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## **Aligning internship outcomes with SDG 4: A comparative study of academic institutions and industry sectors' expectations**

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**Abstract**---In the rapidly evolving landscape of higher education and professional development, aligning internship outcomes with Sustainable Development Goal 4 (SDG 4)—which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all—has become increasingly pertinent. This study provides a comparative analysis of how academic institutions and industry sectors align their expectations of internship outcomes with SDG 4, focusing on the quality of education, skill development, and the preparation of students for lifelong learning. This exploratory study investigates the outcomes of meaningful internship experiences by comparing the expectations of academic institutions and industry sectors. The research examines how well these expectations align and their impact on the overall effectiveness of internships. By analysing the motivations and outcomes from both perspectives, the study aims to identify key factors that contribute to successful internships, providing insights into designing programs that benefit students, educational institutions, and industry partners alike. The findings offer practical recommendations for enhancing the alignment between academic and industry expectations. This study contributes to the ongoing discourse on the role of internships in achieving SDG 4 and provides a foundation for future research on aligning educational and industry expectations to foster more effective internship programs.

**Keywords**---exploratory analysis, internships, academic institutions, industry sector, SDG4.

## Background of the Study

Internships are a pivotal component of the educational landscape, serving as a bridge between academic learning and practical application. Expectations from a meaningful internship experience vary among students, academicians, and industry professionals, reflecting their unique perspectives and goals. Students generally seek internships that offer practical, hands-on experience and the opportunity to apply theoretical knowledge to real-world situations. They expect to develop relevant skills, gain industry exposure, and enhance their employability. Students often look for internships that provide mentorship, clear guidance, and meaningful tasks that contribute to their personal and professional growth. (Popescu, 2022; Strada Education Foundation, n.d.). Moreover, Kaur and Garg (2020) examine the influence of internships on career readiness among students in Indian universities, highlighting that internships significantly enhance students' professional skills and employability by bridging the gap between academic knowledge and practical experience. They emphasize that while internships contribute to improved job preparedness, there remains a need for more structured and industry-relevant internship programs to maximize their impact.

A meaningful internship experience is often characterized by substantial engagement, relevant tasks, and professional growth. According to O'Neill and Marks (2014), meaningful internships provide opportunities for students to apply theoretical knowledge, develop practical skills, and gain insights into industry practices. Similarly, Allen et al. (2013) argue that such internships should offer challenging projects and substantive feedback to ensure that students derive maximum benefit.

Academic institutions typically view internships as an extension of the classroom, where students can apply their learning in a professional environment. They expect internships to reinforce academic concepts, help students build competencies, and provide a platform for experiential learning. Academic institutions typically emphasize the educational value of internships. They often expect internships to facilitate academic learning and personal development. Furthermore, internships are seen to enhance employability, with institutions advocating for experiences that foster critical thinking, problem-solving, and communication skills (Bates, 2018).

Johnson et al. (2022) conducted a comparative analysis of internship program objectives across different academic institutions and industry sectors. They found that while academic institutions prioritize learning outcomes such as skills acquisition and theoretical knowledge application, industry sectors emphasize practical problem-solving skills and job readiness. This discrepancy underscores a need for enhanced communication between educators and employers to ensure that internships contribute effectively to SDG 4 goals.

According to Hurst et al. (2016), universities expect internships to complement academic coursework by providing real-world applications of theoretical concepts. This perspective is supported by Jackson (2015), who notes that institutions value internships that integrate learning objectives with professional skills

development. Academicians also look for internships to offer structured reflection opportunities and assessments that align with educational objectives (Popescu, 2022). Further, universities aim to provide students with opportunities that enhance their professional skills, offer real-world problem-solving experiences, and prepare them for post-graduate employment (Smith & Brown, 2019). Institutions often emphasize the role of internships in fostering critical thinking, teamwork, and communication skills, which are essential for career readiness (Johnson et al., 2020).

A significant body of research highlights the importance of structured internships that align with curriculum goals. Lee and Kim (2023) explored how curriculum design impacts internship effectiveness. Their research highlighted that curriculum incorporating real-world projects and industry partnerships resulted in better alignment with SDG 4, as students developed both technical skills and critical thinking abilities. They suggest that academic institutions should engage more actively with industry partners to tailor educational programs that reflect current market demands.

