

A Study on the Education Supply Chain for Graduate Employability in Bangladesh's Higher Education System

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Abstract - This research examines the role of Educational Supply Chain Management (EduSCM) in enhancing graduate employability within Bangladesh's higher education system. Despite significant growth in the number of graduates, a skills gap persists, with many graduates facing underemployment or unemployment due to a mismatch between academic knowledge and industry demands. Through a mixed-methods approach combining qualitative insights from university administrators, faculty, industry professionals, and graduates with quantitative survey data from 300 participants, this study explores how aligning curriculum design, faculty quality, university infrastructure, and industry collaboration can improve graduate preparedness for the workforce. The findings reveal a notable disconnect between academic programs and industry needs, with curriculum relevance, faculty industry experience, and industry collaboration identified as key factors influencing employability. The study proposes actionable recommendations, including curriculum reform, enhanced industry partnerships, faculty development, and infrastructure modernization, to bridge the skills gap and improve the employability of graduates. By applying the EduSCM model, this research provides valuable insights for universities, policymakers, and industry stakeholders to optimize higher education and align it with labor market demands, contributing to Bangladesh's economic growth and sustainable development.

Keywords: Educational Supply Chain Management (EduSCM), Graduate Employability, Curriculum Design, Faculty Development, Industry Collaboration

1. Introduction

1.1 Background and Context

The rapid expansion of higher education in Bangladesh over the past few decades has led to significant improvements, but challenges remain in aligning higher education outcomes with the demands of the labor market. Despite the increasing number of graduates, many face unemployment or underemployment, particularly in fields where practical skills, industry-specific knowledge, and soft skills are crucial. This highlights a key issue: the gap between theoretical knowledge acquired in academia and the practical expertise required by employers [1]. This skills mismatch is particularly evident in sectors like business, technology, and engineering, where employers struggle to find candidates with both technical knowledge and essential soft skills, such as problem-solving and communication [4]. The traditional focus of higher education on academic learning often neglects the development of practical, job-ready skills, leaving graduates underprepared for the realities of the workforce [5]. A significant factor contributing to this challenge is the education supply chain, which refers to the interconnected components of the education system, such as curriculum development, faculty qualifications, university infrastructure, and industry collaboration. When managed effectively, the education supply chain can better equip graduates with the skills needed by

employers [18]. However, in Bangladesh, many of these elements remain fragmented, leading to inefficiencies and insufficient graduate preparedness. The lack of integration between academia and industry exacerbates the issue. Many universities in Bangladesh have been slow to update curricula to meet industry requirements, with outdated programs failing to provide students with the necessary practical skills. This disconnect has resulted in a growing number of underemployed graduates, especially in fields where industry collaboration is essential [9], [10].

The education supply chain model offers a potential solution by applying supply chain management principles to higher education. EduSCM emphasizes a holistic approach that integrates curriculum development, faculty qualifications, university facilities, and industry linkages to ensure graduates are both academically proficient and possess the practical skills demanded by employers [19]. Studies have shown that optimizing these components can enhance employability by aligning educational practices with industry needs, such as through industry feedback and strong university-industry partnerships [13], [14]. This study aims to explore how optimizing the education supply chain can improve graduate employability in Bangladesh. By examining key factors like program design, faculty quality, university culture, and facilities, the research seeks to provide insights for policymakers, educators, and industry leaders to improve higher education quality and relevance [15]. Ultimately, the findings aim to contribute to education reform and produce a workforce equipped to meet the demands of a globalized, technology-driven economy. This research is expected to inform stakeholders on how to enhance the education supply chain, bridging the gap between education and employment, and supporting Bangladesh's sustainable economic development.

1.2 Statement of the Problem

Bangladesh has seen rapid growth in its higher education sector, with an increase in the number of universities and student enrollment. However, a significant issue persists: a disconnect between the education provided by universities and the skills demanded by employers [3][6]. Many graduates face high levels of unemployment or underemployment

despite holding degrees [7][8]. This problem stems from a misalignment between university curricula, which focus primarily on theoretical knowledge, and the practical skills required by the workforce. Additionally, faculty members often lack industry experience, and university infrastructure is outdated, limiting students' ability to gain hands-on experience [22][24]. The fragmented nature of the education supply chain, including curriculum design, faculty development, infrastructure, and industry collaboration, further exacerbates this skills gap. This research aims to explore how optimizing the education supply chain can improve graduate employability and better align higher education with industry needs in Bangladesh.

