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Academic Research in Universities of an Emerging Country: Trends and Future Directions for Higher Education

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Abstract

This study explores the status of academic research in Bangladeshi universities from 2017 to 2022, identifies significant obstacles impeding research quality and impact, and proposes practical strategies to enhance university–industry collaboration (IAC). Using a convergent mixed-methods design, we gathered a Scopus-based analysis of peer-reviewed publications alongside focus group discussions that included faculty members, researchers, and academic administrators. The results show a huge increase in the number of publications (from 1,674 in 2017 to 12,843 in 2022) and changes in how institutions contribute, with private universities becoming some of the biggest contributors. Despite some quantitative gains, the quality of research and its global visibility suffer because of a lack of funding, short infrastructure, brain drain, inadequate incentives, and cultural barriers. Uneven digital tool advocacy, administrative roadblocks in grant administration, and growing interest in industry-engaged research were all identified by thematic analysis of focus group discussions. Using these insights as a foundation, we offer an IAC framework that assumes measurable results for industry and academies, engagement modes (knowledge exchange, R&D, training, consultation, and commercialization), and prerequisites (resources, structure, and commitment). Targeted research funding, research-integrated curricula, capacity-building initiatives, open incentive structures, and conflict-interest-prevention governance are examples of policy commendations. Bangladesh can convert increasing publication counts into long-term research excellence and socioeconomic impact by coordinating institutional reforms with national development goals. In order to improve the nation's research ecosystem, this paper provides policymakers, academics, and business partners with an evidence-based road map.

Keywords: Academic Research, Emerging Country, Focus Group Discussion, Industry-Academia Collaboration (IAC), Research Trends.

Introduction

In the realm of academia, the debate between teaching and research resonates through the corridors of universities, which serve as crucibles for societal transformation. In developed countries, research takes center stage in their missions, driving intellectual progress and innovation. Research, for these nations, transcends mere skill acquisition; it embodies a collaborative mindset among university administrations, industry partners, professors, students, and government bodies. Whether qualitative, quantitative, or both, research offers insights into our world and innovative solutions to challenges, and investing in research and development (R&D) is vital for nations to gain a competitive edge. Developed nations exhibit significant national research funding, robust infrastructure, flexible researchers, and solid educational foundations supporting R&D activities. Global R&D spending reached $2.3 trillion in 2021, underlining its crucial role in driving innovation (1). Conversely, in many developing countries, such as Bangladesh, while teaching seems predominant, research—encompassing scientific discoveries, scholarly pursuits, and creative endeavors—often receives less recognition. The higher education sector in Bangladesh, for instance, is yet to transition into a research-driven knowledge economy that fosters global competitiveness. Despite recent advance-ments, including a notable increase in university publications from around 8,000 in 2020 to over 11,000 in 2021 as per the University Grants Commission (UGC) of Bangladesh (2021), driven by the expansion of private universities and a

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rising number of Bangladeshi students pursuing Doctor of Philosophy (PhD) abroad, the country's research output still falls short of global standards (2). Research in Bangladeshi universities faces multifaceted challenges. First, inadequate funding, insufficient research infrastructure, and limited international collaboration hinder university-based research efforts (3, 4). For instance, research spending across universities constitutes merely 1 percent of their overall budgets, exemplified by Chittagong University's allocation of 1.52 percent for research in 2021-22. In 2020, public universities collectively expended Tk 72.91 crore on research, with a minimal financial commitment to research by institutes such as Central Women's University and ASA University Bangladesh in 2022 (5). Additionally, the issue of brain drain exacerbates these challenges as talented individuals tend to seek better opportunities abroad, thereby reducing the pool of qualified researchers within the country.

Second, universities predominantly prioritize undergraduate teaching, adhering closely to a curriculum mandated by the UGC. The curriculum focuses on developing basic student competencies through courses, tests, and grading administered by faculty members. However, this emphasis on teaching often limits opportunities to nurture critical thinking and a research-oriented approach among students and faculty alike. This trend contributes to a lack of interest in pursuing PhD studies within the country. Third, the World Economic Forum is disappointed with the fact that world university rankings in developing countries often neglect important factors like research quality, which influences higher education decision-making (6).

In the Quacquarelli Symonds World Ranking, popularly known as the QS World Ranking, universities are evaluated based on various criteria, one of which is citations per faculty member. This metric calculates "the total number of citations received by all papers produced by an institution over five years divided by the number of faculty members." Massachusetts Institute of Technology (MIT), for instance, achieved a perfect score of 100 in this category. Comparing universities in the Indian subcontinent, which share similar economic contexts, highlights opportunities for improvement among Bangladeshi universities. For instance, Bangladesh University of Engineering and Technology (BUET) scored 7.8 in citations per faculty, notably lower than the Indian Institute of Technology Bombay's (IITB) score of 55.5. Even the National University of Sciences and Technology (NUST) in Islamabad, Pakistan, achieved a slightly higher score of 9.1 (7). The theoretical research improvement would be possible with proper identification of major challenges and explore future directions (4). Addressing these challenges increase scopes of research funding, expand research infrastructure, encourage international collaboration, and prioritize research-induced education in the Bangladeshi universities, and thereby elevate global recognition. Consequently, this article will explore the following research questions: i). What is the current state of research at Bangladeshi universities? ii) What factors and barriers influence academic research in Bangladesh? iii) How can collaboration between industry and universities be enhanced to promote research?

Given the scarce literature on (a) triangulating institutional trends with qualitative insights from academic actors, and (b) proposing an operational framework that universities and industry are able to use to co-design research agendas, this present paper aims to fulfill three categorical research gaps by: i) mapping recent shifts (2017–2022) among institutions and disciplines; ii) explaining those trends through intensive stakeholder discourse; and iii) proposing an pragmatic Industry–Academia Collaboration (IAC) framework customized for Bangladesh's institutions.

Trends of University Research

In Bangladesh, universities are categorized into four main types: public (government-owned and subsidized), private (owned by the private sector), international (operated and funded by international organizations like the Organization of Islamic Cooperation), and Cross Border Higher Education (CBHE), which includes study centers or branch campuses managed by top global universities. The primary areas of focus for research in Bangladeshi universities include engineering, medicine, business, economics, and computer science (8). There is also a rising trend in multidisciplinary research collaborations between diverse disciplines, such as engineering, social sciences, humanities, natural sciences, health sciences, and agriculture.

The country has 55 public universities and 112 private universities approved by the UGC. The number of private universities is continuously increasing, indicating significant growth in the sector compared to the country's geographic size (9). Following the expansion of private universities and an uptick in Bangladeshi students pursuing doctoral studies abroad, academic research output surged to over 11,000 publications in 2021 from approximately 8,000 in 2020, as reported by the UGC of Bangladesh (2021) and The Business Standard (2022). The growth is, however, still falling short of benchmarks set by developed nations.

In developed countries such as the USA, the corporate sector drives 85% of R&D, focusing predominantly on applied research and experimental development. Conversely, in academic settings, two-thirds of every dollar allocated to academic R&D funding supports basic research aimed at generating new knowledge. The interconnectedness of research and teaching is evident among global universities, as seen in the substantial research funding allocations of top-notch universities like MIT and Oxford, where research expenditure correlates with institutional rankings.

The significant underinvestment in research activities within Bangladeshi universities, both public and private, cannot be ignored. Challenges persist in developing student creativity and research capacity, exacerbated by inadequate resources, outdated curricula, and administrative constraints, further hindering the research ecosystem in Bangladesh. This contrasts with a global trend where educational institutions worldwide increasingly prioritize soft skills such as teamwork, problem-solving, critical thinking, communication, negotiation, and decision-making (10, 11). Unfortunately, only a limited number of universities in Bangladesh actively engage in substantive research efforts, highlighting the need for broader initiatives to foster a culture of research and innovation across the educational landscape. Typically, faculty members bear the financial expenses of research through grants obtained from different agencies or foundations or enterprises.

Universities also invest in equipment and facilities to support specific research activities. The inadequate allocation of funds for research within the education sector is a significant concern in Bangladesh. Currently, expenditure on education stands at 1.83% of Gross Domestic Product (GDP), well below the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s recommended benchmark of 6% of GDP (Prothom Alo Editorial, 2023). This shortfall in investment has contributed to an obvious decline in the quality of higher education, exacerbated by an overly business-centric approach that sidelines R&D.

