

Balancing Academics and Life: A Study of Work-Life Balance Among Faculty Members

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Abstract: The question of work-life balance is becoming increasingly relevant in recent years, particularly in the context of the academic profession. This study investigates the This research explores the work-life balance of teaching faculty in higher education institutions of Chengalpattu district, focusing on how the demands of teaching, research, administrative responsibilities and personal commitments interact with and influence the well-being of academics. The rapid changes in education have resulted in changes in the roles of faculty, which can often create an imbalance between their professional and personal lives. This study aims to explore the factors influencing this equilibrium, including institutional rules, workload, support mechanisms, and individual coping strategies. The study employs quantitative and qualitative research methods to survey faculty members from various colleges and universities in the Chengalpattu district to explore their experiences, challenges, and perceptions about work-life balance. Data on teaching hours, research expectations, administrative duties, family responsibilities and personal well-being will be collected through interviews and questionnaires. The study also examines how faculty cope with time and stress, and the role of institutional support in facilitating or impeding a healthy work-life balance. The study through the analysis of these aspects aims to identify the main barriers for the balanced working-life environment and suggest strategies that institutions can adopt to improve the quality of life for faculty members. The findings will give important insights into how work-life balance impacts on educators' job satisfaction, productivity and overall well-being. The study adds to the existing literature with a contextual perspective from Chengalpattu district, which can be useful for policy makers, educational leaders and faculty members themselves to promote a more supportive and sustainable academic environment.

Keywords: Work-Life Balance, Among Teaching Faculties, Higher Education Institutions, Support Systems, Quality of Life, Personal Commitments

Introduction

Work life balance concept has become important in today's workplace especially in the educational sector [64]. Finding a good balance between their personal and professional life is never easy for professors in engineering and business schools. Besides teaching, these faculty members are also expected to conduct research, mentor students, perform administrative tasks, design curricula and frequently work with businesses or consultancies [44]. In addition to the physical and mental strain, the pressure to meet these expectations while balancing personal and family responsibilities can reduce productivity and job satisfaction [78]. Working in engineering and management institutes, academic work is often characterised by long working hours, unpredictable schedules and a strong focus on results and performance [99]. Faculty members may also be subject to greater stress from accreditation requirements, pressures to publish, student evaluations, and competition for research grants [59]. On the personal side, they may struggle to spend quality time with their families, take care of household chores and look after their own health and well-being. These imbalances can have negative effects, such as burnout, absenteeism, and attrition from the academic profession.

The purpose of this study is to analyse the major factors affecting the work-life balance of faculty members of engineering and management institutions to study their work-life balance [94]. Some of these are workload, institutional support, time management, job satisfaction, work flexibility and organisational culture [35]. The study also aims to identify gender differences, challenges faced by faculty at different career stages, and the impact of work-life balance on faculty performance and well-being [86]. The findings of this study will provide further insights for institutional leaders, HR professionals, and policymakers to develop effective strategies, policies, and support systems to promote a healthier work environment [55]. This will contribute to the long-term success and sustainability of the institution and to the faculty's own quality of life. The role of faculties of engineering and management institutes is very demanding including teaching, research, administrative duties and mentoring [98].

Hence, study of work-life balance among these faculties is essential [50]. If not managed correctly, these responsibilities can cause stress, burnout and lessened job satisfaction. The understanding of the work-life balance allows institutions to create a supportive environment that nurtures faculty well-being, increases productivity, and improves the overall quality of education [72]. In the changing academic scenario of today, especially in the post-pandemic era where the lines between work and personal life have become more and more blurred, this study is vital for the formulation of effective HR policies, retention of faculty, and creation of a more inclusive and balanced workplace [31]. This study addresses the development of the idea of work-life balance as a way of tracking the issue and raising the level of stress in the work place as people attempt to balance a broad spectrum of elements in their life/work setting.

Work life balance is the concept of a balance between work and life activities [54]. This balance is important for faculty, both for their own mental and physical health and for the creation of a positive learning environment for students [93]. Engineering and Management faculties, in particular, often have specific problems due to long working hours, continuous curriculum development and the pressure to publish research work or to get funding [43]. The present study aims at investigating the present status of work life balance among faculties in Engineering and Management institutions and to identify the key factors affecting the same [79]. Besides, the study also aims at analysing the effect of demographic variables such as age, gender, marital status and experience on work life balance [63]. The study aims to understand these dimensions so as to suggest measures and institutional policies that will help establish an academic work culture that is more balanced and sustainable.

The study on work-life balance of faculty members in engineering and management institutes is very important as it has a direct impact on the well being of educators as well as the effectiveness of educational institutions [48]. Faculty in these fields often experience high levels of stress due to the demanding nature of the role that includes teaching, research, and administrative responsibilities [85]. It is important to strike a healthy balance between professional and personal life for their mental and physical health [36]. When workload becomes unmanageable and has negative effects on the health and well-being of faculty, stress-related problems may occur. Understanding the factors that contribute to stress, institutions can take appropriate measures to support their faculty and foster healthier lifestyles [65].

One of the biggest concerns about poor work-life balance is burnout, a common problem for faculty members who are overburdened with responsibilities [74]. When people don't have time to rest and do their own things, they have less energy, which leads to less motivation and productivity [46]. When faculty have a balanced workload, they can recharge and remain excited about their profession. This not only increases their job satisfaction but also improves their commitment to teaching and research [58]. When faculty members have a healthy work-life balance, they are more likely to feel valued and respected, thus further cementing their commitment to their profession.

Similarly, work-life balance is critical in enhancing job satisfaction and retention of faculty members [77]. If teachers are satisfied with where they work and are able to juggle their personal responsibilities, they are more likely to stay in the profession longer. A high retention rate is good for the institution's benefit as it reduces the recruitment, training, and turnover costs [49]. Faculty who maintain a healthy balance are often more focused and perform better in their roles too. They can focus on their teaching, research and administrative work without being overwhelmed, leading to increased productivity and efficiency [80]. A balanced lifestyle greatly improves the quality of teaching and research in educational institutions. Faculty members who are not burdened by excessive stress can spend more time and effort preparing lectures, dealing with students, and engaging in meaningful research [37]. This results in improved academic achievement and contributes to the holistic development of students. Institutions that focus on work-life balance also tend to draw in talented professionals who are looking for a supportive and flexible work environment [66]. A positive institutional reputation can foster employee well-being, which in turn can enhance the organization's image and standing in the academic community.

Thus, a mix of organisational support and individual efforts is needed to improve work-life balance among faculty [71]. It has been shown that one way to do this is to offer flexible hours and/or hybrid working arrangements, where faculty can arrange their schedules to accommodate personal and family obligations. This flexibility enables them to manage both professional and personal responsibilities without sacrificing their performance [34]. Effective workload management is another important measure where institutions ensure that teaching assignments, research expectations and administrative duties are fairly and reasonably distributed. They can also help to reduce stress, by not piling on too much work, making a more manageable work environment [53]. Encouraging faculty members to take leave – to promote work-life balance – is also important. Regular breaks, vacations and holidays are opportunities for relaxation and rejuvenation, which are necessary for long-term productivity and well-being [87].

Institutions should define clear boundaries between work and personal time to avoid burnout and ensure faculty members have the time to spend with themselves and their families [84]. "And it's also really important to support mental and physical health. This may include access to counselling services, wellness programs, fitness facilities, and stress management workshops, all of which help to create a healthier, more balanced lifestyle [40]. A collaborative work culture fosters work-life

balance by lessening individual workload and cultivating a sense of community among faculty members [67]. When educators work together and share the responsibilities, they can help one another in carrying out their duties in teaching, research and administration [95]. The collaborative environment not only enhances efficiency but also fosters stronger interpersonal relationships within the institution [57]. Incentives such as research grants, sabbaticals, or recognition programs for good work-life balance can also encourage faculty members to focus on their well-being.