2. Literature Review

2.1 Educational Supply Chain Management

Educational Supply Chain Management (EduSCM) is an interdisciplinary framework that applies traditional Supply Chain Management (SCM) concepts to the educational system [18]. Similar to manufacturing or services, where inputs are transformed into final products, the educational process can be viewed as a supply chain involving key stakeholders, students, faculty, administrators, and industry partners. The primary aim of EduSCM is to optimize the flow of knowledge, resources, and information to improve the educational output, which is the graduates entering the workforce with the necessary skills and competencies [20]. EduSCM focuses on aligning various components of the educational system to produce high-quality graduates equipped with both theoretical knowledge and practical skills that meet the demands of the labor market. This approach ensures that the graduates, viewed as the "product" of the education system, are well-prepared to fulfill the expectations of employers and contribute effectively to society's needs [21].

2.1.1 Core Components of EduSCM

i) Curriculum Design and Development: Curriculum design forms the foundation of the education supply chain. It determines the knowledge and skills students are expected to acquire during their education. An effective curriculum must be developed

in close collaboration with industry stakeholders to ensure alignment with current job market requirements. Incorporating real-world scenarios, hands-on experiences, and interdisciplinary learning into the curriculum is essential to preparing graduates for the workforce [16], [17]. Moreover, curricula need to be adaptable, regularly updated to accommodate technological advancements and changing industry trends [21], [22]. In Bangladesh, many universities face challenges in aligning their curricula with global and local market demands, resulting in a skills gap between what students learn and what employers require. Optimizing curriculum development through EduSCM will ensure that academic programs remain relevant and provide the skills necessary for enhanced graduate employability [3].

ii) Faculty Development and Management: Faculty members are integral to the education supply chain, responsible for delivering the curriculum and guiding students' learning. The quality of faculty, including their qualifications and expertise, significantly impacts the quality of education provided [12]. Faculty members with industry experience can bridge the gap between theoretical knowledge and practical application, offering students valuable insights into the real-world use of academic concepts. Furthermore, faculty development programs are necessary to update teaching methods, ensuring that faculty are equipped to engage students and meet evolving industry standards [4], [5]. In Bangladesh, faculty development programs are often inadequate, limiting instructors' ability to stay current with industry trends and technological advancements. Strengthening faculty development and integrating industry knowledge into teaching practices are essential to addressing the skills gap among graduates [18].

iii) University Infrastructure and Facilities: University infrastructure, including physical and technological resources, directly impacts the quality of education. Modern laboratories, libraries, computer labs, and online learning platforms are necessary to support students in acquiring practical skills that are valued by industries [16]. Quality facilities provide an interactive and hands-on learning environment, which is crucial for fostering graduate employability. Moreover, updated infrastructure ensures that universities can offer programs that enhance digital

literacy and technical proficiency [6][7]. In Bangladesh, many universities still rely on outdated infrastructure, limiting students' ability to develop essential technical and practical skills. Investing in modern facilities that support both traditional and digital learning is crucial for improving education outcomes and bridging the gap between education and industry requirements [20].

iv) Industry Collaboration and Networking:

Effective industry collaboration is central to the EduSCM model. By partnering with industry stakeholders, universities can obtain direct feedback on curriculum relevance and offer students opportunities for internships, co-op programs, and practical training [11], [12]. These partnerships also help students build professional networks that are essential for securing employment post-graduation. Additionally, industry-driven projects, guest lectures, and joint research initiatives can enhance students' real-world knowledge and employability [9][10]. In Bangladesh, university-industry collaboration is often limited, resulting in a disconnect between the education system and the job market. Strengthening these partnerships is essential to ensure that graduates are equipped with the skills that employers demand and to provide students with the necessary experience to thrive in the workforce [13], [14].

v) Student Learning and Outcomes: Ultimately, the output of the education supply chain is the student, who must acquire both technical and soft skills to succeed in the workforce [16]. This involves not only mastering theoretical knowledge but also gaining practical experience through internships, hands-on projects, and experiential learning opportunities [17]. EduSCM emphasizes the integration of real-world applications into the educational process to ensure that students are active participants in their learning, rather than passive recipients of knowledge [2][12]. Moreover, universities need to implement systems for continuous assessment and feedback to track student progress. These systems ensure that students develop the required skills and competencies and allow universities to adjust their programs as needed. By focusing on student-centered outcomes within the education supply chain, universities can produce graduates who meet academic standards and are ready for the demands of the labor market [13].