In 2020, among 150 public and private universities, 35 did not allocate any funds for research, and 44 universities spent up to Tk 1 million on research activities. This disparity highlights significant challenges in research spending and publication output, particularly evident in universities like Islami University and Haji Mohammad Danesh University of Science and Technology, which allocated substantial funds but had minimal publication outcomes. Private universities have outpaced public universities in research expenditure, collectively spending Tk 1.01 billion compared to Tk 360 million by public institutions, according to the UGC. Notably, BRAC University led research spending among private universities, allocating Tk 552.3 million and publishing 378 research articles. Dhaka University was the top spender among public universities, allocating Tk 66.1 million and producing 445 publications. Additionally, private institutions such as Daffodil International University, American International University Bangladesh, University of Liberal Arts Bangladesh, and North South University also made substantial investments in research initiatives. This disparity, however, stresses the need for increased research funding and a more balanced approach to education and research priorities in Bangladesh's higher education sector (12).

Bangladeshi universities also struggle to achieve prominent positions in global university rankings due to inadequate infrastructure and poorly equipped lab facilities. To foster excellence in research and innovation, universities require substantial financial investments in modern facilities and technology. Furthermore, the politicization of education poses a significant threat to the overall quality of university education in Bangladesh (13). The impact of non-financial incentives (promotion, workloads, study leaves, flexible working hours, physical working

environment, and career and professional development) on private university professors' retention level are reflected in several studies (14, 15). The average perception level regarding these incentives stands at 71%. Additionally, factors like limited career prospects, quality of higher education, lack of social security, and restricted freedom of choice have compelled skilled scholars to emigrate permanently, contributing to brain drain (16). In 2023, Bangladesh recorded a brain drain index of 6.8, exceeding the global average of 5.17 (17).

Additionally, there are issues on quality of research, with some researchers pressured to prioritize expediency over rigorous and impactful studies. Less than one-third of university teachers holding PhDs raise concerns about their capability to effectively supervise research activities. A past study revealed that in the Bangladeshi cultural context, critical thinking skills are not adequately cultivated at the tertiary level, which is essential for research (18). Also, despite the theoretical provisions of the Right to Information Act, 2009, accessing real-time primary data remains challenging from various public sector agencies (13). Moreover, the misuse of advanced technologies like Generative Pre-trained Transformer (GPT)-4 by academics and students to complete assignments poses a risk to the development of critical thinking and problem-solving skills (19). This trend undermines the integrity and value of research outputs within the country's academic institutions, thereby diminishing their competitiveness in the global arena.

Importance of University Research

Research impact, defined by the Research Excellence Framework, denotes the substantial benefits of fundamental and applied research beyond academia, spanning the economy, society, culture, public policy, health, environment, and quality of life. First, research impact helps elevate the institutional ranking and reputation of universities, enhancing competitiveness and attractiveness to top talent. Second, fostering scientific partnerships between multidisciplinary teams facilitates knowledge sharing and accessibility of research outcomes to stakeholders. Table 1 illustrates how stronger research capacity produces discrete but intertwining reimburse-ments across stakeholders. Such reimbursements stress on the holistic benefits of solidifying research ecosystems. In fact, the research excellence has spillover effects to government and community levels too, buttressing innovation and sustainable advancement.

Table 1: Benefits of Research

Beneficiaries	Research Strength
Universities (20, 21)	Greater visibility Enhanced reputation Increased attraction for students, faculty members, grants, and philanthropists
Researchers and Faculty-members (22, 23)	Exposure to cutting-edge knowledge Research opportunities Access to state-of-the-art facilities
Students (20, 24)	Hands-on learning experiences Mentorship by leading scholars Cultivation of critical thinking skills
Government institutions (25, 26)	Heightened prestige Expanded horizons Enriched intellectual capital
Society (27, 28)	Guided to solutions for complex global challenges Fostered resilience Illuminates the path of progress for a brighter future

Third, a research-oriented approach of universities enables them to effectively address global issues. For instance, management professors and researchers possess unique capabilities to tackle societal issues related to individuals, behaviors, organizations, and

institutions, thereby promoting inclusivity. A real-life inspiration is reflected in the collaborative efforts between Oxford University and AstraZeneca, developing the Oxford/AstraZeneca COVID-19 vaccine, demonstrating the transformative power of research. Similarly, effective breast cancer treatments have been pioneered by the researchers at University College London (1). The imperative of transforming universities into research hubs for national development was emphasized by Former education minister of Bangladesh, Dipu Moni in 2022. Having a clear strategic focus on research can foster meaningful impact and pave the way for transformative progress in various sectors of the country's economy and society.

Research yields substantial benefits at the micro-level through the establishment of a well-defined research agenda. This agenda is crucial for transforming universities into strategic partners for development, ensuring that their research directly addresses the evolving needs and challenges of the nation. By aligning research initiatives with national priorities, universities can play a proactive role in driving innovation, fostering economic growth, and enhancing societal well-being.

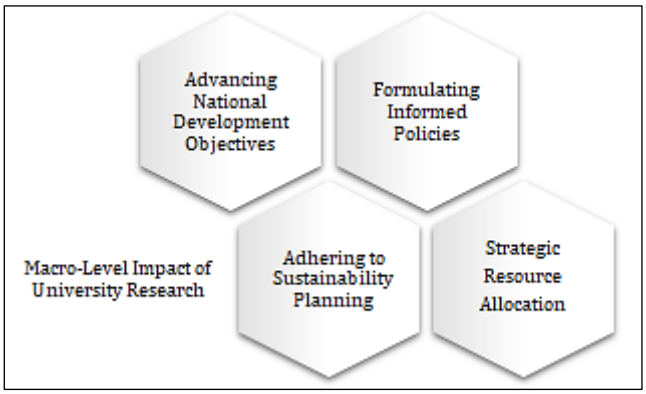

Figure 1: Significance of University Research in Bangladesh

As Figure 1 depicts, university-led research in Bangladesh is critical to formulate and implement the national policy. Evidence-based investigations conducted in universities play imperative role in governance and sustainable social and economic development. A holistic research agenda can foster evidence-based governance and enhancing policy outcomes. It also impacts faculty development by cultivating human resources in critical areas of impact and attracting talented researchers, which could help mitigate brain drain and contribute to a vibrant research ecosystem. Therefore, adequate research requires strategic allocation of funding by the government. In fact, enhancing global research collaboration hinges on a strategic research agenda that demonstrates Bangladesh's commitment to addressing global challenges and advancing knowledge. Such initiatives can attract international collaborations and elevate the country's academic reputation.

Methodology

This study employed a mixed-method approach, combining a literature review with focus group discussions to comprehensively explore the domain of academic research in the universities of Bangladesh. A convergent mixed-methods approach was applied to apprehend the macro-level publication trends and the micro-level stakeholder standpoints. While the review (quantitative) delivers objective measures of research volume, thematic focus, institutional contributions, and collaboration outlines, the focus group discussions (qualitative) explicates the contextual drivers, lived experiences, and institutional processes working backstage to those trends. Merging these tactics in a convergent design strengthens internal validity through triangulation and enables practical recommendations grounded in both empirical patterns and stakeholder insight (29). This design is also justified for policy-relevant research as it associates observed shifts with institutional practitioners' narratives. This dual methodology

enabled a comprehensive understanding of existing research and provided in-depth insights from key stakeholders (30, 31).

Literature Analysis Method

The literature analysis aimed to establish the current state of knowledge on the research theme by reviewing relevant scholarly articles (32, 33).

Data Collection

Database: The Scopus database was chosen for its comprehensive coverage of scholarly literature across various disciplines.

Scopus search and selection criteria. Scopus searches have been conducted by means of the following search thread: "TITLE-ABS-KEY (("Bangladesh" OR "Bangladeshi") AND (research OR study OR "university")) AND PUBYEAR > 2017 AND PUBYEAR < 2022"

Exclusion criteria: Book chapters, editorials, conference papers, perspectives, white papers, notes, and non-English items.

Inclusion Criteria: Only peer-reviewed articles published between 2017 and 2022 were considered.

Relevance: Articles directly addressing the current research aspects related to Bangladeshi universities were selected for synthesis.

Language: Articles written in English were included to ensure accessibility and relevance to the current study.

Data Synthesis

In conducting the literature analysis, selected articles were subjected to rigorous scrutiny to extract pertinent information. This process involved identifying and synthesizing key themes, trends, and findings from the literature. Insights gleaned from these articles played a crucial role in discerning potential future research directions relevant to the study's scope. By systematically analyzing the literature, the study aimed to provide a comprehensive overview of the research settings in Bangladeshi universities while suggesting pathways for advancing scholarly inquiry in the future.