Such incentives are evidence of the institution's commitment to staff support and a positive approach to the balance between professional and personal life [88]. Promoting work-life balance among teaching faculty has wide-ranging and powerful benefits for individuals and organisations [47]. Faculty members who achieve this balance tend to have higher levels of job satisfaction and motivation and therefore this leads to better performance and productivity. Educators are healthier physically and mentally with less stress and can perform their duties more effectively [32]. A healthy work environment also increases staff retention and loyalty, decreasing turnover and creating stability within the institution [75]. Furthermore, work-life balance promotes a positive and supportive organisational culture where faculty members feel valued and respected [96]. In this environment, innovation in teaching and research is encouraged because educators are more likely to explore new ideas and approaches when they are not stressed out [61]. Another advantage is the development of strong personal and social ties, as faculty members have the time and energy to devote to their families and communities.

In the end, by promoting work-life balance, the institution's overall reputation is enhanced, reflecting its commitment to employee well-being and academic excellence [52]. Work-life balance of teaching faculty in higher education institutions is important in shaping the individual well-being and organisational success. "By addressing the issues of workload, stress and time management, institutions can promote a more supportive and sustainable work environment [92]. Flexible scheduling, workload management, health support and a collaborative culture are strategies that can significantly improve the quality of life for faculty [38]. Teachers can better perform their duties, improve academic performance and achieve a balanced personal life, which is beneficial to themselves and the institutions they work for. Work-life balance is an important aspect of professional life especially for the teaching faculties of higher education institutions [73]. Teachers' responsibilities extend beyond classroom instruction and encompass research, administrative duties, student guidance, and curriculum creation.

Not balancing these responsibilities with the personal life can lead to stress, burnout and decreased job satisfaction [68]. A healthy work-life balance allows teachers to fulfil their duties efficiently while safeguarding their mental and emotional health. The work environment of higher education can demand flexibility, longer hours and constant upskilling [81]. Many faculty members at their institutions lack supportive policies such as flexible schedules, mental health support, and manageable workloads, and they have a difficult time balancing their professional and personal lives. This imbalance can generate absenteeism, low productivity and high turnover [42]. It can also affect the quality of education and the general academic atmosphere of the institution [89]. Moreover, organisations that encourage and support work-life balance among their teaching staff are more likely to see positive results. Faculty members who feel supported tend to have higher levels of commitment, motivation, and engagement [60]. This leads to better quality teaching, better student outcomes and a better reputation of the institution. Work life balance also fosters a culture of trust and loyalty which is essential in retaining experienced, talented educators.

The study's scope includes teaching faculty members in higher education institutions, to understand how they balance their professional responsibilities and personal lives [70]. It looks at a variety of factors — workload, family obligations, and how much institutional support is

provided to faculty [45]. The study includes faculty members from different departments including males and females, thus it will provide a diverse perspective on work-life balance [83]. It also aims to investigate the interaction between professional demands (teaching, research, administrative duties) and personal demands and therefore the overall well-being and job satisfaction [56]. By examining these dimensions, the study offers important insights that can assist institutions in refining their policies and creating more effective support systems for faculty members, thereby promoting a healthier and more balanced work environment.

The study is necessitated by the increasing challenges facing faculty members in striking a proper balance between work and personal lives [62]. The job's growing demands can frequently cause stress and burnout. It is important to know how to prevent these problems. Faculty members who feel supported are more likely to remain committed to their institutions, making work-life balance critical to employee retention and satisfaction [39]. A good balance will also help them to be more productive and perform better because they will not be overwhelmed and can focus more on their work [33]. The study also highlights the significance of recruiting competent and qualified faculty through a conducive and flexible work environment [97]. Better policies and practices that improve the overall work environment can help improve institutional effectiveness and long term success [76].

The study objectives are framed in such a way that to understand the work life balance of teaching faculty in totality [51]. The main aim is to analyse the current situation of work-life balance in the higher educational institutions and to identify the main factors that influence it. Moreover, the research aims to investigate the effect of workload, administrative responsibilities, and institutional support on the ability of faculty members to balance [90]. It also discusses the time management strategies adopted by the faculty members to efficiently manage their professional and personal commitments [91]. A further important objective is to explore the link between work-life balance and other factors like job satisfaction and stress levels which have direct impacts on performance and well-being [41]. Moreover, the study investigates the differences in work-life balance among demographic groups such as age, gender, marital status and academic rank [69]. Thirdly, the study aims at collecting faculty perceptions towards the existing institutional policies and to provide practical suggestions for its improvement, which will help in creating a fair and conducive working environment in the higher education institutions [82].

Research Review

Managing strategic human resources is a balance between work and life [6]. The study focused on work-life balance, long hours and employee morale, role overload and job satisfaction, workplace stress and employee well-being, and work-family and job commitment [11]. Hence, the study proposed a problem statement to investigate and find out It was statistically found that work-life conflict affects women engineers' commitment to their jobs, role overload affects their job satisfaction, and workplace stress affects their well-being [2]. However, long work hours don't take much toll on the morale of female engineers as long as they are resourced and driven. Women engineers' work-life balance must be given top priority [23]. The principle of WLB is that paid employment should be compatible with domestic life and community involvement for the purposes of personal and social well-being [16]. The term was first used in the middle of the 1970s to describe the balance between the individual's work and personal life.

Many organisations nowadays focus on the importance of WLB and that is why the topic was chosen for the study (Heery and Noon, 2008).'' Teachers play a vital role in the development of students and in building a better future. The study samples are female instructors working in self-financing engineering schools [4]. barriers to individuals achieving WLB, the effects of poor

WLB, their place in work and family etc [20]. The ability to work with emotion is an integral part of the skills of any person in today's competitive educational environment, where achieving excellence in work performance is at the expense of one's personal life [13]. Everyone is entitled to a good quality of life, and this means striking a balance between work and family life [29]. Emotional intelligence is a big factor in how well you perform at work and at home and how much stress you have [9]. To investigate the impact of emotional intelligence on the work-life balance of faculty members' performance, the researchers chose three private colleges for their study in Tamil Nadu, India [24].

The strains of full-time employment are a constant challenge to working women today, along with a larger share of obligations and duties at home after work [18]. Women are working more and it's making it harder to separate work and life, in fact work has become their life. Academic occupations are getting bigger and bigger which is forcing faculty members to do more work and attention [1]. Today academia has resulted in schools and other institutions requiring their faculty to teach more courses than ever before while still doing active research, securing large grants and performing other tasks such as recruiting, guiding and counselling students [26]. Thus these positions now require three different skills: research, teaching and service [7]. Women often bear a greater burden of household work than males regardless of employment status, which they try to balance with many competing roles such as professional, mother, wife, daughter-in-law etc [15]. The study also shows that it is hard to balance work-life without proper support from spouse and family [28].

Technology will play a big role in improving the work-life balance of teachers in management schools [22]. Technology integration enhances the work-life balance by reducing the requirement for workers to work beyond their usual hours [12]. The aim is to understand how technology helps to reduce workloads which in turn improves the work-life balance of lecturers [30]. The results of the study show that the current technologies in education have reduced the administrative load on the lecturers by updating mark sheets and attendance sheets, automated updating of progress reports and evaluation and assessment of assignments online [5]. Generally, previous studies have concentrated on technical, BFSI and IT domains only. The present study is concerned with education and it will be of help in guiding schools to adopt technologies that will facilitate smooth running and enable lecturers to balance between personal and professional life [17]. The study is concerned with the extent to which work stress and The study revealed that the female faculty members of the central universities in Delhi, India, have a moderate level of work-life balance and occupational stress [10]. The study findings also indicate a significant inverse relationship between work-life balance and occupational stress.