Also, universities expect internships to be structured and guided by academic objectives, including learning outcomes that reflect the students' academic progress and career aspirations (Miller & Jones, 2021). This approach ensures that internships contribute to the students' overall educational experience and academic achievements. Moreover, Madsen and Luecke (2017) argue that internships should be designed with clear learning outcomes and assessment criteria to ensure educational effectiveness.

In contrast, industry sectors often have different expectations for internships. From an industry perspective, internships are seen as a pipeline for future talent. Companies expect interns to contribute to projects and tasks while being eager to learn and adapt. Industry expects interns to contribute meaningfully to projects and deliver tangible results. Industries value internships for their ability to identify potential future employees, provide a preview of job performance, and fulfill short-term needs for skilled labor (Adams et al., 2021). Industry often seek students who bring fresh perspectives and can be moulded into potential full-time employees. Employers typically focus on immediate contributions and practical performance. Studies such as those by Cole and Klasen (2018) emphasize that industry sectors value internships that offer students the chance to engage in real work, solve practical problems, and contribute to organizational goals. This perspective is reinforced by Stanton et al. (2019), who argue that industry placements should align with the operational needs and strategic goals of the organization.

Industry professionals also look for internships to foster the development of specific skills that are critical to their business operations, ensuring that interns are both learning and providing value to the company (Strada Education Foundation, n.d). Employers also expect internships to facilitate skill acquisition relevant to the industry. According to Parker et al. (2020), industries seek internships that allow students to develop technical skills, industry-specific knowledge, and professional behaviors. Furthermore, a study by Scott and Burnett (2021) suggests that employers often prefer internships that include

mentorship and networking opportunities, enabling students to build professional relationships and gain insights into career pathways. Industry sectors often focus on the immediate skills and competencies of interns, such as technical abilities, problem-solving skills, and work ethic (Clark & Wilson, 2022). There is a strong emphasis on the practical impact of internships, with businesses expecting interns to add value to their teams and contribute to the achievement of organizational goals. By ensuring that internship programs are accessible to a diverse range of students, institutions and industries can contribute to SDG 4's goal of promoting lifelong learning opportunities for all.

The exploration of outcomes from meaningful internship experiences reveals a complex interplay between academic and industry expectations. Sharma (2019) explores the alignment between academic institutions and industry expectations concerning internships in Indian higher education. Sharma's analysis reveals discrepancies between what universities offer and what industries require, suggesting that closer collaboration and clearer communication between academia and industry are essential to create more effective internship programs that meet both educational and professional standards. The study underscores the importance of internships in career development while advocating for improvements to better align educational outcomes with industry needs.

The alignment of these expectations is crucial for the success of internship programs, and understanding the differing perspectives can help design internships that are beneficial to all stakeholders. Integrating SDG 4 into the design and implementation of internship programs can enhance their effectiveness in bridging the gap between academic learning and practical experience. By aligning academic and industry expectations with SDG 4's principles, internships can provide students with meaningful opportunities for skill development and career readiness, contributing to inclusive and equitable quality education.

However, the differences between academic and industry expectations can lead to mismatches in internship experiences. While academic institutions focus on educational development and learning outcomes, industry sectors prioritize immediate contributions and performance (Taylor & Green, 2023). This divergence can affect the quality and effectiveness of internships if not managed appropriately. Rao and Nair (2021) mentioned in their study that despite the growing importance of internships in bridging the gap between academic learning and professional practice, significant misalignments persist between what educational institutions provide and what industry employers expect. Desai and Joshi (2019) explore industry perspectives on internship programs in India, revealing that while internships are valued for providing practical experience and enhancing student employability, there are significant gaps in alignment between industry expectations and the current structure of internship programs. They emphasize that industries seek more skill-specific training and better preparation from interns, which is often lacking in existing programs. Businesses benefit from internships by gaining access to a pool of trained and motivated candidates, which can reduce recruitment costs and improve organizational performance (Clark & Wilson, 2022).

A review by Williams and Arnold (2022) indicates that while academic institutions focus on educational outcomes, industry sectors prioritize practical contributions. This divergence can result in internships that fail to meet either party's objectives. For instance, Jackson and Caldwell (2018) found that some internships designed primarily for academic enrichment may lack the practical challenges desired by employers, leading to suboptimal experiences for students. Similarly, research by McCormick and Dore (2023) highlights that internships structured to meet industry needs might overlook the educational goals of academic institutions, such as reflective learning and critical analysis. This misalignment underscores the need for improved communication and collaboration between educational institutions and industry sectors to create internships that fulfil both educational and practical objectives.