Focus Group Discussion (FGD) Procedure

To enrich the literature review and acquire current insights, focus group discussions were conducted (34, 35). A total of nine participants were purposefully selected to ensure a range of ages, genders, and professional levels.

Participant selection and Recruitment

Participants were carefully selected to ensure diversity across career stages, university types (public and private), disciplines, and administrative roles. The inclusion criteria was existing faculty members, researchers, or academic administrators of Bangladeshi universities, who have been actively engaged in research or research management within the past three years, and willing to join a 120-minute online discussion (36). Invitations were circulated via institutional emails and professional networks such as LinkedIn. Some nine individuals who met the criteria were eligible to participate. Before the focus group, each participant received an information sheet outlining the study's aims, how confidentiality would be maintained, and their right to withdraw at any point in time. Audio recording was done only with their permissions, and all transcripts were made sure to anonymize during analysis to ensure their privacy.

The FGD was conducted online and moderated by two researchers of the current research team. A semi-structured discussion guide was developed based on the literature review findings and the study's research questions. Discussions were audio-recorded with participants' consent and transcribed verbatim. Transcripts were analyzed thematically (37, 38) to uncover recurring themes and insights (39, 40). The semi-structured format provided flexibility in responses while ensuring comprehensive coverage of relevant topics (41).

Data Integration and Analysis

The findings from the literature review and focus group discussions were synthesized using a convergent parallel design (42). This approach facilitated data triangulation, thereby enhancing the validity and comprehensiveness of the study's findings (43). Emerging themes from both methods were compared and contrasted to develop a comprehensive understanding of academic research in Bangladeshi universities.

Ethical Considerations

All focus group participants provided informed consent, and measures were taken to ensure their anonymity throughout the research process. Participants were specifically chosen from faculty members currently employed at Bangladeshi universities.

Results

Literature Analysis

The analysis focus on exploring research trends spanning the period from 2017 to 2022 to capture recent developments and trends in academic research within Bangladeshi universities retrieved from the literature. By doing this, the study aims to highlight significant advancements, challenges, and emerging opportunities in the academic research sector of Bangladesh.

Research Trend: 2017-2022

The rise in research output from Bangladeshi universities signals a positive advancement for the country's higher education system, as indicated in table 2. The generation of high-quality scholarly work published in reputable academic journals is illustrated in Table 2. The trend shown on the table holds implications for Bangladesh's long-term economic development, given the importance of having a robust research foundation for fostering innovation and technological progress.

Table 2: Research Trend of Bangladeshi Universities (2017 to 2022) as per Scopus Database (44)

Year	Number of Publications	h-index	Average citation rate
2017	1,674	168	1.25
2018	5,739	23	3.32
2019	6,363	173	11.8
2020	8,140	214	12.4
2021	11,477	106	12.7
2022	12,843	1317	12.1

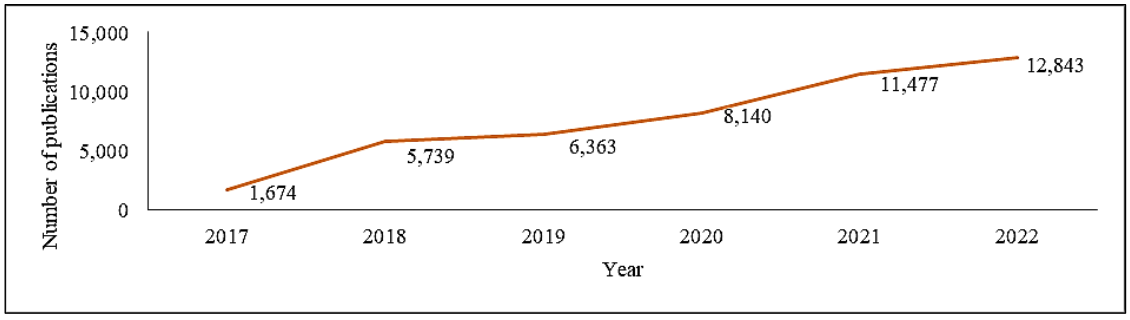

Figure 2: Number of Publications

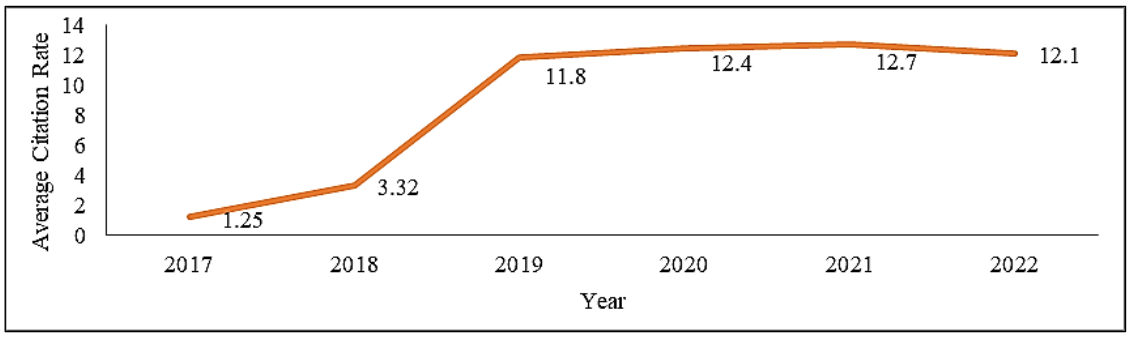

Figure 3: Average Citation Rate

As depicted in Figure 2, the number of publications has demonstrated a steady upward trend over 2017 to 2022 in Bangladesh. The growth of research productivity and institutional research capacity and inter-university-collaboration is reflected.

The Figure 3 illustrates the average citation rate for Bangladeshi university researchers, which shows a steep upward curve from 1.25 in 2017 to 11.8 in 2019, sparks a substantial enhancement in both research visibility and impact. From 2019 onwards, the rate continued to rise moderately, reaching 12.7 in 2021, before slightly declining to 12.1 in 2022. The trend in general shows a positive global reach of published work over the given period.

This increase can be attributed to several key factors. First, a notable improvement in government investment in higher education, which has reinforced research infrastructure and faculty development across institutions was found. Second, extended access to international research networks has enabled Bangladeshi researchers to collaborate more widely with global peers, fostering knowledge exchange and enhancing research quality. Third, strengthened partnerships between universities and industry have facilitated joint research initiatives, covering the academic endeavors with practical applications and industry needs. Fourth, both governmental and private sectors have increased funding support for research projects to conduct impactful studies. Lastly, fostering heightened awareness of the crucial role of research among faculty members and students to promote a culture of curiosity and innovation within academic settings is found. These factors collectively contribute to the growing research capacity of Bangladeshi universities, positioning them as vital drivers of national progress through in knowledge-based economy. In line with this, table 3 presents the publications patterns of the top five universities in Bangladesh in 2017 that demonstrate varied research strengths across disciplines. By reflecting various domains' output, the figure shows a shift toward globally germane and multi-disciplinary academic yield.

Table 3: Top Five Universities and Primary Research Areas in Bangladesh (2017)

Rank	University	Publications	Research Area	Publications
1	University of Dhaka	428	Engineering	376
2	BUET	348	Science	355
3	Jahangirnagar University	291	Medicine	279
4	Chittagong University	247	Social sciences	232
5	Rajshahi University	216	Humanities	183

Table 4 lists the top five universities with the highest scholarly publications in 2018 and the most prolific research areas. The table is organized to show (a) each university's publication count, and (b) the top research fields contributing to that output, allowing readers to see both institutional productivity and disciplinary strengths simultaneously (15).

Table 4: Top Universities in publication and research areas in 2018

Rank	University	Publications	Research Area	Publications
1	University of Dhaka	1,653	Engineering	1,807
2	BUET	1,251	Medical sciences	1,400
3	ICDDRB	1,039	Social sciences	937
4	Jahangirnagar University	925	Natural sciences	656
5	Chittagong University	896	Agricultural sciences	523

As shown in Table 5, the University of Dhaka leads in research output, BUET follows, while Jahangirnagar University ranks third, outrivaling in Computer Science. Chittagong University and Rajshahi University contribute sturdily in Social Sciences and Agricultural Sciences, respectively, glistening Bangladesh's growing research diversity across major academic domains (15, 45).