This study can be very useful to the administration of educational institutions in improving the work life balance and minimising the occupational stress level of its faculty members to create a work environment that everyone is happy to be a part of [14]. This will therefore enhance better organisational efficacy and efficiency in academic settings. Teaching in the higher education sector today is becoming more demanding [19]. Apart from the emphasis on the quality of teaching-learning processes, today's teachers are also evaluated for their active participation in professional and societal development. Women in academia have equal responsibilities as that of men [3]. But in India women have multiple roles in the nonwork setting as compared to men [27]. The main purpose of this cross-sectional study was to know the gender difference in Work-Life Balance (WLB) among teachers of higher education [25]. Approval was obtained from Institutional Ethical Committee. The WLB questionnaire was administered to 127 male and 136 female faculties working on tenure basis in the Public Universities in Karnataka [8]. The upper age group, male gender and faculties of science discipline were related to better WLB in multiple regression

analysis. Strategies at the organisational level and initiatives at the personal level can address WLB issues [21].

Research Methodology

The present study is descriptive research design to explore and analyse the work life balance of teaching faculties in higher education institutions in Chengalpattu district [104]. It seeks to describe current conditions and practices that affect faculty members' work-life balance and identify key factors that impact it [101]. The study is limited to higher education institutions (government and private colleges/universities) in Chengalpattu District, Tamil Nadu. The study relates to teaching faculty working in higher education institutions. The target population comprises the educators working in different colleges and universities. Stratified random sampling method was used to ensure that all types of institutions, such as government, private and self-financing colleges, are adequately represented [109]. This approach helps to capture a range of perspectives and experiences on work-life balance. The sample size of the study will be within 150 to 250 respondents which will be selected on the basis of their accessibility and willingness to participate [103]. This will ensure that the data collected is relevant and representative of the larger population. The data has been collected for the study from both primary and secondary sources for the better understanding of the research topic.

The primary data were collected through a semi-structured questionnaire including the closed-ended questions based on a Likert scale and dichotomous and multiple choice questions [107]. This method helps to collect data systematically. It also helps to get varied responses from the participants. Secondary data is collected from authentic sources such as academic journals, books, published research papers, report published by institution, government publication and relevant websites. The combination of data sources increases the validity and depth of the study [100]. Data collection is done by using a well-structured questionnaire which includes different factors related to work-life balance [110]. It includes the demographic profile of the respondents, their workload and working hours, and the level of work pressure they experience [105]. The questionnaire also looks at family commitments, the amount of support from the institution, and how happy faculty are with their jobs. It also discusses the level of stress and the coping strategies adopted by people to manage their work and personal responsibilities effectively. Together these elements provide a holistic understanding of the challenges and experiences of faculty members.

Descriptive and inferential statistical tools are employed in the analysis of the collected data [104]. Mean, percentage and standard deviation are descriptive statistics used to summarise and interpret the data for clear picture of the findings [108]. To find the relationship and test the hypothesis inferential statistical methods like chi-square test, ANOVA, t-test and regression analysis if applicable are used. Statistical software like SPSS and MS Excel are used to ensure accurate data analysis and efficient handling of large data sets [106]. The study also includes hypothesis testing to examine the association of demographic variables with work life balance. The null hypothesis is that there is no significant relationship between work-life balance and the variables of age, gender and marital status [102]. The alternative hypothesis is that there is a significant relationship between these variables. The present study attempts towards statistical analysis to check for the effect of demographic factors on work-life balance among teaching faculty and thus help in providing useful insights about the factors affecting the overall well-being and professional satisfaction of teaching faculty.

Result and Discussions

The education sector in India was valued at US\$ 117 billion in FY20 and is anticipated to reach US\$ 225 billion by FY25. The Indian edtech market, currently valued at Rs. 64,875 crore (US\$ 7.5 billion), is expected to reach Rs. 2,50,850 crore (US\$ 29 billion) by 2030, according to a report by the Internet and Mobile Association of India (IAMAI) and Grant Thornton Bharat. In 2023, India K-12 segment attained a growth valuation of US\$ 48.9 billion. It is currently estimated to be growing at 10.7%. The market is forecast to reach a huge US\$ 125.8 billion by 2032. India has more than 250 million school going students, more than any other country [113]. In 2021-22, India had 43.3 million students enrolled in higher education, of which 22.6 million were male students and 20.7 million were female students. According to UNESCO's 'State of the Education Report for India 2021', the Pupil Teacher Ratio (PTR) for senior secondary schools was 47:1 as opposed to 26:1 for the whole school system. The Indian Institute of Technology Delhi (IITD) leads the way at 44th, with two Indian universities in the top 50 and seven in the top 100 of the QS World University Rankings: Asia 2025 (Figure 1).

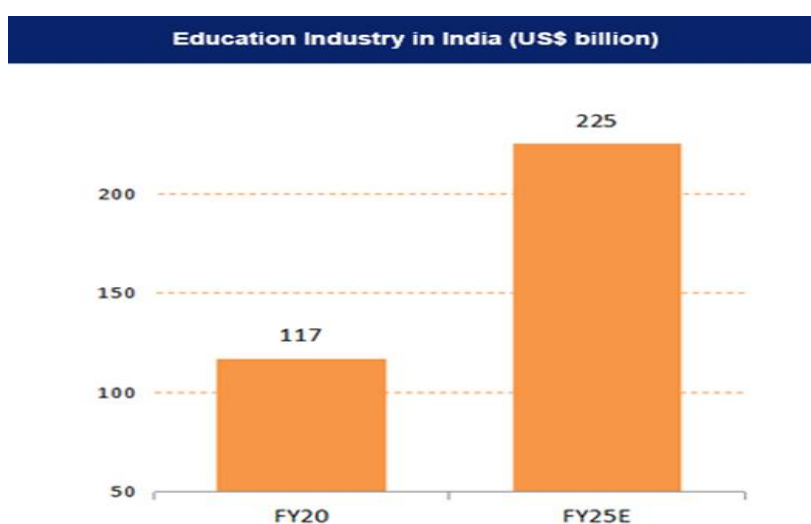


Figure 1. Growth of the Education Industry in India (FY20–FY25E)

India's colleges grew to 52,538 in FY25 (as of February 24, 2025), from 43,796 in FY21 and 42,343 in FY20. Number of universities in India increased to 1,362 in FY25 (as of February 24, 2025) from 760 in FY15. As per 2021-22, there were 43.3 million students enrolled in higher education in India, out of which 22.6 million were male and 20.7 million were female. In 2020-21, there were 41.3 million students enrolled in higher education, out of which 21.2 million were male and 20.1 million were female [112]. In 2022-23, the total number of institutes approved by AICTE in India is 8,902. Out of these 8902 institutes, there are 3,577 undergraduate, 4,786 postgraduate and 3,957 diploma institutes. The Indian edtech market is expected to grow from US\$ 700-800 million in 2021 to US\$ 30 billion by 2031. KPMG says India is also the second largest market for E-learning after the US [122]. The online education market in India is anticipated to register a CAGR of nearly 20% and reach US\$ 2.28 billion in 2021-2025.

The National Education Policy (NEP) 2020 is playing a game-changing role to transform India's higher education landscape. It emphasises on multi-disciplinary learning, flexible curricula and research orientated teaching to bring academic programs at par with global standards. It fosters digital inclusion through online learning platforms and urges institutions to foster innovation and critical thinking. For example, in September 2024, the Government of India announced the

Partnerships for Accelerated Innovation and Research (PAIR) program to boost research in higher education institutions by pairing top-tier institutions with those lacking the capabilities [117]. Also, the Anusandhan National Research Foundation is launching the MAHA initiative and setting up Centres of Excellence to enhance India's scientific status in the world. These reforms collectively aim to create a more inclusive, innovative, and globally competitive education system in India (Figure 2).