2.2 The Role of EduSCM in Enhancing Graduate Employability

Educational Supply Chain Management (EduSCM) plays a crucial role in addressing the increasing challenge of graduate employability by ensuring that universities provide students with not only theoretical knowledge but also practical skills and experiences aligned with industry needs [6]. Through systematic integration of various components of higher education, EduSCM optimizes the pathways through which students transition from learning to the workplace, improving their chances of securing meaningful employment [8]. EduSCM's role is transformative, reshaping the educational process so that all stakeholders, educators, administrators, employers, and students, work together to enhance student outcomes. By integrating curriculum design, teaching practices, student development, and industry engagement, EduSCM ensures that universities produce graduates who are not only academically competent but also industry-ready [9] [10].

2.2.1 Integrating Industry Demand into Curriculum Design

One of the most critical roles of EduSCM in enhancing graduate employability is aligning curriculum content with industry requirements. In many higher education systems, including Bangladesh, universities often design academic programs based on traditional academic theories that may not reflect current or future job market needs [9]. EduSCM addresses this disconnect by systematically incorporating industry feedback into the curriculum development process. For instance, universities can collaborate with industry professionals to design courses that include practical skills, such as coding, data analysis, or project management, which are directly applicable to future job roles [13]. EduSCM also ensures that curricula stay updated with emerging industry trends like AI, digital transformation, and sustainability. It promotes the integration of soft skills like leadership, teamwork, and communication, which employers increasingly demand. This way, EduSCM ensures that students are prepared for the interpersonal and professional challenges of the workplace [11][12].

2.2.2 Faculty Development and Engagement with Industry

Faculty members play a pivotal role in the education process. Their expertise and teaching methods significantly influence graduate employability. EduSCM emphasizes the need for continuous professional development for faculty members, ensuring that they stay current with industry practices, technological advancements, and evolving teaching methods [23]. Faculty development in EduSCM goes beyond academic training; it encourages faculty members to build relationships with industry professionals, engage in joint research, and incorporate real-world case studies into their teaching [15]. This connection allows faculty to bring up-to-date knowledge into the classroom, equipping students with industry-relevant skills. In Bangladesh, many faculty members lack direct industry experience, so EduSCM fosters industry-academia partnerships, allowing faculty to stay informed and improve teaching strategies [1][6].

2.2.3 Enhancing Learning Environments through Infrastructure

The learning environment is crucial in EduSCM. Investing in modern university infrastructure, such as classrooms, well-equipped laboratories, research facilities, and online learning platforms, is essential for supporting contemporary teaching methods [16]. In today's world, technological proficiency is vital for career success. Universities must provide students with access to modern technologies and tools that mirror workplace environments. Computer labs with up-to-date software and hardware are essential for fields like engineering and business [18]. Additionally, virtual learning environments and digital platforms help students gain exposure to global job markets and adapt to remote work settings [17]. However, many universities in Bangladesh still face challenges with outdated infrastructure, limiting students' ability to gain essential practical skills. EduSCM advocates strategic investments in infrastructure to provide learning environments that match current industry standards [8], [23].

2.2.4. Strengthening University-Industry Collaboration

A core principle of EduSCM is the integration of industry feedback throughout the educational process. Collaboration with industry stakeholders is essential for creating opportunities for students to gain hands-on experience. This collaboration can take many forms, including internships, apprenticeships, joint research projects, guest lectures, and industry-sponsored competitions [19]. In Bangladesh, the connection between universities and industries is often weak, leading to a gap between educational outcomes and industry needs. EduSCM provides a framework for strengthening these partnerships, offering students the chance to work directly with industry experts, gain real-world insights, and build professional networks, which enhance their employability. For example, internships provide students with the opportunity to apply academic knowledge, develop industry-specific skills, and establish connections with potential employers [9], [10]. By facilitating these collaborations, EduSCM not only improves graduate employability but also keeps universities informed about the changing demands of industries. This feedback loop ensures that education remains aligned with labor market requirements.