Table 5: Top Universities in Publication and Research Areas in 2019

Rank	University	Number of Publications	Research Area	Number of Publications
1	University of Dhaka	1,341	Medicine	1,783
2	BUET	1,058	Engineering	1,501
3	Jahangirnagar University	722	Computer Science	1303
4	Chittagong University	623	Social sciences	1158
5	Rajshahi University	554	Agricultural sciences	1052

Table 6: Top Universities in Publication and Research Areas in 2020

Rank	University	Publications	Research Area	Publications
1	University of Dhaka	1659	Medicine	2,173
2	BUET	1295	Engineering	1824
3	Jahangirnagar University	937	Computer science	1581
4	Chittagong University	776	Agricultural sciences	1145
5	Rajshahi University	672	Social sciences	975

As shown in Table 6, the five universities of Bangladesh with the highest scholarly publications in 2020 reflect how Bangladesh's universities are diversifying their research portfolios and enhancing their global visibility through discipline-focused academic productivity (46, 47).

Table 7 lists the five universities with the highest scholarly publications in 2021 and the dominant research areas that contributed to their output that year. These results highlight Bangladesh's continued progress toward research excellence, with universities consolidating their expertise in both traditional and emerging disciplines (47).

Table 7: Top Universities in Publication and Research Areas in 2021

Rank	University	Publications	Research Area	Publications
1	University of Dhaka	1,246	Engineering	2368
2	BUET	693	Medicine	2305
3	Rajshahi University	620	Computer science	2136
4	Jahangirnagar University	586	Social sciences	1568
5	Chittagong University	553	Agricultural sciences	1245

Table 8 presents the five universities with the highest number of scholarly publications in 2022, along with the foremost research areas driving their outputs (47). This illustration provides a useful insight into the evolving academic strengths of these institutions, revealing trends in research priorities and emerging fields of study that shaped scholarly contributions during that year.

Table 8: Top Universities in Publication and Research Areas in 2022

Rank	University	Publications	Research Area	Publications
1	University of Dhaka	1293	Engineering	2997
2	Daffodil International University	899	Medicine	2563
3	BUET	777	Computer science	2516
4	Jahangirnagar University	655	Environmental science	1979
5	North South University	582	Agricultural sciences	1578
6	Rajshahi University	570	Social Science	1357

Based on the analyses of tables 3 to 8, it is evident that the University of Dhaka and Bangladesh University of Engineering and Technology consistently lead in academic research article publications. Until 2021, Jahangirnagar University, Rajshahi University, and Chittagong University held the 3rd and 4th positions in research publications in Bangladesh. However, there were notable changes in 2022 with the inclusion of two new universities. Daffodil International University now ranks 2nd, while North South University ranks 5th in research publications. As a result, public universities in Bangladesh continue to dominate the top five positions in research publications, reflecting a slight shift in rankings in 2022. Based on the analysis of research areas, it is clear that the field of science, particularly engineering, consistently holds the top position in terms of research publications across the years, except for 2019, when Medicine took the lead. Medicine consistently secures the second position in this study. Following closely behind are Computer Science, Environmental Science, and Agriculture Science, with minor fluctuations in rankings over time. It is noteworthy that Social Science occasionally occupies the fourth position, as observed in 2019, and the sixth position in 2022. This underlines the significant role of engineering researchers, despite other disciplines falling under the broader category of science.

Engineering emerged as the top-producing field for research publications in the United States, with over 100,000 papers published in 2022, according to a past study (48). Similarly, engineering has

been highlighted as the second-most-funded field for research in Europe, with over Euro 20 billion invested in 2021, based on a previous research (49). These findings accentuate the substantial investment in engineering research across different regions. These studies suggest that engineering is a vital field of research that is making significant contributions to society. The continued growth of engineering research is essential for addressing the challenges of the 21st century, such as climate change, poverty, and disease. The next section focuses on providing a detailed overview of the research status in 2022.

In-depth Research Trend

The research landscape of 2022 to examine the academic research focus of Bangladeshi universities is discussed next. Year 2022 is analyzed specifically due to the availability of the latest data during our data collection period.

Top 15 Researchers

According to the Scopus database, Emran, T.B. has authored the highest number of publications in 2022, with a total of 167 contributions. Following closely, Ahmed T and Hasan MM secured the second and third positions with 103 and 93 publications, respectively.

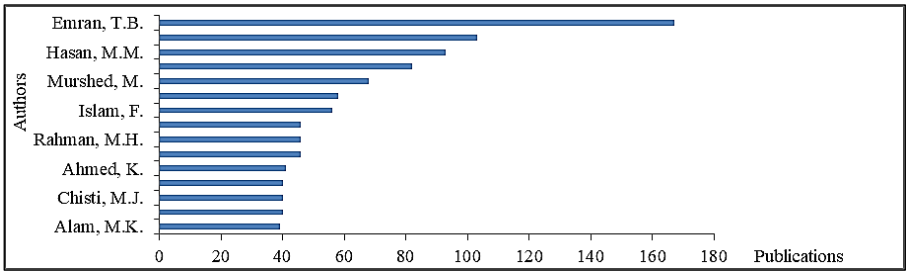

Figure 4: Author-wise Scopus publications (Scientific Bangladesh, 2023)

Figure 4 displays the productive scholars in Bangladesh in 2022 with their number of publications to offer insight into disciplinary headship and institutional affiliation. This visualization highlights key contributors to the nation's research landscape, illustrating both individual scholarly impact and the influence of their affiliated institutions on advancing knowledge across diverse fields.

Top 15 Public Universities based on Scopus Publications

Amongst the top 15 public universities in Bangladesh, the University of Dhaka has the highest number of publications (1293) in 2022 as per Scopus. As shown in Figure 5**,** Bangladesh University of Engineering and Technology (BUET) retained the second position in 2022 with **777** publications**,** while Jahangirnagar University secured the third position with 655 publications**.**

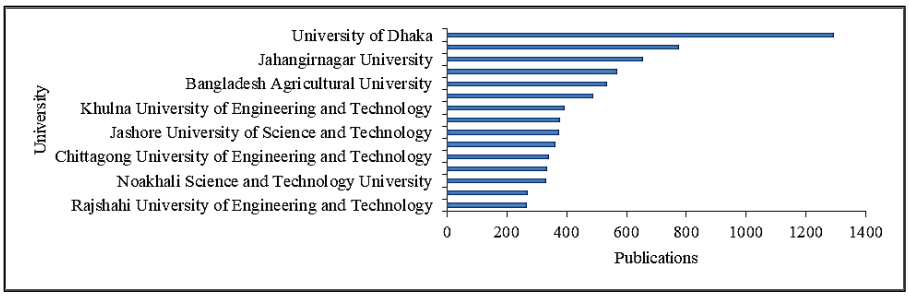

Figure 5: Public University Affiliation-wise Scopus Publications (Scientific Bangladesh, 2023)

Top 15 Private Universities based on Scopus Publications

According to the Scopus database for 2022, Daffodil International University ranks as the highest contributor among the top 15 private universities in Bangladesh, with 899 publications. As illustrated in Figure 6**,** North South University (NSU) emerged as the second highest contributor in 2022 with 582 publications**,** followed closely by BRAC University, which secured the third position with 463 publications**.**

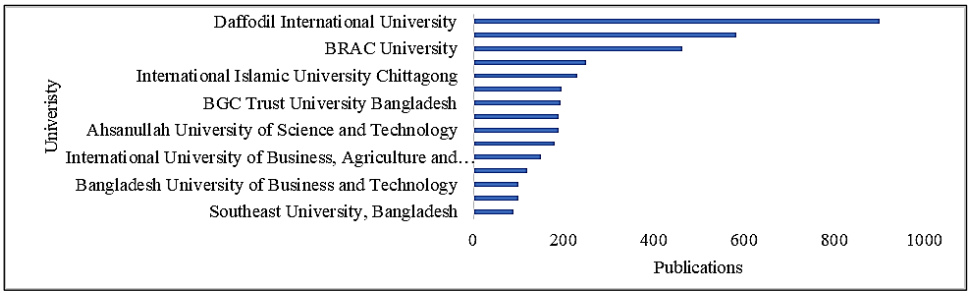

Figure 6: Private University Affiliation-wise Scopus Publications (Scientific Bangladesh, 2023)

Top 15 collaborative countries in Academic Research

The country-wise distribution of Scopus-indexed publications co-authored with Bangladeshi researchers in 2022 is illustrated in Figure 7**.** The USA tops the collaborative authorship, a position supported by established academic bonds, varied funding prospects, and robust networks of Bangladeshi diaspora scholars working in U.S. institutions. China has exceeded Japan in collaborative output, reflecting its intensifying investment in joint research initiatives and escalating regional partnerships. Collaboration with India has also grown progressively, driven by geographical juxtaposition, common socio-economic and environmental challenges, and snowballing cross-border scholarly exchanges.

