

**Towards a Gen Z student retention model in higher education:
An investigation using pluralist research approach**

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This Report Presented in Partial Fulfillment of the Requirements for
The Degree of Masters of Science in Computer Science and Engineering

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APPROVAL

This Project titled “Towards a Gen Z student retention model in higher education: An investigation using pluralist research approach”, submitted by S. M. Abrar Shahriar, ID No: 232-25-030 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 11-01-2025.

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I hereby declare that this research has been done by me under the supervision of Dr. Md. Taimur Ahad, Associate Professor, Department of CSE, Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

Student retention is a crucial factor in higher education. It has been more challenging for Gen Z students in recent years. Realizing this challenge, this study aims to develop a retention model tailored to Generation Z (Gen Z) students, who bring unique characteristics as digital natives with preferences for flexible, career-oriented, and personalized learning experiences. Through a pluralist approach combining quantitative data including semester-wise enrollment and dropout, CGPA range and reasons for dropping out, collected from universities and qualitative insights from focus group study session, this research identifies key challenges influencing student retention, explores the generational and demographic nuances of Gen Z, and evaluates existing retention models. This approach allows for a comprehensive exploration of the primary challenges impacting student retention, the distinct characteristics and learning patterns of Gen Z, and evaluation of existing retention models in order to develop effective retention model. The findings aim to bridge gaps in current practices by proposing actionable strategies that align with Gen Z's needs and expectations. The study's outcomes are expected to guide policymakers and institutions in reducing dropout rates, enhancing academic success, and fostering a future-ready workforce, contributing to broader national development goals.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Student retention refers to the ability of an institution to retain students until they complete their studies. Today, alongside demographic, financial and other related variables, student retention is also seen as an institution-wide responsibility, with institution, professional staffs and faculty playing a central role, and it has become a key focus in educational accountability [1-4]. However, initially student retention was viewed through a psychological lens, attributing attrition to individual traits like lack of ability, motivation, or willingness, essentially "blaming the victim." Research by Vincent Tinto emphasized a significant shift in understanding student retention by covering several studies spanning between 1970 to 2006, noting that since the 1970s, the focus moved from individual attributes to recognizing the critical role of institutional environments in shaping students' decisions to persist or withdraw. Starting with identifying student involvement only in the first year as critical retention factor, over time, many studies expanded to consider various student backgrounds, institutional types and institutions role, highlighting the importance of both in-class and out-of-class experiences [5].

Table 1.1: Number of admitted students in universities between 2021-2023

Year	University Enrollment (approximate)	Source
2021	12.34 lakhs	Bangladesh Bureau of Educational Information and Statistics – 2021 [6]
2022	10.34 lakhs	Bangladesh Bureau of Educational Information and Statistics – 2022 [7]
2023	10.59 lakhs	Bangladesh Bureau of Educational Information and Statistics – 2024 [8]

According to a report by New Age, more than 2.49 lakh students dropped out of universities in Bangladesh in just 2021, which indicates around 5.3% of yearly dropout [9]. Furthermore, according to The Business Standard, roughly eight lakh university students nationwide graduate each year [10]. Based on the data in Table 1.1 and the approximate graduation rate, it can be statistically inferred that approximately 1 in 5 students drops out of higher educations, which underscores a significant concern regarding student retention. A key aspect of enrollment management is student retention. However, factors like academic challenges, financial constraints, mental health issues, lack of engagement, inadequate support system, students' health or life circumstances as well as managing personal and professional responsibilities are key challenges acts as barrier against student retention.