2.2.5 Continuous Monitoring and Feedback Loops

EduSCM advocates for the establishment of continuous monitoring systems that track the effectiveness of educational programs in meeting industry needs. These feedback loops allow universities to assess their graduates' performance in the labor market and adjust curricula and teaching strategies accordingly. Alumni feedback is a key component of this process [23]. By engaging with graduates to understand their career trajectories and challenges, universities can refine their programs to better meet employer needs. Additionally, feedback from employers on the skills and competencies of recent graduates helps universities make real-time adjustments to ensure that students are prepared for the ever-evolving global workforce [11], [23]. In Bangladesh, where many universities lack systems for continuous feedback, EduSCM advocates for robust alumni networks, career services, and employer engagement strategies to ensure a constant stream of

feedback. This system will help universities stay relevant, update their programs regularly, and stay connected with labor market trends [18], [22].

2.2.6 Preparing Graduates for Global Competitiveness

EduSCM also focuses on preparing graduates for the global job market. The demand for graduates with internationally relevant skills is increasing, especially in a globalized economy. In Bangladesh, which is experiencing rapid globalization and economic growth, it is essential that universities equip students with the skills needed to compete not just locally but also globally. EduSCM encourages universities to foster cross-cultural competencies, international internships, and global collaborations. These opportunities help students develop a global perspective and equip them to work in diverse environments. By preparing graduates for international markets, EduSCM improves their chances of securing employment not just in Bangladesh but also in the global economy [13], [14].

2.2.7 Addressing the Skills Gap and Enhancing Societal Impact

EduSCM's ultimate goal is to address the critical skills gap between higher education graduates and the labor market. By aligning academic programs with industry demands, focusing on both hard and soft skills, and fostering industry partnerships, EduSCM creates a generation of graduates who are highly employable and ready to contribute to economic growth [1]. Furthermore, EduSCM plays a broader societal role by ensuring that universities produce skilled professionals who can drive innovation, contribute to economic development, and address global challenges. In Bangladesh, where youth unemployment is a major concern, optimizing EduSCM can significantly impact the economy by producing graduates who are prepared for modern workforce demands [15]. EduSCM plays a crucial role in enhancing graduate employability by ensuring that universities provide students with the necessary academic knowledge and practical, industry-relevant skills [17]. By integrating industry demand into curriculum design, fostering faculty development, improving learning environments, and strengthening

university-industry collaborations, EduSCM ensures that graduates are not only academically proficient but also industry-ready. Furthermore, by preparing students for the global workforce and ensuring that universities are aligned with industry needs, EduSCM helps bridge the skills gap and creates a more competitive and skilled workforce [22]

2.3 Graduate Skills Gap in Bangladesh

The skills gap in Bangladesh is a significant challenge for the country's higher education system and labor market. Despite an increasing number of university graduates, employers often report a shortage of candidates with the necessary skills, both technical and soft skills, to succeed in the workforce. The growing disparity between the skills taught in educational institutions and those required by industries is contributing to high levels of underemployment and unemployment among graduates.

2.3.1 Factors Contributing to the Skills Gap

Several factors contribute to the widening skills gap in Bangladesh:

i) Curriculum Mismatch: One key factor is the mismatch between university curricula and labor market needs. Many higher education programs in Bangladesh are outdated and focus heavily on theoretical knowledge, with little emphasis on practical, job-oriented skills [24]. For example, fields like IT and engineering experience rapid technological advancements, and graduates who lack up-to-date knowledge find themselves at a disadvantage. As industries increasingly seek graduates familiar with cutting-edge technologies such as artificial intelligence, machine learning, and data science, a significant gap exists between the evolving demands of the labor market and the outdated curricula of many academic programs [2], [3].

ii) Lack of Practical Experience: Many university graduates in Bangladesh are unprepared for the practical challenges of the workplace due to a lack of hands-on experience during their studies. Although theoretical knowledge is important, employers now expect graduates to have real-world exposure.