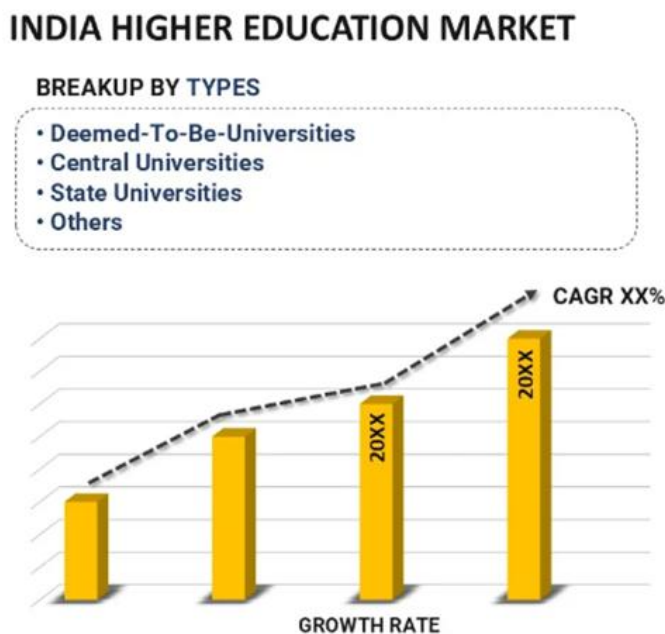


Figure 2. Growth Trends in the Indian Higher Education Market

Deemed to be Universities In India, Deemed to be Universities are institutions conferred autonomy by the Department of Higher Education, Ministry of Education. These institutions are known for their academic excellence in specific areas of study and are free to set their own syllabus, admission criteria and academic calendar. Several deemed universities offer specialised programs and undertake advanced research [119]. This promotes innovation in teaching and curriculum design. They are an important element of the diversity and specialisation of Indian higher education. **Central Universities** Central universities are established and financed by the Government of India under an Act of Parliament. These institutions are spread all over the country and offer a variety of under-graduate, post-graduate and doctoral programs. Central universities have a national footprint and inclusive admission policies that draw students from different parts of India and socio-economic backgrounds [124]. They are important stakeholders in promoting research, academic equity, national integration and often have more funding and infrastructural support than state-run institutions.

State Universities: State universities are established by the state governments and are governed by the state legislations. These institutions have huge student strength and form the backbone of higher education in India. They generally offer a wide range of academic programs and are mainly serving students from the home state [114]. Although they have had to contend with such problems as limited budgets and poor infrastructure, many of the state universities have made great strides in raising academic standards, expanding enrolment, and adapting programs to the needs of regional labour markets.

State Private Universities: State private universities are established by the private bodies like trusts or societies or educational societies through state acts. These institutions are self-financed

and have the freedom to design industry-oriented programs, modern teaching methodologies and global partnerships [118]. The institutes are becoming popular among students looking for specialised courses and flexible academic options with focus on quality infrastructure and education for employability. They contribute to increasing higher education capacity and bridging the gap between demand and supply especially in professional and technical areas.

Autonomous Colleges: The Autonomous Colleges are affiliated institutions which are independent in designing curricula, setting syllabi and conducting examinations, but are under the parent university for the award of degrees. This status, given by the University Grants Commission (UGC), means more scope for innovation in teaching, faster inclusion of industry-relevant content and better internal assessment systems [121]. Autonomous colleges are known for their high academic standards and good governance and are an attractive choice for students looking for quality education with the benefits of flexibility and customisation.

Institutes Of National Importance: Institutes of National Importance (INI) are the premier institutions of higher education established by an act of Parliament, and recognised for their excellence in education, research and leadership in various fields. These include IITs, IIMs, NITs, AIIMS and others. Heavily funded by the government, INIs attract the best faculty and students, and regularly lead the nation in academic and innovation benchmarks [116]. Their tough courses, global alliances and industry links are vital to India’s socio-economic advancement and global academic reputation. Admission in these institutes is highly competitive and based on merit (Figure 3).

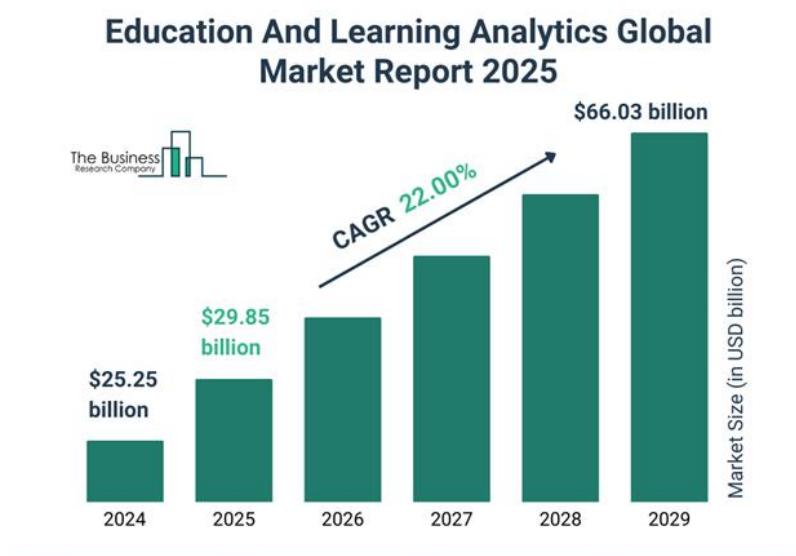


Figure 3. Global Education and Learning Analytics Market Growth Forecast (2024–2029)

The education sector is a significant employer of graduates. It covers the three main areas of the school, further and higher education and education that takes place outside of school or college [123]. The main area of work is teaching and lecturing but there are other roles, especially in education advice and development. Local authorities are the biggest employers in this sector, but there are also many independent schools colleges and universities. Teaching degree/formal education is a requirement for most jobs within this sector, however, there are opportunities to teach without one, for example teaching English as a foreign language. There are a lot of companies in the education sector that provide great objectives along with competitive salaries and good benefits [111]. The job opportunities range from working with school operators and software

publishers to textbook publishers, as varied as the companies. The industry is in a growth cycle and is expected to be a major part of the 21st Century economy of America. Many new companies will join the existing companies to change the way people learn, research, collaborate and teach. The education industry is booming and its many companies are hungry for fresh talent, including seasoned pros and eager beavers just entering the workforce.

The education industry can be described as the sector of organisations and businesses that provide products and services intended to improve the quality of education in society. Learn more about the education industry in a comprehensive overview. The education industry comprises schools, colleges, universities and various private institutions [115]. The education industry teaches its students to cater to the demands of an ever-changing working world. The industry is composed of a growing number of organisations working to offer lifelong learning to their customers. The education sector can be divided into primary education, secondary education, higher education and vocational education. The Education industry is critical to the workforce capability of all other industries, but it also has its own unique workforce development challenges [120]. The Education industry is under intense public and political scrutiny and subject to frequent waves of policy change and review. Its job is to skill the current workforce and prepare future generations for work and life.

Conclusion

The education sector includes traditional colleges and universities, as well as companies that focus on training and development for clients ranging from an individual learner to global corporations to online content delivery. The industry as a whole has responsibility to train people of all ages to learn new skills, get meaningful employment and help accelerate economic growth by delivering education in traditional classroom settings or through online training over the Internet. The education industry also includes ancillary education services such as after-school tutoring, charter schools, special or alternative education, educational content suppliers, and the professional development of administrators and teachers. This section has articles that help learn more about this sector and understand its unique dynamics, opportunities and challenges. The education industry must adjust to the challenges of controlling costs, differing views on standardised learning, competing for students and responding to changing economic needs. To meet these challenges, the industry is developing unique strategies such as forming education partnerships, adapting to new technologies and developing customised and personalised learning programs. This part also discusses these challenges and provides a framework to adapt to these challenges. This section is aimed at consulting houses, teachers, students and learners, investors in the education industry, companies of all sizes that sell products or services to education players, organisations seeking knowledge and key business information in the education industry and players looking to develop content for this sector.