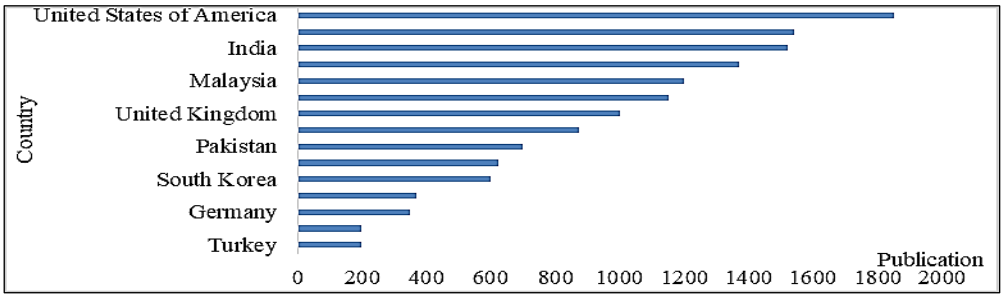

Figure 7: Country-wise Scopus Publications (Scientific Bangladesh, 2023)

Overall, the increase in research output from Bangladeshi universities between 2017 and 2022 has been significant. Key institutions such as the University of Dhaka and Bangladesh University of Engineering and Technology have consistently been at the forefront of research publications, particularly in engineering. There have been notable changes in rankings, with emerging private universities making a strong showing in 2022.

Interpretation and implications of rising publication counts

Factors such as increased institutional capacity (more faculty and PhD holders), the rapid expansion of private universities with active publication agendas, increased engagement with international collaborators, and incentives to publish for visibility and promotion have contributed to increase publications over the years. Quantity gains do not, however, translate into improvements in the quality or impact of research; citation rates and h-index indicators continue to differ among institutions and disciplines, with the social sciences trailing in citations while engineering and medicine dominate output. The growth indicates a shift toward more applied and collaborative modalities. It also indicates a diversification of research types, with a notable increase in applied, problem-driven studies (focused on industry and policy). These subtleties suggest that policy responses should encourage mechanisms that direct publications toward high-impact, societally relevant research while also supporting capacity building (to improve quality).

Analysis

This study examines the implications of the increase in research publications in order to go beyond a purely descriptive summary. It poses the following specific question: is the output increase more indicative of incentive-driven publishing and

promotion requirements, or does it reflect true capacity building through continuous investment in infrastructure, faculty training, and research culture? Whether the growth of research indicates a diversification of knowledge production is equally significant. Though it's unclear how much these fields are ingrained in long-term national priorities, emerging fields like digital finance, gender equity, climate resilience, and ICT-driven innovation point to changing institutional agendas. The situation becomes more complex when collaboration patterns are examined in greater detail. Despite the concerns regarding the strength and reciprocity of these connections, growing co-author networks show that Bangladeshi academics are becoming more and more integrated into international research communities and raise questions such as: 'Do these partnerships promote fair knowledge sharing or do they perpetuate inequalities in which foreign partners control access to resources and agenda-setting?' In a similar vein, the dominance of engineering and medicine, raises questions about whether other important fields, like the social sciences, are being neglected. By analyzing these conflicts, the study goes beyond publication numbers to uncover the forces that mold the research ecosystem, such as who sets priorities, who manages the information flow, and which fields of study are given preference or marginalized. The future of research in Bangladesh hinges on maintaining growth in volume, but also on maintaining inclusivity, balance, and long-term alignment with societal needs, as this critical lens emphasizes. Next, we have delved into the findings of the FGD to explore their implications.

Analysis of the Findings of FGD

The FGD aimed to explore key aspects of academic research in Bangladeshi universities, focusing on trends from 2017 to 2022, perceived challenges and opportunities, and future directions. Engaging nine participants comprising faculty members, researchers, and academic administrators ensured a comprehensive exploration of these themes from varied viewpoints.

Research Trends: 2017-2022

The participants highlighted several significant trends in academic research within Bangladeshi universities over the past five years. Interviewees 1 and 2 commented that "A notable trend was the increasing emphasis on research related to sustainable development and climate change. This shift aligns with global priorities and reflects national policy initiatives aimed at addressing environmental concerns". "Additionally, there has been a rise in collaborative research projects involving multiple institutions and international partners. This trend is driven by the need to tackle complex, interdisciplinary issues and to enhance research capabilities through shared resources and expertise. However, participants noted that while such collaborations are growing, they remain relatively limited compared to more established research networks in other countries." The incorporation of digital technologies and data analytics into research methodologies has emerged as a notable trend. Researchers are increasingly employing sophisticated software and tools for data collection and analysis, thereby enhancing the efficiency and breadth of their research endeavors (34). However, uneven adoption of these technologies persists across institutions, influenced by disparities in access and training levels.

Challenges and Prospects of Research Ecosystem

Participants discussed several challenges faced by academic researchers in Bangladesh. Interviewees 3 and 4 commented that "A primary concern is the limited funding available for research projects. Many researchers struggle to secure adequate financial support, which constrains their ability to undertake extensive and high-impact studies. Furthermore, bureaucratic hurdles and administrative delays in grant management were cited as additional obstacles that impede research progress." Interviewees 5 and 6 commented, "Another significant challenge is the lack of robust research infrastructure and facilities. While some universities have made strides in developing research centers and laboratories, there remains a substantial gap in infrastructure quality and availability across institutions. This disparity affects the ability to conduct high-quality research and publish in international journals." However, the discussion also highlighted several opportunities. Participants observed a rising interest in research collaboration with the private sector and philanthropic organizations, offering alternative funding avenues and backing for pioneering projects (41). Moreover, there is a growing focus on the impact of research and its

alignment with national development objectives, potentially boosting the visibility and practical application of academic research (50).

Enhancing Research Quality and Impact: Future Directions

Regarding future directions, participants suggested several strategies to enhance the quality and impact of academic research in Bangladeshi universities. Interviewees 7 and 8 commented that "One key recommendation was to strengthen research training and capacity-building programs for researchers. Improving skills in research design, data analysis, and grant writing could significantly boost research output and quality".

Furthermore, Interviewee 9 commented that "Enhancing collaboration between universities and industry was emphasized as a critical avenue for improving research impact. By fostering stronger links with the private sector and government agencies, universities could better align their research with real-world needs and contribute more effectively to national development". Lastly, Interviewees 1 and 5 again commented that "Increasing international collaborations and participation in global research networks were seen as essential for elevating the quality and visibility of Bangladeshi research. This includes participating in international conferences, publishing in high-impact journals, and engaging in cross-border research initiatives."

Discussion

Recognizing the transformative power of knowledge is the first step towards societal progress. Policymakers should prioritize research funding to stimulate innovation and effectively tackle societal issues. Introducing project-based annual publication requirements for university professors could significantly enhance the research environment. This approach, similar to initiatives in Malaysia and China, has the potential to boost research productivity, foster a culture of continuous scholarly activity, and elevate academic standards (51-53). Implementing practical solutions based on identified challenges in the literature is crucial for cultivating a robust culture of knowledge production and research in academic institutions. Table 9 outlines key constraints in academic research in Bangladesh and propose multidimensional strategies to mitigate the challenges.

Table 9: Strategies to Address Challenges in Academic Research

Academic Research Challenges	Proposed Strategies
Inadequate funding (54, Interviewee-1and 2)	Increase government funding for research to increase resources for universities (55; Interviewee-1and 2). Establish partnerships with private or international donor organizations to supplement research funding (55; Interviewees 1 and 2).
Insufficient infrastructure (56, 57; Interviewee-2 and 3)	Invest in building well-equipped laboratories, libraries, and modern technology facilities across universities (56; Interviewee-2 and 3). Upgrade existing research infrastructure to meet international standards. Foster collaborations with industry and international institutions to access advanced research facilities (58; Interviewee 2 and 3).
Brain drains of qualified researchers (59; Interviewee-3 and 4)	Establish programs to train and develop local talent to meet research demands. (Interviewee-3 and 4). Create initiatives to retain and attract skilled researchers by improving working conditions and offering competitive salaries (60). Implement policies to promote research-driven tenure and academic promotions (61; Interviewees 3 and 4).
Lack of Incentives (62, 63; Interviewee-5 and 6)	Develop a system of rewards and recognition for outstanding research achievements (Interviewee 5 and 6) Implement policies to attract top researchers by offering competitive grants and research opportunities (64; Interviewees and 6).