Table 1.2: Age range of Gen X, Millennials and Gen Z (Sources [11, 12])

Generations	Born Between	Current Age (approximate)
Gen Z	1995 - 2012	13 - 30
Millennials	1980- 1994	31 - 45
Gen X	1965 - 1979	46 - 60

Born in the middle of the 1990s to the beginning of the 2010s, Gen Z is significantly influenced by rapid technological advancements and social changes. This generation is characterized as digital natives, having grown up with technology as an integral part of their lives. Their digital literacy is shaped by their constant interaction with technology, which enhances their ability to navigate online environments effectively [13]. Gen Z is already entering and dominating higher education, making up a large portion of university enrollments today. The landscape of higher education has shifted dramatically, especially with COVID-19 accelerating the adoption of digital learning tools and remote education [14]. Gen Z, being the first fully digital-native generation, has different learning preferences and expectations. Their engagement with online learning platforms, gamified

experiences, and self-paced, interactive content [15]. They have high expectations when it comes to values alignment. They want institutions to be more socially responsible and sustainability-conscious [16]. This means retention models should focus on values-driven engagement, such as opportunities for students to participate in social justice causes, sustainability initiatives, and inclusive environments. Compared to other generations, Gen Z is more entrepreneurial and career-focused. They often look for educational experiences that provide practical skills and career pathways, not just theoretical knowledge [17]. Traditional models focused on broad academic achievement may not be enough to retain Gen Z students, who prefer hands-on, skills-based learning and want institutions that help them secure meaningful employment or entrepreneurial opportunities post-graduation. This requires a shift in retention strategies to include career readiness programs, internships, and professional networking opportunities that align with Gen Z's expectations. Gen Z seeks a more personalized learning setting. They seek customized learning paths, flexible schedules, and a more collaborative learning environment. Retention models need to integrate adaptive learning technologies and tools that provide personalized feedback and tailored learning experiences. Despite the vast body of research on student retention, there remains a gap in understanding the unique needs of Gen Z students, especially in higher education in Bangladesh, where traditional models often fail to address generational and demographic differences.

1.2 Motivation

The rising dropout rates in higher education, particularly in Bangladesh, highlight a critical need to understand and address student retention. With around 5.3% of students leaving university each year, this issue not only affects individual academic outcomes but also poses significant challenges to national development. The unique characteristics of Gen Z students, including their preference for digital learning and career-oriented education, require tailored strategies that align with their needs. This study is motivated by the urgency to bridge this gap, ensuring higher retention rates and fostering a more inclusive and effective learning environment for the digital-native generation.

1.3 Rationale of the Study

Student retention is a vital measure of institutional success, yet traditional retention models often lack behind to address the diverse needs of Gen Z students. As the first generation of digital natives, they bring unique expectations, such as flexible learning, career readiness, and values-driven engagement, which remain largely unexplored in the context of Bangladeshi higher education. By adopting a pluralist approach, this study seeks to develop a retention model that considers these generational differences, offering practical insights for policymakers and institutions to enhance educational accountability and improve student outcomes.

1.4 Objective and Research Questions

The research aims to develop an effective student retention model tailored specifically to the characteristics and needs of Generation Z students in higher education institutions in Bangladesh. This model seeks to address the primary factors influencing retention and persistence, particularly by adapting strategies that align with Gen Z's distinct preferences for digital, flexible, and career-oriented learning experiences. The key research question guiding this study are the followings:

- RQ1: What are the primary challenges affecting student retention in higher education in Bangladesh?
- RQ2: What strategies can be implemented to improve higher education retention rates, specifically tailored to the characteristics and learning patterns of Generation Z students?

To develop a student retention model for higher education in the context of Bangladesh, this study adopts a pluralist approach where quantitative data were collected from universities and qualitative analysis were made from focus group study. The primary challenges affecting student retention, the characteristics and learning patterns of Generation Z students and several retention models were also analyzed from existing

literatures to develop strategies that can be implemented to improve higher education retention rates.

1.5 Expected Outcome

This research aims to produce a comprehensive student retention model tailored to Gen Z students in Bangladesh. The model will identify key challenges, strategies for retention, and practical solutions that align with their distinct characteristics, such as digital engagement, flexibility, and personalized learning experiences. The findings are expected to guide universities in implementing effective policies and programs, ultimately reducing dropout rates, improving academic success, and fostering a skilled, future-ready workforce.