References

- [1] B. C. C. Marella, “Scalable Generative AI Solutions for Boosting Organizational Productivity and Fraud Management,” *International Journal of Intelligent Systems and Applications in Engineering*, vol. 11, no. 10s, pp. 1013–1023, Aug. 2023.
- [2] D. Antar and H. Elsayed, “Enhancing university students’ Arabic language skills through social media: A case study of TikTok,” *Theory and Practice in Language Studies*, vol. 15, no. 8, pp. 2683–2692, 2025.
- [3] K. Sharma and B. Goswami, “Rental market of pump-sets in the central and western parts of Nepal plains,” *Asia-Pacific Journal of Rural Development*, vol. 30, no. 1–2, pp. 226–243,

2020.

- [4] M. Jayaseely and C. Saffina, "Divergence in autonomy and agency among rural and urban women after accessing microfinance," *Educational Administration: Theory and Practice*, vol. 30, no. 5, pp. 8200–8207, 2024.
- [5] M. Jayaseely and C. Saffina, "Impact of microfinance on women's economic empowerment in rural areas of Kancheepuram district," *The Indian Journal of Commerce*, vol. 77, no. 3, pp. 159–170, 2024.
- [6] R. Banumathi and C. Saffina, "A multidimensional theory-driven framework for decoding FMCG consumption dynamics in rural Bengaluru," *International Journal of Creative Research Thoughts*, vol. 13, no. 12, 2025.
- [7] R. Banumathi and C. Saffina, "An exploratory study on determinants of purchase intention of fast-moving consumer goods," *Asian Journal of Management and Commerce*, vol. 6, no. 2, pp. 515–519, 2025.
- [8] C. Saffina and R. Banumathi, "Discussion on the growing market of FMCG market in reinvigoration of middle income households: A case study on Bangalore rural districts scenario," *Indian Journal of Natural Sciences*, vol. 14, no. 79, 2023.
- [9] N. K. Tanwar, A. Joshi, and A. S. Bist, "A comparative study of MBart and alternative transformer models for Kumauni language translation," *Asian Journal of Mathematics and Computer Research*, vol. 32, no. 3, pp. 147–161, 2025.
- [10] N. K. Tanwar, A. Joshi, and A. S. Bist, "AI-powered analysis and comprehensive review of the decline of Kumaoni culture and language preservation initiatives," *Asian Journal of Mathematics and Computer Research*, vol. 32, no. 3, pp. 162–174, 2025.
- [11] S. Diwan, "The role of judicial review in UK constitutional jurisprudence," *International Journal for Legal Research and Analysis*, vol. 2, no. 8, pp. 4–7, 2025.
- [12] T. P. Krishna Kumar, "Shift of entertainment media to OTT platform – The paradigm shift of youth impacting business world," *Turkish Online Journal of Qualitative Inquiry*, vol. 11, no. 2, pp. 415–421, 2020.
- [13] J. Muhamed Rafi, J. Moosa, T. P. Krishna Kumar, and K. Deepak, "Crude oil price influence on the performance of selected stocks from different sectors – An empirical analysis," *Journal of Survey in Fisheries Science*, vol. 10, Special Issue 3, pp. 1893–1902, 2023.
- [14] S. K. Saravanan, R. Krishnamoorthy, T. P. Krishna Kumar, R. Narayana Rao, D. Udaya Suriya Rajkumar, and R. Thiagarajan, "IoT alert reflexion of forbidden deforestation regions with drone observation," *IEEE Xplore*, vol. 18, no. 5, pp. 201–211, 2023.
- [15] T. P. Krishna Kumar, P. B. Acharjee, P. D. Sawant, P. Dabaria, and A. S. Mohideen, "The impact of using Facebook on consumer buying behaviour online," *Journal of Chemical Health Risks*, vol. 12, no. S4, pp. 744–752, 2023.
- [16] S. Manochandar, T. P. Krishna Kumar, P. B. Acharjee, P. D. Sawant, P. Dabaria, and A. S. Mohideen, "The impact of using Facebook on consumer buying behaviour online," *European Chemical Bulletin*, vol. 12, SI 4, pp. 744–752, 2023.
- [17] T. P. Krishna Kumar, P. Malhotra, B. Madhukumar, M. A. Raj, R. A. Isaac, and D. Balasubramanian, "Exploring the factors influencing the effectiveness of digital marketing in changing environment: A theoretical and empirical investigation," *Journal of Educational Administration: Theory and Practice*, vol. 30, no. 4, pp. 7488–7493, 2024.
- [18] T. P. Krishna Kumar, R. Suriakala, N. Shankar, and M. Deepak, "Global to local perspectives in succession planning of family business in unorganized sector," *Journal of Educational Administration: Theory and Practice*, vol. 30, no. 5, pp. 3056–3066, 2024.
- [19] T. P. Krishna Kumar, S. Ramesh, D. R. Pallavi, M. Ramachandran, V. Saravanan, and M.

- Selvam, "Individual and group behavior-based customer product recommendation for designing information systems using SPSS statistics," in Springer Nature Switzerland, Jan. 10, 2025, pp. 292–299.
- [20] S. Ramesh, T. P. Krishna Kumar, D. R. Pallavi, M. Ramachandran, K. Ramu, and S. Rajkumar, "Evidence on dividend preferences, attention, and IPO valuation of retail investors using SPSS statistics," in Springer Nature Switzerland, Jan. 10, 2025, pp. 651–659.
- [21] T. P. Krishna Kumar, R. Suriakala, V. Seema, K. T. Vijayamol, and B. Tater, "The impact of artificial intelligence and machine learning on personalized marketing strategies," *Journal of Chemical Health Risks*, vol. 15, no. 2, pp. 1562–1576, 2025.
- [22] M. Rana, T. P. Krishna Kumar, and P. Kapoor, "Emerging trends in sustainable marketing: Analyzing the impact of eco-friendly consumer behavior on brand strategies," *International Journal of Environmental Sciences*, vol. 11, no. 8S, pp. 207–213, 2025.
- [23] M. Rana, T. P. Krishna Kumar, and R. Suriakala, "Analyzing the impact of government policies on women entrepreneurship: A secondary data study," *International Journal of Environmental Sciences*, vol. 11, no. 8S, pp. 198–206, 2025.
- [24] T. P. Krishna Kumar, D. Nair, R. Suriakala, and A. K. Prasad, "Navigating the future: The role of AI and machine learning in financial market innovations," *Journal of Applied Bioanalysis*, vol. 11, no. 4, pp. 50–60, 2025.
- [25] T. P. Krishna Kumar, R. Suriakala, R. Somasundaram, P. S. John, and L. Thomas, "Strategic integration of social media in educational planning: Management approaches for student engagement and institutional development," *Journal of Applied Bioanalysis*, vol. 11, no. S2, pp. 128–136, 2025.
- [26] T. P. Krishna Kumar, "Business agility – An inevitable model to be the market leader in the AI & IoT enabled business environment," *Empirical Economics Letters*, vol. 21, Special Issue 1, pp. 21–26, 2022.
- [27] S. Nagar, "An impact of performance of companies with sustainability goal on stock market movements," *European Economic Letters*, vol. 13, no. 3, pp. 417–420, 2023.
- [28] S. Nagar and P. Mahajan, "An assessment of effectiveness of remote work mode in job internships," *The Online Journal of Distance Education and E-Learning (TOJDEL)*, vol. 11, no. 2, p. 1154, 2023.
- [29] S. Nagar, "Augmentation of insurance business in India: Role of commercial banks," in *India Banking and Finance Report 2024*, National Institute of Bank Management (NIBM), pp. 81–94, 2024.
- [30] S. Nagar, "Cointegration of Indian stock market with global stock markets: An empirical analysis," *European Economic Letters*, vol. 14, no. 2, pp. 2457–2464, 2024.
- [31] L. Jose, "Contextual Diachronic Semantic Framework: Advancing Literary Analysis and Pedagogy through the Semantic Study of Shirley Jackson's 'The Lottery'," *Educational Process: International Journal*, vol. 17, Art. no. e2025377, Aug. 14, 2025.
- [32] H. R. Laskar, "Adoption of fintech and digital financial services (DFS) by young professionals," *Int. J. Adv. Res. Eng. Technol.*, vol. 11, no. 1, pp. 537–561, 2020.
- [33] H. R. Laskar, "Factors influencing saving and investment behavior of government and private sector employees," *Indian Journal of Economics and Business*, vol. 20, no. 1, pp. 1168–1192, 2021.
- [34] S. Roushon and H. R. Laskar, "Influence of Neural Behaviour on Decision Making," *IOSR Journal of Humanities and Social Science*, vol. 29, no. 5, ser. 13, pp. 35–42, May 2024.
- [35] Z. Alam and H. R. Laskar, "The Influence of Neural Behavior on Individuals' Financial Decisions," *Journal of Economics, Finance and Management Studies*, vol. 7, no. 6, pp. 3298–