Cultural Barriers (65, 66; Interviewees and 8)	Launch public awareness campaigns to highlight the importance and impact of research (67; Interviewees 7 and 8). Collaborate with cultural and community leaders to change perceptions about research as a respectable profession (68; Interviewees 7 and 8). Encourage partnerships with global academic networks to facilitate knowledge exchange and collaboration (69; Interviewee 9). Encourage participation in research studies through community engagement and outreach programs (70; Interviewee 7).

Interconnectedness of Identified Barriers

Barriers found in literature and FGDs create a complex network. Universities' capacity to maintain up-to-date facilities and labs is hampered by inadequate and erratic funding, which consequently reduces research training and opportunities for early-career researchers. Skilled researchers are encouraged to migrate abroad by inadequate infrastructure and limited career opportunities, a Phenomenon known as "brain drain" that diminishes mentorship capacity and lowers the caliber of domestic research. At the same time, inadequate incentive systems, such as promotions that prioritize quantity over quality and a dearth of seed or research grants promote quick, low-impact results. These dynamics are exacerbated by cultural norms that place a premium on risk aversion and heavy teaching loads, creating a vicious cycle that makes it more difficult to convert higher output into highly impactful, globally competitive research. Designing interventions that target underlying causes rather than symptoms requires an understanding of these feedback loops. Table 10 illustrates practical applications, highlighting who should do what to address the intertwined barriers in research capacity and output. This approach aims to create a coordinated effort toward strengthening the nation's research ecosystem.

Table 10: Proposed actions to address the barriers

Stakeholders	Proposed Actions
Universities	Offer seed-fund schemes and competitive grants. Introduce workload models that allocate research time and incentives/ promotion criteria valuing quality and impact. Create institutional offices for research support (grant-writing, ethical approval, database management).
Policymakers/UGC/ Ministry of Education	Earmark targeted research matching funds for strategic sectors and simplify grant disbursement processes to reduce bureaucratic delays. Provide tax incentives or matching funds for industry-sponsored university research and donations.
Industry (Private Sector & Donors)	Co-finance research centers or chairs tied to clear deliverables (technology transfer, workforce training). Offer data access to enable applied projects and real-world validation.

Industry-Academia Collaboration (IAC)

By addressing the challenges, Bangladesh can create a more supportive environment for academic research. Implementing these solutions requires effective university-industry collaboration that will help nurture skilled human resources, foster innovation-driven ecosystem (71, 72) ensuring the production of highly competent graduates (73). To improve industrial processes and develop a workforce with the necessary skills for the Industrial Revolutions, the UGC established an industry-academia collaboration platform in 2022 (74). The program encourages technology transfer, applied research, and industry-led solutions that connect theory and practice by establishing collaborations between private companies and academic institutions.

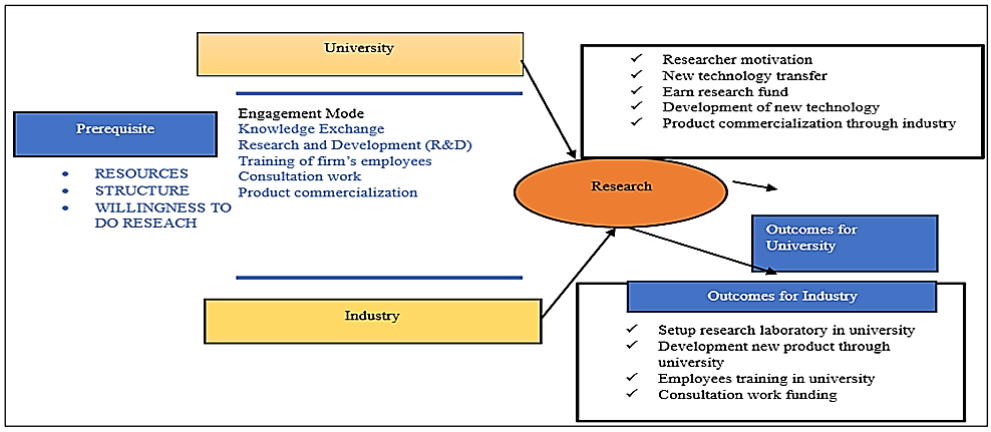

Figure 8: Proposed Model for Industry-Academia Collaboration

The study presents a thorough Industry-Academia Collaboration (IAC) framework in Figure 8 that describes the prerequisites, modes of engagement, and anticipated results of research partnerships after examining global models that demonstrate significant variance in emphases and practices. Figure 8 shows an illustration of the IAC model. By offering funds, resources, and access to cutting-edge facilities and technologies, capabilities that many academic institutions lack, industry–academia collaboration, or IAC, connects university theory with industrial practice. Researchers' and students' capacity to carry out excellent, applied research and to innovate successfully is enhanced by such support.

Top-ranking universities worldwide attract substantial industry funding, with sectors like pharmaceuticals and IT leading investments in academia due to their mutual interest in fostering innovation. For instance, Huawei launched the 'Huawei ICT Academy' to enhance youth skills in emerging technologies through global academic collaborations, including partnerships with five universities in Bangladesh. Boeing engages in critical technology collaborations with leading research universities, while Procter & Gamble collaborates with the University of Cincinnati to advance product and process development using advanced modelling and simulation capabilities. In Bangladesh, BRAC University renamed its engineering school to the BSRM School of Engineering following a significant donation from the BSRM Group of Companies, aimed at supporting academic and research initiatives. These partnerships accentuate the expectation for universities to conduct research addressing industry challenges while leveraging resources and data provided by donors.

Collaborative research projects play a pivotal role in facilitating the exchange of technology and knowledge between academia and industry. This exchange accelerates the commercialization of research outcomes, fostering the development of new products, services, and processes. Moreover, joint research initiatives between academia and industry contribute significantly to the formulation of policies and strategies that promote innovation and drive economic growth. Companies involved in extensive collaboration with universities generally achieve greater innovation, generate higher-quality patents, and launch more successful new ventures, according to the Harvard Business Review. Strengthening such partnership could be imperative for Bangladesh to attain a higher middle-income status by 2026 and overall prosperity by 2041.

Strategic Plan: IAC

Through term papers, theses, and industry-relevant assignments, universities and industry should collaborate to co-design curricula that address market demands and incorporate research-led learning. To avoid excessive commercialization or conflicts of interest in research collaborations, institutions must simultaneously protect academic independence and transparency.

Institutions require clear research policies that combine development, instruction, and research. Departments should work together to integrate experiential research projects into the curriculum. Research productivity and outputs can be increased by implementing institution-level research strategies that address quality assurance,

capacity building, and incentives. By addressing open access, publication fees, ethics and integrity, plagiarism prevention, data management, confidentiality, and explicit authorship and citation guidelines, policy frameworks should foster a publishing culture and safeguard the integrity of research. Research quality and societal impact, not just publication count, should be rewarded by incentives.

By establishing research centers for innovation and entrepreneurship that are tailored to local needs, securing policy support from the UGC and relevant ministries, and enlisting the private sector for funding, internships, and commercialization pathways, universities can create innovation ecosystems with strong leadership commitment and achieve the goals of Vision 2041. Sustainable development will require modifying international best practices to fit Bangladesh's cultural and economic circumstances.

Conclusion

Bangladesh stands at an inflection point: publication volumes are increasing, institutional actors are more engaged, and new private players are contributing to research capacity. To convert this momentum into lasting research excellence, coordinated reforms are needed across funding, infrastructure, incentives, and academic–industry linkages. A sustained long-term vision should aim to (a) create stable research career pathways, (b) build national research infrastructure hubs that serve multiple universities, (c) embed research into undergraduate and postgraduate training, and (d) institutionalize transparent university–industry collaboration models that preserve academic independence while accelerating commercialization and policy impact. With targeted investments and system-level reforms, Bangladesh can leverage its rising scholarly output into high-quality, internationally visible research that drives socio-economic transformation by 2041.

Future studies should incorporate field-normalized citation metrics from 2017 to 2025 and quality-trajectories. Best practices for cooperation and knowledge transfer are distilled from comparative case studies of prosperous university-industry partnerships in Bangladesh. Finding bottlenecks and success factors in converting research into innovation can be achieved by monitoring university spin-offs, patents, and licensing practices.