Kapoor and Mehta (2022) further the discussion by analysing both academic and industry expectations of internships within the Indian context. Their study highlights a mismatch between the theoretical focus of academic programs and the practical skills required by industries. They argue that bridging this gap requires a more integrated approach, with enhanced collaboration between educational institutions and industry partners to ensure internships are designed to meet the evolving needs of the job market. Effective communication and collaboration between universities and businesses are essential for creating internship programs that satisfy both parties' requirements (White & Gray, 2022). The literature emphasized on the need for reforms in internship programs to better align educational outcomes with industry requirements, ultimately enhancing the effectiveness of these programs in preparing students for their careers. To address the misalignment between academic and industry expectations, several best practices have been proposed. One approach is the development of hybrid internship models that incorporate both educational and practical elements. Martinez and Zhao (2024) examined various assessment models used by academic institutions and their impact on achieving SDG 4. They identified that comprehensive evaluation frameworks, which include feedback from both students and employers, tend to align better with SDG 4 objectives. These frameworks help in assessing the effectiveness of internships in providing quality educational experiences and ensuring that learning outcomes meet industry expectations.

Li and Xu (2019) advocate for internships that are co-designed by academic and industry partners, ensuring that both sets of expectations are met. Such models often involve clear agreements on learning objectives, deliverables, and evaluation criteria. Furthermore, enhanced communication between educational institutions and industry sectors is crucial. A study by Smith et al. (2021) suggests that establishing advisory boards or industry partnerships can facilitate ongoing dialogue, ensuring that internship programs remain relevant and effective. This collaboration can also provide valuable insights into emerging industry trends and skill requirements, allowing academic programs to adapt their curricula accordingly.

Additionally, integrating feedback mechanisms into the internship process can help align expectations. According to Johnson and Lee (2020), regular feedback from both academic supervisors and industry mentors can help students navigate

their internships more effectively and ensure that their experiences meet the desired learning outcomes and performance standards. While academic institutions emphasize educational enrichment and skill development, industry sectors focus on practical contributions and immediate performance. The divergence in these expectations can lead to mismatched internship experiences, highlighting the need for improved collaboration and alignment between educational and industry stakeholders.

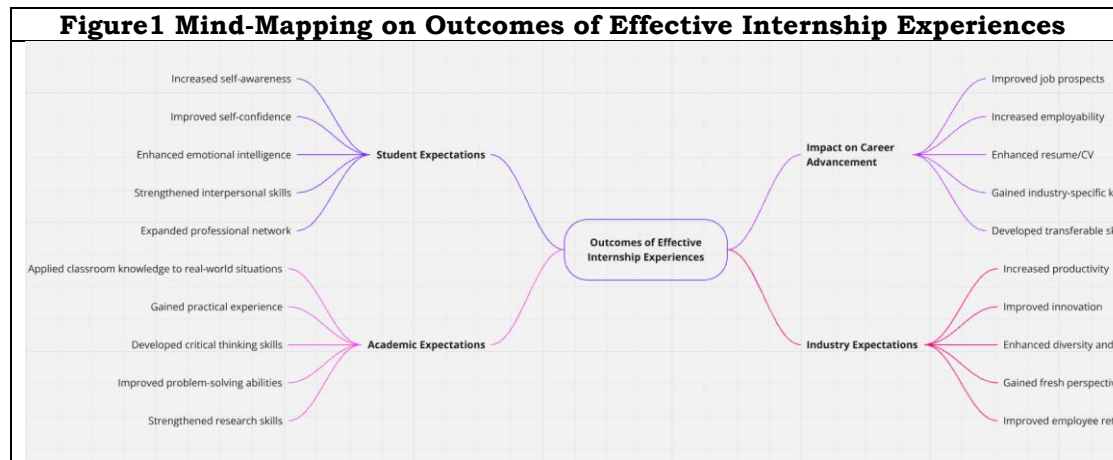
In exploring the outcomes of effective internship experiences through a comparative study of academic institutions' and industry sectors' expectations, it is essential to integrate the principles of Sustainable Development Goal 4 (SDG 4). SDG 4 aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all,” highlighting the importance of practical experiences in education.