3306, Jun. 2024.

- [36] S. Laskar, H. R. Laskar, and M. N. I. Barbhuyan, "Perception of Women Entrepreneurs Regarding Social Media Marketing," *Bangladesh Journal of Multidisciplinary Scientific Research*, vol. 9, no. 5, pp. 10–18, Nov. 2024.
- [37] A. Mohammed, "Artificial Intelligence in Supplier Selection and Performance Monitoring: A Framework for Supply Chain Managers," *Educational Administration: Theory and Practice*, vol. 29, no. 3, pp. 1186–1198, 2023.
- [38] S. Kumar, "Challenges in higher education for sustainable development," *South Eastern European Journal of Public Health*, vol. 26, no. s1, pp. 4194–4204, Feb. 2025.
- [39] S. Kumar, M. Dhinakaran, and M. Sheetal Kumar, "Social Governance and Political Order in Contemporary China," *Public Administration Review*, vol. 86, no. 2, pp. 573–575, 2026.
- [40] V. Kalyani and S. Kumar, "Social Justice in Group Work Practical Interventions for Change," *Practice*, vol. 37, no. 5, pp. 1-4, 2025.
- [41] M. S. Kumar and S. Kumar, "Study of Literature for Development of Questionnaire on Requirement Elicitation," *Library of Progress – Library Science, Information Technology & Computer*, vol. 44, no. 3, 2024.
- [42] S. P. Kulkarni, P. S. Kulkarni, and S. Kumar, "A case study of furunculosis following an Ayurvedic oil massage, sudation therapy, and lessons to learn," *Case Reports in Dermatological Medicine*, vol. 2024, no. 1, p. 3660064, 2024.
- [43] M. S. Kumar, M. Dhinakaran, and S. Kumar, "Understanding Spanish Jihadist Terrorism: The Ideology Behind the Metaphors," *Terrorism and Political Violence*, London, United Kingdom, 2025.
- [44] N. Gupta and V. Gaur, "Cyber crimes against women," *Int. J. Innov. Res. Sci. Eng. Technol. (IJIRSET)*, vol. 10, no. 11, pp. 14394–14401, 2021.
- [45] N. Gupta and V. Gaur, "Effect of internet addiction on social relations," *Int. J. Sci. Adv. Res. Technol. (IJSART)*, vol. 7, no. 11, pp. 110–117, 2021.
- [46] N. Gupta and V. Gaur, "Sextortion tops charts in cyber crimes," *Int. J. Mod. Trends Sci. Technol.*, vol. 7, no. 12, pp. 31–37, 2021.
- [47] V. Gaur, N. Gupta, and A. Bhatt, "An interactive study of AI and psychology," *Int. J. Early Child. Spec. Educ. (INTJECSE)*, vol. 13, no. 2, pp. 3506–3511, 2021.
- [48] V. Gaur and A. Bhatt, "Alzheimer's: A psycho-social concern," *Res. Militaris*, vol. 13, no. 2, 2023.
- [49] N. Gupta, V. Gaur, and A. Bhatt, "Implications of artificial intelligence in society: An analysis," *Eur. Chem. Bull. (ECB)*, vol. 11, no. 7, pp. 892–902, 2022.
- [50] N. Gupta, V. Gaur, A. Bhatt, and S. Parveez, "The role of teachers in virtual classrooms and online learning environments to improve educational skills," *Educ. Adm.: Theory Pract.*, vol. 29, no. 3, pp. 611–616, 2023.
- [51] N. Gupta, V. Gaur, S. Gupta, and A. Bhatt, "Addressing ethical dilemmas and challenges in conducting research involving human subjects, data privacy, and academic integrity," *J. ReAttach Ther. Dev. Divers.*, vol. 6, no. 8s, pp. 981–988, 2023.
- [52] N. Gupta, V. Gaur, A. Bhatt, S. Gaur, and S. Parveez, "Psychosocial factors in brand perception among Generation Z (The first 'digital natives')," *Library Progress Int.*, vol. 43, no. 2, pp. 1937–1944, 2023.
- [53] Bhatt, V. Gaur, N. Gupta, and S. Gaur, "Education in sustainability and corporate social responsibility: A critical analysis," *Eur. Econ. Lett. (EEL)*, vol. 14, no. 3, pp. 2522–2536, 2024.
- [54] D. Gupta, S. Gupta, N. Gupta, and V. Gaur, "A study of the impact of floods on alcohol

- consumption and its subsequent effect on domestic violence: Case study of Bihar (India)," *Nanotechnol. Percept.*, vol. 20, no. s14, 2024.
- [55] Bhatt, V. Gaur, N. Gupta, and S. Gaur, "Analyzing the effects of artificial intelligence on lifestyle, consumer satisfaction, resilience, and mental health among the tribal population of Uttarakhand," *J. Inf. Syst. Eng. Manage.*, vol. 10, no. 23s, pp. 638–650, 2025.
- [56] V. Gaur, N. Gupta, A. Bhatt, and S. Gaur, "Understanding consumer behavior in international markets: A cross-cultural psychological study," *Adv. Consum. Res.*, vol. 2, no. 1, pp. 225–229, 2025.
- [57] K. Sharma, "Mechanization without ownership: Market structure and pricing in Nepal's Terai," *CABI Agriculture and Bioscience*, vol. 7, no. 1, p. 0020, Feb. 2026.
- [58] K. Sharma, P. Basnet, and K. R. Bhatt, "Social media discussion and short-horizon stock returns: Evidence from a retail coordination episode," *Digital Finance*, vol. 8, no. 1, pp. 1–17, 2026.
- [59] K. Sharma and R. N. Shrestha, "The migration paradox: Why remittances fail to stimulate agricultural investment in Nepal's Terai plains," *Economics Bulletin*, vol. 45, no. 4, pp. 1649–1657, Dec. 2025.
- [60] D. Antar, "The use of drama in developing the skill of speaking in Standard Arabic among third grade Arabic-speaking students," *Theory and Practice in Language Studies*, vol. 13, no. 7, pp. 1601–1613, 2023.
- [61] D. Antar, "The effectiveness of using ChatGPT-4 in creative writing in Arabic: Poetry and short story as a model," *Information Sciences Letters*, vol. 12, no. 12, pp. 2445–2459, 2023.
- [62] D. Antar, "Manifestations of color in the poetry of Arab crowd poets," *Journal of the Faculty of Arts, Helwan University*, vol. 41, no. 1, pp. 7–26, 2016.
- [63] S. I. Sadigova et al., "Unveiling the dynamics of sociolinguistics, understanding language in social contexts, artificial intelligence effect," *Forum for Linguistic Studies*, vol. 7, no. 12, pp. 1–15, 2025.
- [64] N. T. Safarli et al., "Foreign language proficiency among EFL students in higher education and usage of artificial intelligence," *Forum for Linguistic Studies*, vol. 7, no. 8, pp. 646–665, 2025.
- [65] C. Samad et al., "Deep learning-driven smart pedagogy and assessment: A quality framework for outcome-based education in higher education," in *Proc. 2025 Global Conf. Emerging Technology (GINOTECH)*, IEEE, Apr. 2025.
- [66] N. K. Pasha et al., "The impact of AI tools on enhancing EFL learners' engagement in higher education," in *Proc. 2025 Global Conf. Emerging Technology (GINOTECH)*, IEEE, Apr. 2025.
- [67] Gullapelly et al., "AI-based pedagogical framework for improving engagement of EFL learners in higher education," in *Proc. 2025 Int. Conf. Intelligent Communication Networks and Computational Techniques (ICICNCT)*, Sept. 5–6, 2025, IEEE.
- [68] C. C. Marella, "Driving Business Success: Harnessing Data Normalization and Aggregation for Strategic Decision-Making," *International Journal of Intelligent Systems and Applications in Engineering*, vol. 10, no. 2s, pp. 308–317, Nov. 2022.
- [69] C. C. Marella and A. Palakurti, "Harnessing Python for AI and machine learning: Techniques, tools, and green solutions," in *Advancing Social Equity Through Accessible Green Innovation*. Hershey, PA, USA: IGI Global Scientific Publishing, 2025, pp. 237–250.
- [70] B. C. C. Marella, "From Silos to Synergy: Delivering Unified Data Insights across Disparate Business Units," *International Journal of Innovative Research in Computer and Communication Engineering*, vol. 12, no. 11, pp. 11993–12003, Nov. 2024.