Abbreviations

FGD: Focus Group Discussion, IAC: Industry–Academia Collaboration, IRB: Institutional Review Board, UGC: University Grants Commission.

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Author Contributions

All authors made equal contributions to this work, including drafting and revising the manuscript. They have all reviewed and accepted responsibility for the entire content and approved the final version of the manuscript.

Conflict of Interest

The authors declare that they have no conflicts of interest relevant to this work.

Declaration of Artificial Intelligence (AI) Assistance

This manuscript was written by the authors without the use of generative AI or AI-assisted technologies. All content is original and has been created by the authors themselves.

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References

1. Morshed AZ, Khan HR, Andaleeb SS. What makes great research? The Daily Star. 2023. https://www.thedailystar.net/opinion/views/news/what-makes-great-research-3285311
2. Rahnuma N. The Bangladeshi higher education quality assurance framework: a pathway for transformation. Quality in Higher Education. 2020 Jan 2; 26 (1):14-31. https://www.researchgate.net/publication/339714547_The_Bangladeshi_higher_education_quality_assurance_framework_a_pathway_for_transformation
3. Monem M, Baniamin H. Higher education in Bangladesh: status, issues and prospects. Pak J Soc Sci. 2010;30(2):293–305.
4. Islam MS. A Deep Dive into the Ranking Struggles of Universities in Bangladesh. E-PERSPECTIVE. 2025.

https://www.perspectivebd.com/article/a-deep-dive-into-the-ranking-struggles-of-universities-in-bangladesh
5. Rahaman KM. Bangladesh has over 150 universities, but are they providing a quality education? Samakal, 2024. https://bdnews24.com/bangladesh/hifwib2mqp
6. Ahmed M. Is Research University an oxymoron? The Daily Star. 2023. https://www.thedailystar.net/opinion/views/news/research-university-oxymoron-3293706
7. Khan AJ. How BUET's position in QS world university ranking improved significantly. The Daily Star. 2022. https://www.thedailystar.net/youth/education/news/how-buets-position-qs-world-university-ranking-improved-significantly-3004906
8. Team E. New Brill Book Calls for a Research University Movement in the Global South - QS GEN. QS GEN. 2025. https://qs-gen.com/new-brill-book-calls-for-a-research-university-movement-in-the-global-south/
9. All Private Universities in Bangladesh [2024 Updated]. BRIT Academy London. BRIT Academy London. 2024. https://bil.ac/private-universities-in-bangladesh/#aioseo-list-of-ugc-approved-private-universities-in-bangladesh
10. Ahmed R. Major Current Problems Faced by Students in Dhaka: Causes, Implications, and Citizen Solutions. Journal of Digital Learning and Distance Education. 2024 Aug 31;3(3):1015-23.
11. Staff Correspondent. Research in private universities and the journey to a better future. The Daily Star. 2023. https://www.thedailystar.net/supplements/private-universities-paving-the-path-the-bangladeshi-youth/news/research-private-universities-and-the-journey-better-future-3482366
12. Panday PK. Why Bangladeshi universities do poorly in global rankings. The Daily Star. 2023. https://www.thedailystar.net/opinion/views/news/why-bangladeshi-universities-do-poorly-global-rankings-3380031
13. Nilsson NA. Incentives, Rewards, and Recognition - What Really Motivates a Researcher? Global Benefits of Open Research. The 2019 MDPI Writing Prize. 2029:1-3. https://www.mdpi.com/books/edition/2199/article/2200-incentives-rewards-and-recognition-what-really-motivates-a-researcher
14. Urme UN, Zaman S. Impact of Work Flexibility, Salary, Reward and Incentive as Retention Strategies Depending on Faculty Gender and Position in the Private Universities of Bangladesh. European Journal of Business and Management. 2019;11(32):60-66.
15. Rashid M. Why are professionals leaving Bangladesh? The Daily Star. 2023. https://www.thedailystar.net/business/economy/news/why-are-professionals-leaving-bangladesh-3420626
16. Utsa TS. The scourge of brain drain. The Daily Star. 2024. https://www.thedailystar.net/business/economy/news/the-scourge-brain-drain-3764876
17. Akhter S. Cultural barriers to critical thinking skills: a case of Bangladeshi ESL classrooms. THT Journal: The Journal of Teachers Helping Teachers. 2019; 7:130-49.
18. Taiyeb FA. What threats does ChatGPT pose to academia?. The Daily Star. 2023. https://www.thedailystar.net/opinion/views/news/what-threats-does-chatgpt-pose-academia-3239911
19. Merga M, Mason S. Early career researchers' perceptions of the benefits and challenges of sharing research with academic and non-academic end-users. Higher Education Research & Development. 2021 Nov 10;40(7):1482-96.
20. Khazragui H, Hudson J. Measuring the benefits of university research: impact and the REF in the UK. Research evaluation. 2015 Jan 1;24(1):51-62.
21. Webber KL, Nelson Laird TF, BrckaLorenz AM. Student and faculty member engagement in undergraduate research. Research in Higher Education. 2013 Mar;54(2):227-49.
22. Sabharwal M, Hu Q. Participation in university-based research centers: Is it helping or hurting researchers?. Research Policy. 2013 Jul 1; 42(6-7):1301-11.
23. Vongsawad CT, Bennion AH, Hollingsworth SP, Terry KN, Dobbs CE, Fronk GH, Neilsen TB. Mentored student research: A case study evaluation of benefits and best practices. The Journal of the Acoustical Society of America. 2022 Oct 1;152(4):2054-72.
24. Sy A, Hayes T, Laurila K, Noboa C, Langwerden RJ, Hospital MM, Andújar-Pérez DA, Stevenson L, Cunningham SM, Rollins L, Madanat H. Evaluating Research Centers in Minority Institutions: Framework, metrics, best practices, and challenges. International Journal of Environmental Research and Public Health. 2020 Nov;17(22):8373.
25. Pencheva I, Esteve M, Mikhaylov SJ. Big Data and AI–A transformational shift for government: So, what next for research?. Public Policy and Administration. 2020 Jan;35(1):24-44.
26. Dahdal S. The benefits of involving undergraduate university students in creative practice-led research projects. International Journal of Educational Reform. 2023 Sep; 32(4):375-95.
27. Florio M, Sirtori E. Social benefits and costs of large scale research infrastructures. Technological Forecasting and Social Change. 2016 Nov 1; 112:65-78.
28. Alazmi AA, Alazmi HS. Closing the gap between research and policy-making to better enable effective educational practice: a proposed framework. Educational Research for Policy and Practice. 2023 Feb; 22(1):91-116. doi:10.1007/s10671-022-09321-4
29. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research. 3rd ed. Los Angeles: Sage; 2017. https://bayanbox.ir/view/236051966444369258/9781483344379-Designing-and-Conducting-Mixed-Methods-Research-3e.pdf
30. Flick U. An Introduction to Qualitative Research. SAGE; 2014. https://dl1.cuni.cz/pluginfile.php/1832172/mod_resource/content/1/Uwe%20Flick%20-