Internships, apprenticeships, and work-based learning opportunities are essential for providing students with practical experience, but many universities in Bangladesh lack strong industry partnerships to offer these opportunities. Consequently, graduates are often ill-equipped with the practical skills and workplace exposure required by employers [4][5].

iii) Quality of Teaching and Faculty Experience: The quality of teaching and the industry experience of faculty members also contribute to the skills gap. In many universities, faculty members are academically qualified but lack direct industry experience, which limits their ability to impart real-world knowledge and skills to students [7], [8]. Furthermore, teaching methods often prioritize memorization over the development of critical thinking, creativity, and problem-solving skills necessary for navigating fast-paced, dynamic industries. This approach leaves students with a theoretical understanding but insufficient practical knowledge to succeed in modern workplaces.[8] [9].

iv) Weak University-Industry Collaboration: Another significant contributor to the skills gap is the weak collaboration between universities and industries. In countries with well-developed education systems, universities work closely with industries to ensure their curricula align with market needs. In Bangladesh, however, university-industry partnerships are often weak, leading to a disconnect between the skills students acquire and the skills that employers require. This lack of collaboration also limits opportunities for internships, job placements, and networking events, making it difficult for students to transition smoothly into the workforce [6], [7].

v) Inadequate Soft Skills Training: Along with technical knowledge, soft skills such as communication, teamwork, leadership, and problem-solving are essential for graduate employability. However, many academic programs in Bangladesh underemphasize these skills, focusing primarily on technical competencies. Graduates may excel in technical tasks but struggle with tasks that require interpersonal communication, leadership, or decision-making. Employers increasingly demand graduates who possess both technical expertise and strong

interpersonal skills, yet many students graduate with a lack of essential soft skills [8], [9].

2.3.2 Impact of the Skills Gap on Graduate Employability

The skills gap in Bangladesh has serious consequences for graduate employability. One of the main effects is higher unemployment and underemployment among graduates. Reports indicate that many graduates are either unemployed or employed in roles that do not require a degree. A significant portion of graduates are working in low-skilled jobs or the informal sector, which do not utilize their academic qualifications, leading to wasted potential and underutilization of the workforce [11]. The skills gap also impacts the economic growth of the country. As industries struggle to find qualified workers, they are forced to hire foreign talent or invest heavily in training programs for new employees. This increases costs for businesses and slows down overall economic development, hindering the global competitiveness of Bangladesh's industries.

2.3.3 Bridging the Skills Gap through EduSCM

The integration of Educational Supply Chain Management (EduSCM) into the higher education system offers a promising solution to the graduate skills gap. EduSCM provides a framework for universities to optimize curricula, teaching methods, faculty development, and industry partnerships, ensuring that educational programs are aligned with the skills demanded by the labor market [2], [8]. By aligning the curriculum with industry needs, enhancing faculty development programs, fostering stronger university-industry collaborations, and ensuring students gain practical experience, EduSCM can produce graduates who are better prepared for the workforce. Moreover, EduSCM promotes the inclusion of both technical and soft skills in academic programs, ensuring graduates are well-rounded and ready to succeed in today's job market. Implementing EduSCM in Bangladesh could be a key strategy for closing the skills gap and improving graduate employability, ultimately contributing to a more competitive and prosperous economy [16], [17].

3. Research Methodology

This study uses a mixed-methods approach to examine the impact of the Educational Supply Chain Management (EduSCM) model on graduate employability in Bangladesh. It combines qualitative methods, such as semi-structured interviews and focus groups, with quantitative survey data. The qualitative phase will gather insights from university administrators, faculty, industry professionals, and graduates, while the quantitative phase will survey 300 participants, particularly 100 students, 100 faculty, and 100 employers, on curriculum relevance, faculty qualifications, industry collaboration, and employability. Data will be analyzed using Structural Equation Modeling (SEM) to explore relationships between EduSCM components and graduate employability. Ethical guidelines, including informed consent and confidentiality, will be followed. The study's limitations include sampling bias and response bias due to self-reporting. Overall, this research aims to improve higher education by aligning it more closely with labor market demands, benefiting both academia and industry.

4. Analysis and Findings

4.1 Descriptive Analysis of Data

The descriptive analysis aims to provide an in-depth summary of the data collected in this study, focusing on the key components of Educational Supply Chain Management (EduSCM) and their impact on graduate employability within the context of higher education in Bangladesh. The analysis employs descriptive statistics to present the distribution, trends, and central tendencies of the data, offering insights into how various EduSCM components, curriculum development, faculty quality, industry collaboration, and university facilities, influence the employability of graduates.