- [71] M. M. Reddy Chinthala and M. Kalloji, "Policy-Oriented Zero Trust Microsegmentation for East-West Traffic Governance in Hybrid Cloud Architectures," 2025 6th International Conference on Smart Electronics and Communication (ICOSEC). IEEE, pp. 1330–1335, Sep. 24, 2025.
- [72] M. M. R. Chinthala, H. Apuri, and K. Bitra, "Behaviour-Aware Hybrid Deep Networks for Detecting Zero-Day and Ransomware Threats," *IJITEE*, vol. 15, no. 5, pp. 1–10, Apr. 2026.
- [73] G. Imran and R. Parveen, "Impact of Note Taking in Higher Education: A Case Study of Bilingual Students of Saudi Arabia," *Journal of Education, Society and Behavioral Science*, vol. 25, no. 4, pp. 1–14, 2018.
- [74] H. Mahmood, S. Hassan, R. Parveen, and M. Tanveer, "Role of Rule of Law in the Renewal Energy Transition in Saudi Arabia: A Review and Analysis," *Academic Journal of Interdisciplinary Studies*, vol. 13, no. 4, pp. 186–197, Jul. 2024.
- [75] H. Mehraj, D. Jayadevappa, S. L. A. Haleem, R. Parveen, A. Madduri, M. R. Ayyagari, and D. Dhabliya, "Protection Motivation Theory Using Multi-Factor Authentication for Providing Security over Social Networking Sites," *Pattern Recognition Letters*, vol. 152, pp. 218–224, Dec. 2021.
- [76] J. Zhang, M. Raza, R. Khalid, R. Parveen, and E. H. Ramírez-Asís, "Impact of Team Knowledge Management, Problem Solving Competence, Interpersonal Conflicts, Organizational Trust on Project Performance: A Mediating Role of Psychological Capital," *Annals of Operations Research*, vol. 326, no. Suppl 1, pp. 41–42, 2023.
- [77] L. Zhang, R. Khalid, M. Raza, N. Chanrawang, and R. Parveen, "The Impact of Psychological Factors on Women Entrepreneurial Inclination: Mediating Role of Self-Leadership," *Frontiers in Psychology*, vol. 12, pp. 1–13, Dec. 2021.
- [78] M. Z. M. Nomani and R. Parveen, "Contextualizing Epidemic Diseases (Amendment) Ordinance, 2020 in Epidemic-Pandemic Syndrome of COVID-19 in India," *Systematic Reviews in Pharmacy*, vol. 11, no. 8, pp. 156–160, 2020.
- [79] M. Z. M. Nomani and R. Parveen, "COVID-19 Pandemic and Application of Disaster Management Act, 2005: Promises and Pitfalls," *International Journal of Pharmaceutical Research*, vol. 12, no. 4, pp. 3730–3734, 2020.
- [80] M. Z. M. Nomani and R. Parveen, "COVID-19 Pandemic and Disaster Preparedness in the Context of Public Health Laws and Policies," *Bangladesh Journal of Medical Science*, vol. 20, no. 5, pp. 41–48, 2021.
- [81] M. Z. M. Nomani and R. Parveen, "Legal Connotations of Biological Resources and Its Ripple Effect on Conservation Research in India and Abroad," *International Journal of Conservation Science*, vol. 12, no. 2, pp. 571–576, 2021.
- [82] M. Z. M. Nomani and R. Parveen, "Legal Dimensions of Public Health with Special Reference to COVID-19 Pandemic in India," *Systematic Reviews in Pharmacy*, vol. 11, no. 7, pp. 131–134, 2020.
- [83] M. Z. M. Nomani and R. Parveen, "Medico-Legal Insights into COVID-19 Pandemic and the Platter of Health Law Reform in India," *International Journal of Pharmaceutical Research*, vol. 12, no. 1 Suppl, pp. 2328–2332, 2020.
- [84] M. Z. M. Nomani and R. Parveen, "Prevention of Chronic Diseases in Climate Change Scenario in India," *Environmental Justice*, vol. 13, no. 4, pp. 97–100, 2020.
- [85] M. Z. M. Nomani and R. Parveen, "Socioeconomic Disparities in Times of COVID-19 Pandemic in India," *Environmental Justice*, vol. 15, no. 5, pp. 212–220, Oct. 2022.
- [86] S. Akram and Z. Pervaiz, "Estimation of inequality of opportunities across countries: a multidimensional approach," *Stud. Econ. Econometrics*, vol. 48, no. 1, pp. 18–41, 2024.

