow (if any)?



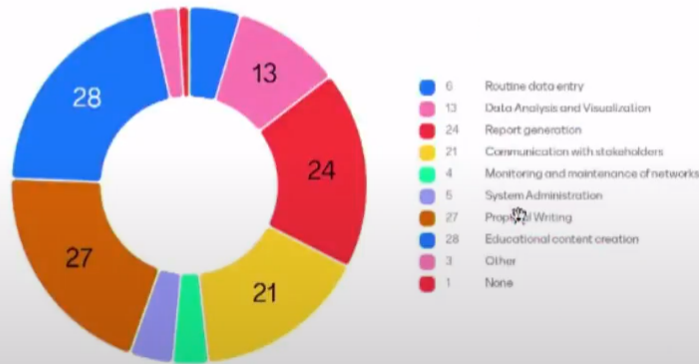
How open are you to adopting new tools or methods to improve your workflow?



What metrics would you use to measure the success of new tools or modules (select all that applies)?



For which of these tasks have you used AI or GenAI regularly? (Select all that apply)



What are the craziest ways that you have used GenAI tools, if any?

Writing recommendation letters for my students using their input

whatsapp meta is my new bestie

Technical discussion

Coding error solution

sometime got wrong answers !

Rapid solutions regarding research work

None

Paraphrasing



Which aspects of your job do you believe would benefit most from GenAI?