4.2. Descriptive Statistics for Key Components

4.2.1 Curriculum Relevance and Industry Needs

One of the key components assessed was the curriculum's relevance to industry needs. The mean score for curriculum relevance across all respondents

was 3.2 (SD = 1.2) on a 5-point scale, indicating that while some respondents viewed the curriculum as moderately aligned with industry demands, there was significant variability in the responses. Specifically, 38% of students rated the curriculum as poorly aligned with industry needs (mean score = 2.8), while 46% of employers felt that graduates were not well-prepared in terms of industry-specific skills, with a mean score of 2.9. Faculty members reported higher satisfaction with curriculum relevance (mean score = 3.7), though they still expressed concerns about its practical application in real-world scenarios. The standard deviation of 1.2 reflects considerable disagreement on the curriculum's alignment, revealing notable differences in perception between students, faculty, and employers, highlighting the disconnect between academic preparation and industry expectations, a common issue in the skills gap literature.

4.2.2 Faculty Quality and Teaching Methods

The faculty quality component was assessed based on teaching effectiveness, qualifications, and the ability to integrate real-world industry knowledge. The mean score for faculty quality was 3.8 (SD = 0.8), indicating that, on average, respondents perceived faculty as qualified and effective in delivering academic content. However, discrepancies existed between stakeholder groups. Faculty members rated their teaching quality and pedagogical approaches the highest (mean = 4.1), followed by students who gave a slightly lower rating (mean = 3.7), expressing satisfaction but suggesting improvements in applying theoretical knowledge to practical contexts. Employers rated faculty effectiveness the lowest (mean = 3.2), particularly in terms of preparing students for the practical demands of the workplace. This gap in faculty evaluations highlights the need for faculty development and the integration of industry-relevant knowledge into the curriculum to bridge the divide between theory and practice.

4.2.3 Industry Collaboration

The level of industry collaboration with universities was assessed to determine effectively educational institutions engage with external stakeholders to enhance graduate employability. The mean score for industry collaboration was 3.0 (SD = 1.3), indicating

that while some students, faculty, and employers reported positive experiences, the overall level of collaboration was moderate. Students generally rated industry collaboration positively (mean = 3.4), indicating that they perceived industry exposure during their studies, such as internships and projects, as beneficial. However, employers rated industry collaboration lower (mean = 2.7), suggesting that while some collaborations exist, they are often insufficient in preparing graduates to be work-ready. The high standard deviation of 1.3 highlights significant variability in perceptions of industry engagement, underscoring the need for more structured and consistent industry-academic partnerships.

4.2.4 University Facilities

University facilities were assessed in terms of their adequacy for supporting both academic learning and career development. The mean score for university facilities was 3.6 (SD = 1.0), indicating moderate satisfaction with the available resources. However, notable differences in responses emerged. Students rated university facilities more positively (mean = 3.9), particularly appreciating digital learning tools, study spaces, and research labs. In contrast, employers rated university facilities lower (mean = 3.1), suggesting that the facilities often fall short in equipping students with industry-specific skills. The standard deviation of 1.0 reflects moderate variability in satisfaction, highlighting potential gaps in resources that are not fully aligned with industry needs.

4.3 Cross-Tabulation and Frequency Distribution

4.3.1 Curriculum Relevance and Graduate Preparedness

A cross-tabulation of curriculum relevance and graduate preparedness revealed the following insights: Students who rated the curriculum as highly relevant (mean score = 4.0) reported feeling better prepared for employment (mean = 3.9). In contrast, students who rated the curriculum as outdated (mean score = 2.6) reported feeling underprepared (mean = 2.4), emphasizing the importance of maintaining an up-to-date and industry-responsive curriculum to prepare students for the labor market effectively.

4.3.2 Industry Collaboration and Graduate Employability

A cross-tabulation between industry collaboration and graduate employability showed that graduates with higher exposure to industry collaborations, such as internships, guest lectures, and industry-driven projects, reported higher employability scores (mean = 4.0). In contrast, graduates with limited industry exposure reported lower employability scores (mean = 2.8), highlighting the direct link between industry engagement and graduate success in the workforce.