- [87] S. Akram and Z. Pervaiz, "The Role of Institutions and Social Inclusion in Trust Building," *Qual. Quant.*, vol. 58, pp. 3887–3903, 2024.
- [88] S. Akram and Z. Pervaiz, "Assessing Inequality of Opportunities for Child Well-being in Pakistan," *Child Ind. Res.*, 2025.
- [89] S. Akram, F. Zahid, and Z. Pervaiz, "Socioeconomic determinants of early childhood development: evidence from Pakistan," *J. Health Popul. Nutr.*, vol. 43, no. 1, p. 70, 2024.
- [90] S. Akram, M. U. Hassan, and M. F. Shahzad, "Factors Fuelling the Persistence of Child Labour: Evidence from Pakistan," *Child Ind. Res.*, vol. 17, no. 4, pp. 1771–1790, 2024.
- [91] S. Akram, M. Raashid, M. Usman, S. Shahzad, and S. Zareen, "Correlates of Low Birth Weight and Effectiveness of Kangaroo Mother Care for its Management: Lessons Learned from A Tertiary Care Hospital of Lahore, Pakistan," *J. Educ. Soc. Stud.*, vol. 5, no. 3, pp. 213–220, 2024.
- [92] S. Akram, Z. Pervaiz, and A. R. Chaudhary, "The Impact of Income Inequality and Intergenerational Mobility on Human Development: An empirical evidence from Pakistan," *Int. J. Disaster Recovery Bus. Contin.*, vol. 12, no. 1, pp. 263–268, 2021.
- [93] S. Akram, "Bridging the gap: understanding out-of-school children in Pakistan," *Vulnerable Child. Youth Stud.*, vol. 19, no. 3, pp. 454–469, 2024.
- [94] R. A. A. Alkhayyal and R. Parveen, "The Impact of Implementing Value-Added Tax on the Islamic Banking Practices," *International Journal of Religion*, vol. 5, no. 2, pp. 452–458, Feb. 2024.
- [95] R. Parveen and A. Alajmi, "An Overview of Bitcoin's Legal and Technical Challenges," *Journal of Legal, Ethical and Regulatory Issues*, vol. 22, no. 1, pp. 1–11, 2019.
- [96] R. Parveen and A. Alajmi, "Global Environmental, Social and Economic Issues in the Fast Fashion Industry," in *Proceedings of the 32nd International Business Information Management Association Conference*, 2018, pp. 1234–1245.
- [97] R. Parveen and A. Alajmi, "Globalization, Climate Change and Emergence of Global Environmental Law," in *Proceedings of the 32nd International Business Information Management Association Conference*, 2018, pp. 1246–1257.
- [98] R. Parveen and B. Nasir, "The Role of Legal Framework in Attracting Foreign Investments: The Case Study of Tourism Sector in Saudi Arabia," *Russian Law Journal*, vol. 12, no. 1, pp. 1123–1132, 2024.
- [99] R. Parveen and E. Chikhaoui, "Legal Issues and Challenges in Educational Cloud Computing in the Kingdom of Saudi Arabia," *International Journal of Economic Research*, vol. 14, no. 20, pp. 357–371, 2017.
- [100] R. Parveen and Y. J. Amuda, "Exploring Multidimensional Impacts of COVID-19 on Children in Nigeria," *Journal of Infrastructure, Policy and Development*, vol. 8, no. 10, pp. 1–20, 2024.
- [101] R. Parveen, "Artificial Intelligence in Construction Industry: Legal Issues and Regulatory Challenges," *International Journal of Civil Engineering and Technology*, vol. 9, no. 13, pp. 957–962, Dec. 2018.
- [102] R. Parveen, "Challenges in Cloud Computing Adoption: An Empirical Study of Educational Sectors of Saudi Arabia," *Indian Journal of Science and Technology*, vol. 11, no. 48, pp. 1–9, Dec. 2018.
- [103] R. Parveen, "Corporate Governance in Saudi Arabia: Analysis of Current Practices," *Journal of Legal, Ethical and Regulatory Issues*, vol. 24, Special Issue 1, pp. 1–5, 2021.
- [104] R. Parveen, "Issues and Challenges in Cloud Computing in Mechanical Engineering," *International Journal of Mechanical Engineering and Technology*, vol. 9, no. 10, pp. 380–386,

Oct. 2018.

- [105] R. Parveen, Y. J. Amuda, and S. Hassan, "Effects of Corruption on the Human Social Economic Development: A Case Study of India, Nigeria and Bangladesh," *International Journal of Economic Research*, vol. 14, no. 20, pp. 373–388, 2017.
- [106] S. Hassan, Y. J. Amuda, and R. Parveen, "Persecuted Muslim Minority: Zakat, Waqf, and Sadaqah as Financial Instrument for Human Development," *International Journal of Applied Business and Economic Research*, vol. 15, no. 25, pp. 475–484, 2017.
- [107] Y. J. Amuda and R. Parveen, "Environmental Legal Frameworks and Practices for Attaining Sustainable Development Goals in Nigeria and Student Academic Performance," *Journal of Posthumanism*, vol. 5, no. 5, pp. 2539–2560, 2025.
- [108] Y. J. Amuda, and R. Parveen, "Public-Private Partnerships in Driving Sustainable Agricultural Growth for Addressing Poverty and Food Insecurity in Nigeria," *Journal of Ecohumanism*, vol. 3, no. 4, pp. 3228–3240, 2024.
- [109] Hoti and A. Dermaku, "Corporate governance in the banking industry of Kosovo: does board size and board independence matter?" *International Journal of Finance & Banking Studies*, vol. 7, no. 3, pp. 20-34, 2018.
- [110] R. K. Dahal, "Customer satisfaction in Nepalese cellular networks," *Tribhuvan University Journal*, vol. 33, no. 2, pp. 59–72, 2019.
- [111] R. K. Dahal, "Contemporary management accounting techniques and organizational performance," *Pravaha*, vol. 26, no. 1, pp. 177–185, 2020.
- [112] R. K. Dahal, "Assessing social and environmental performance," *Academy of Accounting and Financial Studies Journal*, vol. 25, no. 6, pp. 1–9, 2021.
- [113] R. K. Dahal, "Performance score as a measure of organizational effectiveness," *Pravaha*, vol. 27, no. 1, pp. 131–138, 2021.
- [114] R. K. Dahal, "Customers' perspectives on the Nepalese cellular telecommunications services' technological and innovation capabilities," *International Journal of Social Sciences and Management*, vol. 9, no. 1, pp. 41–47, 2022.
- [115] Muthulakshmi, J. Tamilselvi, and S. S. Hameed, "Moderating effects of challenges on self-efficacy and satisfaction of women street vendors," *Int. J. Electron. Finance*, vol. 13, no. 3, pp. 386–402, 2024.
- [116] T. Arumugam, S. S. Hameed, J. M. Ehya, V. Kadiresan, and R. Krishnaraj, "Impact of Artificial Intelligence on Customer Journey Mapping and Experience Design," in *Optimizing Intelligent Systems for Cross-Industry Application*, pp. 121–136, IGI Global, 2024.
- [117] V. Kadiresan, S. S. Hameed, and B. Subramaniam, "Empathizing the Effect of Mobile Coupon Promotions on Social Shopping Behaviour," *FMDB Trans. Sustain. Hum. Soc.*, vol. 1, no. 1, pp. 30–38, 2024.
- [118] T. Arumugam, S. Hameed, J. M. Ehya, R. Krishnaraj, and S. Subbulakshmi, "Empowering Distributors by Leveraging Consumer Tenacity With Advanced Marketing Intelligence Systems and Intelligent Process Automation," in *Advancements in Intelligent Process Automation*, pp. 459–480, IGI Global, 2025.
- [119] D. Qehaja, F. Zeka, and A. Hoti, "The effect of foreign direct investments on trade balance in southeast Europe during the period 2000–2018," *International Journal of Applied Economics, Finance and Accounting*, vol. 13, no. 1, pp. 29-39, 2022.
- [120] E. Perjuci and A. H. O. Hoti, "The effects of international financial reporting standards implementation on the financial performance and position of businesses in developing countries: Evidence from Kosovo," *International Journal of Applied Economics, Finance and Accounting*, vol. 13, no. 1, pp. 1-9, 2022.

- [121] H. Hoti and L. S. Sopa, "Compliance with International Standards on Auditing (ISAs): Evidence from Kosovo for the Financial Reporting Period 2015–2019," *Finance: Theory and Practice*, vol. 26, no. 2, pp. 219-230, 2022.
- [122] D. B. Acharya, B. Divya, and K. Kuppan, "Explainable and fair AI: Balancing performance in financial and real estate machine learning models," *IEEE Access*, vol. 12, no.10, pp. 154022–154034, 2024.
- [123] K. Kuppan, D. B. Acharya, and B. Divya, "Foundational AI in insurance and real estate: A survey of applications, challenges, and future directions," *IEEE Access*, vol. 12, no. 12, pp. 181282–181302, 2024.
- [124] D. B. Acharya, K. Kuppan and B. Divya, "Agentic AI: Autonomous Intelligence for Complex Goals—A Comprehensive Survey," in *IEEE Access*, vol. 13, no.1, pp. 18912-18936, 2025.