Our investigation explores ways to bridge the gap between these expectations, exploring innovative models and practices that can enhance the effectiveness of internships. Addressing the challenges and implementing best practices will ensure that internships support both educational and professional growth, ultimately advancing the goals of SDG 4 and fostering a more skilled and knowledgeable workforce. By fostering a more integrated approach, it is possible to create internship experiences that not only meet the diverse needs of students, academic institutions, and employers but also contribute to more meaningful and impactful professional development.

### **Research Methodology**

The study conducted an exploratory analysis of meaningful internship experiences by comparing the expectations of academic institutions with those of industry sectors using secondary data. This approach leverages existing datasets, literature, and reports to gain insights into the alignment and divergence of these expectations. After exploratory research and brainstorming, we developed a mind map using MIRO software to illustrate how effective internships are perceived and evaluated by different stakeholders (Figure 1).

Figure 1 demonstrates that academic institutions prioritize internships to enrich educational experiences, reinforce theoretical knowledge, and develop critical thinking and personal competencies. In contrast, industry sectors focus on the practical contributions interns make, their immediate impact on projects, and their potential as future employees, emphasizing skill acquisition and professional development. The comparative analysis highlights both alignment and divergence: while both parties seek skill development and career readiness, the primary focus of academic institutions is on theoretical application and educational integration, whereas industry sectors prioritize practical output and immediate contributions. Challenges such as misalignments between academic and industry expectations and the variability in internship quality are noted. To address these issues, best practices such as hybrid models, improved communication, and program reforms are recommended. Future directions emphasize the need for innovative internship designs and enhanced collaboration between academia and industry to better meet the evolving needs of both students and employers.



Source: Authors' Calculation (using MIRO)

Based on mind map, the research design is structured to systematically review and synthesize existing data to address the following research questions (RQ):

RQ1: What are the documented expectations of academic institutions concerning meaningful internships?

RQ2: How do these expectations compare with those of industry sectors as reported in existing data?

RQ3: What are the perceived outcomes of internships from both perspectives, based on available literature and reports?

After rigorous literature review and mind mapping, we framed the following research objectives:

1. To identify and analyse the documented expectations of academic institutions regarding meaningful internships.
2. To compare the expectations of academic institutions with those of industry sectors.
3. To evaluate the perceived outcomes of internships from the perspectives of both academic institutions and industry sectors, based on available literature and reports.

The first objective aims to gather and understand the specific goals, criteria, and expectations that academic institutions have for internships. It involves reviewing institutional reports, program guidelines, and academic literature to determine what institutions seek to achieve through their internship programs. The second objective focuses on contrasting the expectations of academic institutions with those of industry sectors.

By analysing industry reports, employer surveys, and institutional documents, the goal is to identify similarities and differences between what academic institutions and industry sectors expect from internship programs. The third objective aims to assess how well internships meet the expectations of academic institutions and industry sectors by analysing the reported outcomes. This includes understanding the impact of internships on students, as perceived by both academic and industry stakeholders, and synthesizing findings from

literature and reports on the effectiveness of internships in achieving desired outcomes.

### *Data Collection*

For qualitative analysis to address the research objectives, offering insights into the expectations, outcomes, and alignment of internship programs the study collected secondary data from different reports. For instance, to gather and understand the specific goals, criteria, and expectations of academic institutions regarding meaningful internships, we collected data from different institutional reports and documentation (Refer Annexure 1).

### **Qualitative Data Comparative Analysis-Thematic Analysis and Discussion**

After data extraction from the relevant academic and industry literature, categories were created based on themes such as expectations, outcomes, and challenges for thematic analysis. Authors developed a coding scheme to systematically categorize the data into key themes and sub-themes (refer Table 1). Next, we analysed the qualitative data from institutional reports, industry documents, and student feedback using thematic analysis.

The thematic analysis of the qualitative data collected from relevant literature reveals five major themes: 1) Expectations and Objectives of Internships; 2) Alignment Between Academic and Industry Expectations; 3) Impact on Career Development; 4) Challenges in Internship Implementation; 5) Reforms and Recommendations. Further, the themes are categorised into sub themes (details are given in Table 1). Each theme and sub-themes provided insights into the diverse aspects and challenges associated with internship programs. These themes help to understand the multifaceted nature of internships and highlight areas for potential improvement.