%20An%20Introduction%20to%20Qualitative%20Research%202014.pdf
31. Secundo G, Ndou V, Del Vecchio P, De Pascale G. Knowledge management in entrepreneurial universities: A structured literature review and avenue for future research agenda. Management Decision. 2019 Nov 22;57(12):3226-57.
32. Vick TE, Robertson M. A systematic literature review of UK university–industry collaboration for knowledge transfer: A future research agenda. Science and Public Policy. 2018 Aug 1;45(4):579-90.
33. Mody MA, Hanks L, Cheng M. Sharing economy research in hospitality and tourism: a critical review using bibliometric analysis, content analysis and a quantitative systematic literature review. International Journal of Contemporary Hospitality Management. 2021 Jul 6;33(5):1711-45.
34. Thomas A, Gupta V. Tacit knowledge in organizations: bibliometrics and a framework-based systematic review of antecedents, outcomes, theories, methods and future directions. Journal of Knowledge Management. 2022 Apr 8; 26(4):1014-41.
35. Freiesleben SD, Megges H, Herrmann C, Wessel L, Peters O. Overcoming barriers to the adoption of locating technologies in dementia care: A multi-stakeholder focus group study. BMC geriatrics. 2021 Jun 21; 21(1):378.
36. O'Connor M, Watts KJ, Kilburn WD, Vivekananda K, Johnson CE, Keesing S, Halkett GK, Shaw J, Colgan V, Yuen K, Jolly R. A qualitative exploration of seriously ill patients' experiences of goals of care discussions in Australian hospital settings. Journal of General Internal Medicine. 2020 Dec; 35(12):3572-80.
37. Braun V, Clarke V. Using Thematic Analysis in Psychology. Qualitative Research in Psychology. 2006; 3(2):77–101.
38. Saif AN, Purbasha AE. Cyberbullying among youth in developing countries: a qualitative systematic review with bibliometric analysis. Children and Youth Services Review. 2023 Mar 1; 146:106831.
39. Xu A, Baysari MT, Stocker SL, Leow LJ, Day RO, Carland JE. Researchers' views on, and experiences with, the requirement to obtain informed consent in research involving human participants: A qualitative study. BMC medical ethics. 2020 Oct 2; 21(1):93.
40. Creswell JW, Creswell JD. Research design: Qualitative, quantitative, and mixed methods approaches. 6th ed. SAGE Publications; 2022. https://spada.uns.ac.id/pluginfile.php/510378/mod_resource/content/1/creswell.pdf
41. Alrawashdeh HM, Al-Tammemi AA, Alzawahreh MK, Al-Tamimi A, Elkholy M, Al Sarireh F, Abusamak M, Elehamer NM, Malkawi A, Al-Dolat W, Abu-Ismail L. Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. BMC public health. 2021 Apr 28;21(1):811.
42. Dupin CM, Borglin G. Usability and application of a data integration technique (following the thread) for multi-and mixed methods research: A systematic review. International Journal of Nursing Studies. 2020 Aug 1; 108:103608.
43. Adhikari R, Timsina TP. An Educational Study Focused on the Application of Mixed Method Approach as a Research Method Authors. The OCEM Journal of Management, Technology, and Social Sciences. 2024 Jan 30;3(1):94-109.
44. RnI Bangladesh. DCCI: Research and Innovation Bangladesh (Rni Bangladesh). Dhakachamber.com. 2025. https://dhakachamber.com/rni
45. Lab S. Scimago Institutions Rankings. Scimagoir.com. 2025. https://www.scimagoir.com/rankings.php?country=BGD
46. Dania JF, Tabassum N, Nath A, Hossain MI, Sultana S. Research Data Analysis: Academic Research and Collaboration Activities in Bangladesh. In2023 International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM) 2023 Jun 16: 1-6. doi: 10.1109/NCIM59001.2023.10212552
47. 100+ Best Universities in Bangladesh [2022 Rankings]. EduRank.org-Discover university rankings by location. 2019. https://edurank.org/geo/bd/
48. Publications Output: U.S. Trends and International Comparisons. NSF - National Science Foundation. ncses.nsf.gov. https://ncses.nsf.gov/pubs/nsb202333
49. Nindl E. The 2022 EU Survey on Industrial R&D Investment Trends, EUR 31341 EN, Publications Office of the European Union, Luxembourg. 2022. doi:10.2760/579174, JRC131984.
50. Sarjidan MA, Kasim AM. Trends of academic publications: A case study of Malaysian research universities. Journal of Research Management and Governance. 2023 Dec 13;5(1):18-29. doi:10.22452/jrmg.vol5no1.2
51. Marini G, Xu X. Big fishes in a big pond: A comparison between foreign and Chinese academics' research influence in Mainland China. International Journal of Chinese Education. 2023 Feb 7;12(1): 2212585X221145244.
52. Nandy SE. Publishing Research Papers in Journals No Longer Mandatory to Get PhD: UGC. News18. 2022. https://www.news18.com/news/education-career/publishing-research-papers-in-journals-no-longer-mandatory-to-get-phd-ugc-6347185.html
53. Uko AL. Challenges of Inadequate Funding in the Administration of University Education in Nigeria. SCIENCES. 2024; 3(1):32-40.
54. Jacob ON, Lawan A, Solomon AT. Evaluation of causes of inadequate funds in Nigerian public universities. Middle European Scientific Bulletin. 2021; 9:56-65.
55. Anaman PD, Zottor DM, Egyir JK. Infrastructural challenges and student academic performance: Evidence from a developing nation. International Journal of Innovative Science and Research Technology. 2022;7(11):1189-200.
56. Chaudhary HC. Major Challenges of Education System in India and Efforts for Solutions. International Journal of Emerging Knowledge Studies. 2023; 2(9):268–73.
57. Abulibdeh E, Taha S, Alamassi S. Challenges Facing Underdeveloped Countries in Implementing Cutting-Edge AI Technology. Studies in Big Data. 2023 Jan 1;239–250.
58. Vega-Muñoz A, Gónzalez-Gómez-del-Miño P, Espinosa-Cristia JF. Recognizing new trends in brain drain studies in the framework of global

sustainability. Sustainability. 2021 Mar 15;13(6):3195.
59. Ryazanova O, Jaskiene J. Managing individual research productivity in academic organizations: A review of the evidence and a path forward. Research Policy. 2022 Mar 1;51(2):104448.
60. Mohammed AA, Baig AH, Gururajan R. Proposal of a guide for talent evaluation and management based on a qualitative and three-staged approach: A case of the higher education sector. Journal of Applied Research in Higher Education. 2020 Dec 15;12(5):1045-78.
61. Jessani NS, Valmeekanathan A, Babcock CM, Ling B. Academic incentives for enhancing faculty engagement with decision-makers—considerations and recommendations from one School of Public Health. Humanities and Social Sciences Communications. 2020 Nov 11;7(1):1-3.
62. Grant J. Academic Incentives and Research Impact: Developing Reward and Recognition Systems To Better People's Lives. Horizon Scan.AcademyHealth.2021. https://academyhealth.org/sites/default/files/publication/%5Bfield_date%3Acustom%3AY%5D-%5Bfield_date%3Acustom%3Am%5D/academicincentivesresearchimpact_feb2021.pdf
63. Duval-Couetil N, Ladisch M, Yi S. Addressing academic researcher priorities through science and technology entrepreneurship education. The Journal of Technology Transfer. 2021; 46 (2):288-318.
64. Lilia R, Elena T. Overcoming cultural barriers to scholarly communication in international peer-reviewed journals. J Lang Educ. 2020; 6 (2):4-8.
65. Rossoni AL, de Vasconcellos EPG, de Castilho Rossoni RL. Barriers and facilitators of university-industry collaboration for research, development and innovation: A systematic review. Management Review Quarterly. 2024; 74 (3):1841-77.
66. Haley AL, Lemieux TA, Piczak ML, *et al.* On the effectiveness of public awareness campaigns for the management of invasive species. Environmental Conservation. 2023; 50 (4):202-11.
67. Wild A, Kunstler B, Goodwin D, *et al.* Communicating COVID-19 health information to culturally and linguistically diverse communities: insights from a participatory research collaboration. Public Health Research & Practice. 2021;31(1).
68. Nsanzumuhire SU, Groot W. Context perspective on university-industry collaboration processes: A systematic review of literature. Journal of Cleaner Production. 2020; 258:120861.
69. Scuotto V, Beatrice O, Valentina C, Nicotra M, Di Gioia L, Briamonte MF. Uncovering the micro-foundations of knowledge sharing in open innovation partnerships: An intention-based perspective of technology transfer. Technological Forecasting and Social Change. 2020; 152:119906.
70. Dabiri S, Raman R, Grooms J, Molina-Henry D. Examining the Role of Community Engagement in Enhancing the Participation of Racial and Ethnic Minoritized Communities in Alzheimer's Disease Clinical Trials; A Rapid Review. The Journal of Prevention of Alzheimer's Disease. 2024 Aug 9;11(6):1647–72.
71. Sidek S, Rahman AA, Saif ANM. HRIS implementation in apparel manufacturing industry of developing economy: Identification of challenges through qualitative systematic review and bibliographic exploration. International Journal of Business Information Systems. 2022;1(1):1.
72. Jafrin N, Ghosh D, Saif M. Do socio-demographic characteristics affect graduates' employment status? Discover Sustainability. 2025; 6(1). doi:10.1007/s43621-025-00850-5
73. Durazzi N. Employability, higher education and the knowledge economy. Welfare Reform and Social Investment Policy. 2021; 107–128. doi:10.2307/j.ctv1h0p578.11
74. Esangbedo CO, Zhang J, Esangbedo MO, Kone SD, Xu L. The role of industry-academia collaboration in enhancing educational opportunities and outcomes under the digital driven Industry 4.0. Journal of Infrastructure, Policy and Development. 2023 Dec 11;8(1). https://systems.enpress-publisher.com/index.php/jipd/article/viewFile/2569/1979.10.24294/jipd.v8i1.2569

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