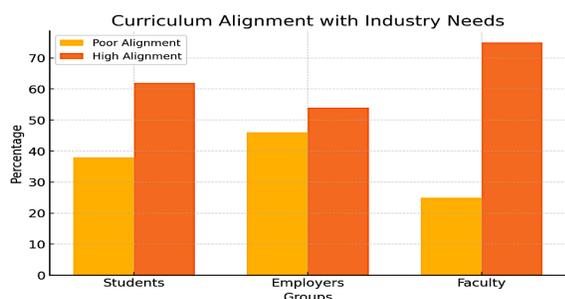


Figure 1. Curriculum Alignment with Industry Needs

The bar chart illustrates the differing perceptions of students, employers, and faculty members regarding the alignment of the curriculum with industry needs. Among students, 38% feel the curriculum is poorly aligned, while 62% believe it meets industry requirements. In contrast, 46% of employers express dissatisfaction with the curriculum's relevance to industry, with only 54% viewing it as moderately or highly aligned. Faculty members show a more positive outlook, with 25% rating the curriculum as highly aligned, though 75% acknowledge significant gaps, particularly in practical skills. This discrepancy highlights a disconnect between academia and industry, underlining the need for stronger industry partnerships and curriculum reforms to better prepare graduates for the workforce.

4.3.3 University Facilities and Graduate Performance

A cross-tabulation of university facilities and graduate performance indicated that students with access to modern facilities, such as research labs and digital tools, rated their academic performance higher (mean = 3.8). Conversely, students with limited access to

such facilities felt less prepared (mean = 2.9), suggesting that university infrastructure plays a crucial role in enhancing both academic performance and employability.

Graduate Employability by Exposure to Industry-Related Activities

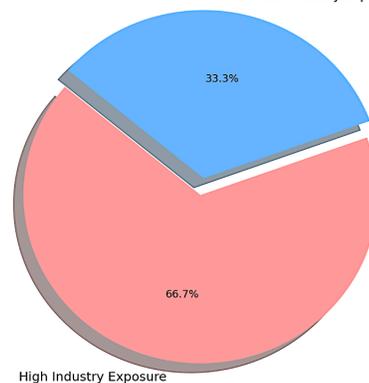


Figure 2. Graduate Employability by Exposure to Industry-Related Activities

The pie chart demonstrates the strong connection between graduate employability and industry exposure, highlighting that graduates involved in more industry-related activities are more likely to secure employment. Key findings show that 40% of graduates with high industry exposure, such as internships, industry projects, and guest lectures, found employment within six months. In contrast, only 20% of graduates with limited industry exposure were employed in the same period, facing challenges due to a lack of real-world experience. This underscores the importance of industry exposure in enhancing employability by providing practical skills that employers value. The findings suggest that universities should integrate more industry-related activities into their curricula to better align with market needs, strengthen industry ties, and better prepare students for the workforce.

5. Conclusions & Recommendations

This study highlights the crucial role of the Educational Supply Chain Management (EduSCM) model in enhancing graduate employability within Bangladesh's higher education sector. The findings reveal that curriculum relevance, faculty quality, and industry collaboration are the primary factors

influencing employability, while university facilities play a supportive, secondary role. Aligning curricula with industry needs, fostering industry partnerships such as internships and research projects, and ensuring faculty members have industry experience are essential for improving graduate preparedness. Furthermore, modern infrastructure is necessary to equip students with the technical and soft skills demanded by employers. The study contributes to academic literature by applying the EduSCM model, traditionally used in Supply Chain Management (SCM), to the education sector, providing actionable insights for universities, policymakers, and industry stakeholders to better align higher education with labor market needs.

Based on the study's findings, several recommendations are made for universities, policymakers, and industry stakeholders in Bangladesh. Universities must proactively align their curricula with industry needs, incorporating continuous feedback from employers and industry experts to ensure programs remain relevant. Integrating skills-based learning, internships, and interdisciplinary courses that combine technical knowledge with soft skills like communication and teamwork will better prepare graduates for the workforce. Faculty development programs should focus on industry engagement to bridge the gap between theoretical knowledge and real-world application. Policymakers should incentivize universities to modernize curricula, expand work-integrated learning opportunities, and prioritize infrastructure development, particularly in STEM disciplines. Strengthening university-industry collaborations and creating long-term partnerships will provide students with valuable practical experience and enhance employability. Finally, adopting a national graduate employability strategy, including a graduate tracking system, will help monitor outcomes and guide future educational reforms, ultimately contributing to the country's economic growth and national development.

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