Research activities and report generation

report writing

All of the things that everyone says 😊

Paraphrasing, traputshooting

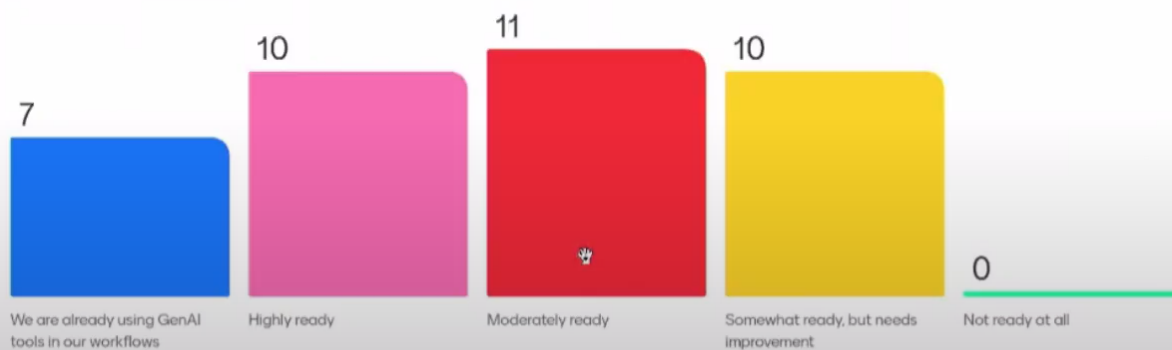
Research and web development

Resolving Errors

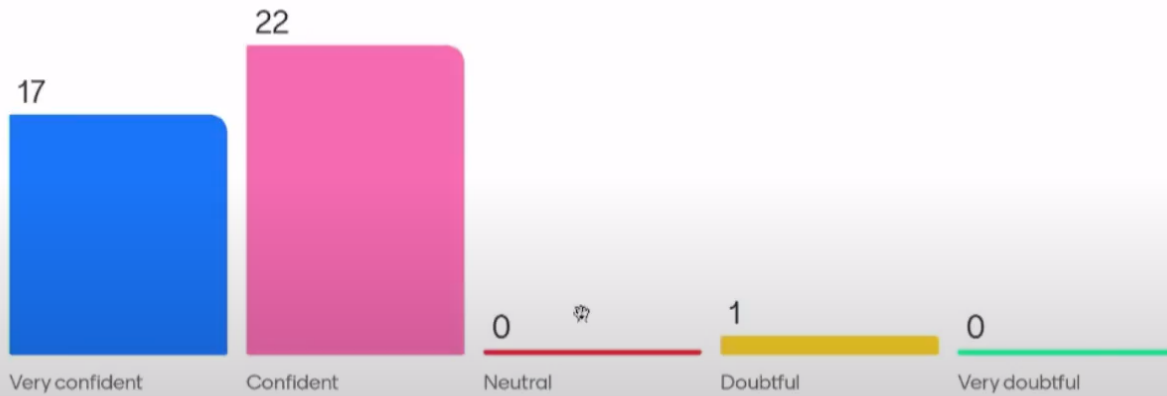
Research, Creativity

Research

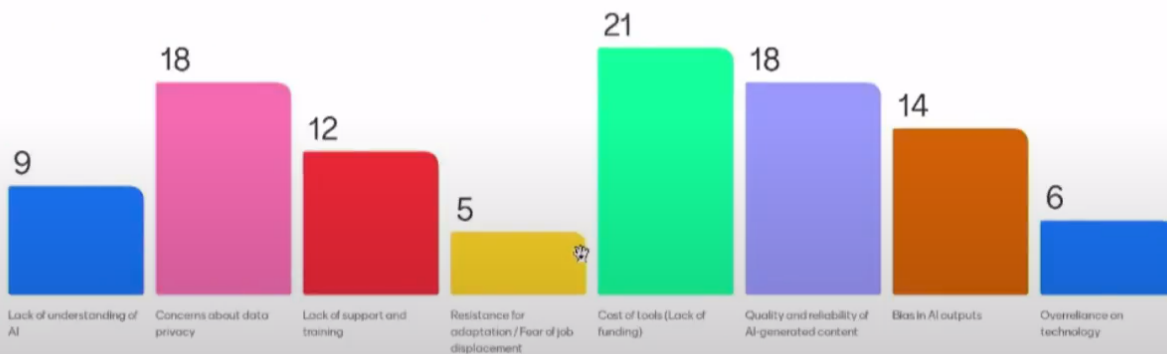
How would you rate the current readiness of your organization to adopt and integrate GenAI tools?



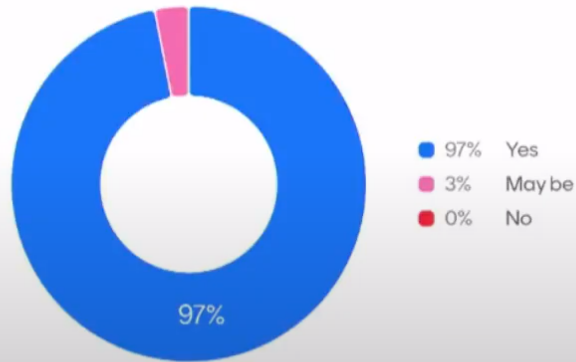
How confident are you in the potential of GenAI to improve your workflow?



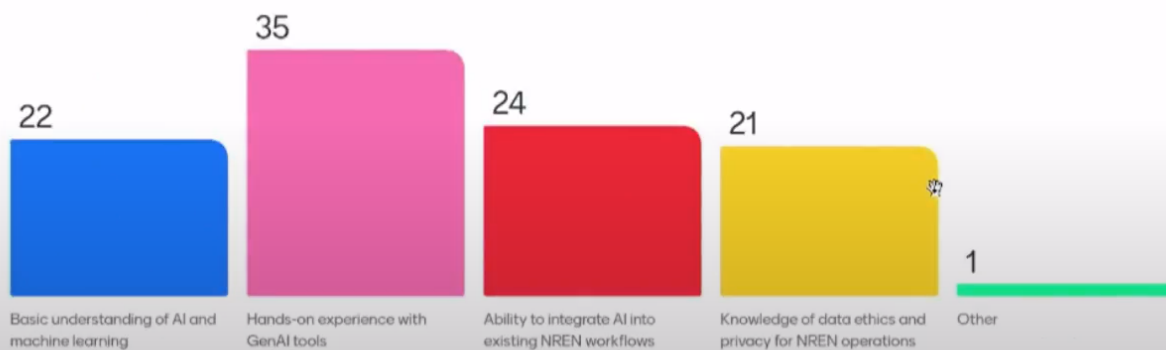
What concerns do you have about integrating GenAI into your work?(Select all that apply)



Would you be willing to participate in training programs focused on GenAI?



What type of training would you need to effectively use GenAI in your role? (Select all that apply)



What format of training would you find most beneficial (Select all that apply)?