The thematic analysis highlights the complexity of internship programs and underscores the need for greater alignment between academic and industry expectations. An analysis of the first theme (Expectations and Objectives of Internships) underscores several critical issues and expectation from different stakeholders. Internships serve as a crucial bridge between academic learning and practical application, with varied expectations from students, academic institutions, and industry sectors. Student Expectations emphasize the desire for practical, hands-on experiences, skill development, industry exposure, and mentorship. Students seek internships that provide clear guidance and meaningful tasks contributing to their growth (Popescu, 2022; Strada Education Foundation, n.d.).

Conversely, Academic Institutions' Perspectives view internships as extensions of the classroom, focusing on reinforcing academic concepts, building competencies, and facilitating experiential learning. Institutions stress the importance of aligning internships with academic goals and fostering educational value (Bates, 2018; Hurst et al., 2016). Industry Expectations highlight the need for interns to contribute effectively to projects, offer fresh perspectives, and acquire industry-specific skills. Industries prioritize practical performance and alignment with



organizational objectives, looking for interns who can provide immediate value (Cole & Klasen, 2018; Stanton et al., 2019).

<b>Table 1. Key themes and sub-themes- Thematic Analysis</b>			
<b>S.No</b>	<b>Themes</b>	<b>Sub-Themes</b>	<b>References</b>
1	Expectations and Objectives of Internships	Student Expectations Academic Institutions' Perspectives Industry Expectations	Popescu, 2022; Strada Education Foundation Bates, 2018; Hurst et al., 2016; Cole & Klasen, 2018; Stanton et al., 2019; Smith & Brown, 2019
2	Alignment Between Academic and Industry Expectations	Misalignment Issues Case Studies and Best Practices	Rao & Nair, 2021; Desai & Joshi, 2019 Li & Xu, 2019; Smith et al., 2021
3	Impact on Career Development	Employability Long-Term Career Trajectories	Singh & Kumar, 2018 Gupta & Bhatia, 2021; Sharma & Rani, 2020; Clark & Wilson, 2022
4	Challenges in Internship Implementation	Student Experience and Feedback Industry and Academic Collaboration	Patel, 2020 Kapoor & Mehta, 2022; McCormick & Dore, 2023
5	Reforms and Recommendations	Structured Programs and Integration Hybrid Models and Advisory Boards	Johnson & Lee, 2020; Williams & Arnold, 2022 Li & Xu, 2019; Smith et al., 2021; Miller & Jones, 2021; White & Gray, 2022; Taylor & Green, 2023

Source: Authors' Analysis

Second significant theme identified from the literature is the alignment Between Academic and Industry Expectations. Misalignment Issues between academic and industry expectations, leading to internships that often fail to fully satisfy either party's goals. This discrepancy can result in internships that do not meet the practical needs of industries or the educational objectives of academic institutions (Rao & Nair, 2021; Desai & Joshi, 2019). To address these challenges, Case Studies and Best Practices suggest integrating educational and practical elements within internship programs. Successful internships often involve hybrid models co-designed by academia and industry, with clear learning outcomes and regular feedback (Li & Xu, 2019; Smith et al., 2021).

Next theme is framed to analyse the impact of internships on Career Development and sub-themes were generated to assess employability and long-term Career trajectories. As per qualitative data analysis, internships have a profound impact on enhanced employability, equipping students with valuable practical skills and industry knowledge that are highly regarded by employers. However, the degree of

benefit varies based on the quality and relevance of the internship experience (Singh & Kumar, 2018). Singh and Kumar (2018) investigate the impact of internship programs on the career trajectories of students in India, providing a comprehensive analysis of how internships influence long-term career outcomes. Their study finds that internships significantly enhance employability by equipping students with practical skills and industry knowledge that are highly valued by employers. However, the research also highlights that the benefits of internships are unevenly distributed, with variations in quality and relevance depending on the sector and organization. Singh and Kumar emphasize the need for a more structured approach to internship design, advocating for greater alignment between academic curricula and industry requirements to maximize the positive effects on students' career development. Their findings underscore the importance of high-quality, industry-relevant internships in shaping successful career paths for graduates.

The theme of Long-Term Career Trajectories underscores the importance of high-quality internships in shaping successful career paths. While beneficial, inconsistent program structures can limit the effectiveness of internships in achieving long-term career goals (Gupta & Bhatia, 2021; Sharma & Rani, 2020). Gupta and Bhatia (2021) assess internship outcomes from the perspective of Indian higher education institutions, revealing that while internships are generally seen as beneficial for enhancing students' practical skills and career readiness, there is considerable variation in their effectiveness. The study identifies key factors influencing successful internship outcomes, such as the alignment of internship roles with academic objectives and the quality of mentorship provided. Complementing this, Sharma and Rani (2020) present case studies of exemplary internship programs in Indian colleges, highlighting best practices and strategies that contribute to their success. Their research emphasizes the importance of well-structured programs, strong industry partnerships, and clear objectives in ensuring that internships deliver meaningful experiences and prepare students effectively for their future careers. Together, these studies underscore the need for a systematic approach to designing and implementing internships to bridge the gap between academic learning and industry demands.

To measure challenges in internship implementation, we generated this code as the fourth theme of the study. Student Experience and Feedback reveal significant challenges, such as inadequate mentorship, lack of meaningful work, and poor alignment with academic goals. These issues often result in suboptimal internship experiences for students, highlighting the need for improved program structures and support systems (Patel, 2020).

Patel (2020) provides an in-depth exploration of internship experiences in Indian universities through focus group discussions, offering valuable insights into students' perceptions and challenges. The study reveals that while internships are widely regarded as crucial for gaining practical experience and enhancing career readiness, students frequently encounter issues such as inadequate mentorship, lack of meaningful work, and limited alignment with their academic goals. Patel's research highlights a disconnect between the expectations of students and the

actual internship experiences, emphasizing the need for improved program structures and support systems.

The findings suggest that universities should enhance their internship offerings by fostering stronger partnerships with industry and ensuring that internships provide substantial and relevant work experience, thereby better preparing students for the job market. Additionally, Industry and Academic Collaboration is crucial in addressing these challenges. Improved collaboration between educational institutions and industry partners is necessary to align expectations and enhance the relevance of internship programs (Kapoor & Mehta, 2022; McCormick & Dore, 2023).

For the fifth theme, the literature suggests several Structured Programs and Integration reforms to improve internship effectiveness. Developing structured programs with clear objectives, deliverables, and evaluation criteria, and integrating feedback from both academic and industry stakeholders, is essential for aligning expectations and enhancing outcomes (Johnson & Lee, 2020; Williams & Arnold, 2022). Also, implementing mechanisms for ongoing evaluation and assessment of internship programs to address issues and make improvements (Miller & Jones, 2021). This experiential learning is critical for students' educational development and aligns with SDG 4's emphasis on equitable and inclusive quality education.

Establishing clear communication channels between universities and businesses to ensure mutual understanding of goals, responsibilities, and expectations (Taylor & Green, 2023). Hybrid Models and Advisory Boards are proposed as solutions to facilitate ongoing dialogue between academia and industry, ensuring that internships meet both educational and practical needs. Establishing advisory boards or industry partnerships can provide valuable insights and help adapt curricula to emerging industry trends (Li & Xu, 2019; Smith et al., 2021). Addressing the identified challenges and implementing the recommended reforms can lead to more effective internships that benefit students, academic institutions, and industry sectors alike. Students who participate in well-structured internships often experience enhanced career readiness, improved employability, and a better understanding of their chosen fields (Smith & Brown, 2019). These internships provide practical experience that complements academic learning and helps students transition smoothly into the workforce. Also, students who engage in internships that align with their career goals and academic training are more likely to secure employment in their field of study and achieve higher job satisfaction (Adams et al., 2021). Designing structured internship programs that include defined learning objectives, regular feedback, and opportunities for reflection (White & Gray, 2022).

### **Practical Implications**

To address the identified challenges and enhance internship effectiveness, several practical measures are recommended. First, internships should be designed with clear, measurable objectives that align with both academic goals and industry needs. Implementing structured programs with defined deliverables and evaluation criteria can ensure that internships meet the expectations of all

stakeholders. Incorporating hybrid models and establishing advisory boards can facilitate ongoing dialogue between academic institutions and industry partners, ensuring that internships remain relevant and effective. Additionally, improving mentorship and providing meaningful work experiences are crucial for enhancing the quality of internships. By integrating feedback mechanisms and fostering stronger industry collaborations, internship programs can be better aligned with emerging trends and requirements, ultimately benefiting students, academic institutions, and employers.

By aligning academic institutions' and industry sectors' expectations with SDG 4, internships can be designed to enhance students' skills and competencies, ultimately contributing to their educational and professional development. This alignment ensures that internships not only meet industry needs but also support broader educational goals, fostering a more skilled and knowledgeable workforce.

## **Conclusion**

The comparative analysis of internship expectations reveals a complex interplay between the objectives of academic institutions and industry sectors. While both seek to enhance student employability and skill development, their priorities diverge significantly: academic institutions emphasize theoretical application and educational enrichment, whereas industry sectors focus on practical contributions and immediate performance. This divergence often leads to misalignments that can impact the overall effectiveness of internship programs. The thematic analysis in the study reveals a multifaceted landscape where expectations, outcomes, and challenges intersect significantly between academic institutions and industry sectors. The analysis underscores the critical need for aligning these expectations to enhance the effectiveness of internships.

Despite the positive impact of internships on career development, including improved employability and industry knowledge, inconsistencies in program quality and relevance persist. Therefore, it is imperative to address these gaps through well-structured programs, clear objectives, and improved collaboration between academia and industry to create internships that genuinely bridge the gap between academic learning and practical application.

Addressing these gaps requires a concerted effort to develop hybrid internship models that integrate educational and practical elements, foster improved communication between academia and industry, and implement structured feedback mechanisms. By aligning internship programs more closely with both educational goals and industry needs, stakeholders can create more meaningful and impactful experiences that better prepare students for their careers while meeting the strategic goals of employers. The future of effective internships lies in innovative, collaborative approaches that bridge these expectations, ensuring that internships fulfil their potential as critical components of professional development.

## Statements and Declarations

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## Ethics declarations

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<b>Annexure 1. Data Sources of Secondary Data Collection for Qualitative Analysis</b>		
University Internship Program Reports	Reports published by Indian universities detailing their internship programs, goals, and criteria. Documents summarizing internship programs, student feedback, and evaluations	Indian Institute of Technology (IIT) Bombay. (2022). <i>Internship Program Annual Report</i> ; Jawaharlal Nehru University (JNU). (2021). <i>Career Development and Internship Report</i>
Program Handbooks and Syllabi	Handbooks that outline procedures, learning outcomes, and expectations for internships. Detailed descriptions of how internships are integrated into academic courses.	Delhi University. (2020). <i>Internship Handbook for Students</i> ; Indian Institute of Management (IIM) Ahmedabad. (2019). <i>Course Syllabus for Internship in Management</i> .
University Websites and Institutional Repositories	Online Internship Portals Archives containing relevant reports and documents.	University of Pune. (2022). <i>Internship Opportunities</i> Indian Institute of Science (IISc), Bangalore. (2021). <i>Institutional Repository of Internship Reports</i>
Industry Reports and White Papers	Reports from Indian industry associations detailing internship expectations and practices. Research reports from consulting firms on industry practices and expectations.	Confederation of Indian Industry (CII). (2023). <i>Internship and Employment Trends Report</i> Deloitte India. (2022). <i>The Future of Internships in India: Industry Insights</i>
Employer Surveys	Data from surveys capturing employer expectations regarding internships. Studies comparing industry standards and expectations for internships.	Nasscom. (2021). <i>Employer Survey on Internship Practices</i> McKinsey & Company India. (2020). <i>Benchmarking Internship Programs in India</i>
Institutional Documents	Documents detailing expectations in collaborations between Indian academic institutions and industry partners. Collaborative Program Reports	Indian Institute of Technology (IIT) Delhi and Infosys. (2021). <i>Partnership Agreement for Internship Program</i> ; BITS Pilani and Wipro. (2022). <i>Collaborative Internship Program Report</i>
Student Feedback Reports	Reports from student surveys and feedback forms on their internship experiences	Indian Institute of Management (IIM) Bangalore. (2022). <i>Student Internship Feedback Report</i>
Evaluation Assessment Reports	Assessments of the effectiveness of internship programs by academic institutions and industry partners.	University of Delhi. (2023). <i>Annual Internship Program Evaluation Report</i>