1.6 Significance of the Study

This research is significant as it addresses a pressing issue in higher education: the need to adapt retention strategies to meet the evolving demands of Generation Z students. As the largest demographic currently entering universities, Gen Z students bring unique characteristics, such as a preference for digital learning and a need for flexible, personalized educational experiences. Understanding and catering to these needs can help institutions reduce dropout rates, improve academic success, and foster a more inclusive learning environment. By developing a retention model that aligns with the learning preferences of Gen Z, this study contributes to the broader goal of enhancing educational outcomes and preparing a skilled workforce, ultimately benefiting society and driving national development.

1.7 Scope and Limitations

The scope of this research is focused on developing a retention model specifically for Generation Z students in higher education institutions within Bangladesh. This study primarily targets students in universities, analyzing factors that influence their decision to

persist or leave their programs. The study utilizes on data from selected universities, which may not fully represent the diversity of experiences across all institutions in Bangladesh, and hence the pluralist approach was adopted combining existing theories and literatures, quantitative analysis and insights received from students, alumnis, guardians, teachers, administrators, coordination officers and academic supporting staffs in focus group studies.

1.8 Outline of the Study

Chapter 1 provides a summary of the research, including the introduction, background, objectives, significance, and the scope and limitations. Chapter 2 provides a comprehensive literature review, covering student retention challenges, characteristics and learning patterns of Gen Z, and relevant retention models. In Chapter 3, the research approach is described. The analysis and study findings are presented in Chapter 4. Chapter 5 discusses the sustainability plan, societal and environmental impacts, and ethical considerations. Lastly, the study conclusion and further research directions are suggested in Chapter 6.

CHAPTER 2

BACKGROUND

2.1 Student Retention and Its Challenges

Academic challenges indicate the difficulties students face in comprehending course material or managing their academic responsibilities and workloads, which can significantly impact their decision to persist in their studies. Academic challenges can undermine students' confidence, making it harder to stay motivated and committed to their studies. Difficulty in understanding course material or managing academic workloads can increase pressure and lead to dropout [18-26].

Several studies define financial constraints in the context of higher education as a major barrier imposed by high tuition fees, living expenses, and inadequate financial aid, which hinder students' ability to afford their education and ultimately contribute to dropout rates. For some, balancing work to fund their education impacts their academic performance and engagement. When students are unable to meet these financial demands, they are more likely to withdraw, contributing to higher dropout rates. [27-34].

Students' mental health issues are defined as encompassing conditions such as depression, anxiety, and stress, which significantly impair students' academic performance and overall well-being, leading to dropout, thus posing a challenge to student retention [35-44].

When students are not actively engaged, they may feel disconnected from their institution, peers, and academic experiences, which can negatively impact their sense of belonging, motivation, and overall academic success. Limited involvement in campus life, clubs, or academic communities can reduce students' connection to the institution which is a challenge to retention [45-47].

Inadequate support systems refer to the insufficient or ineffective structures, resources, or services provided to students by an educational institution to help them succeed academically, personally, or professionally. This can manifest through lack of academic

advising, mentorship or career counseling. Due to this, students may feel unsupported, confused, or disconnected from their academic goals and future career prospects, leading to demotivation, higher dropout rates, and lower academic achievement [48-55].

Family and personal responsibilities such as obligations and duties that students have outside of their academic life, including taking care of family members, managing household tasks, maintaining personal and professional or employment commitments as well as personal health circumstances like chronic illness or personal issues like death in the family, getting married, being a parent etc. are defined as significant barriers to student retention in many studies. Balancing family, work, and academic life can lead to overwhelming pressure for some students [56-64].

2.2 Gen Z: Characteristics and Learning Pattern

Gen Z, generally described as people born between the middle of the 1990s and the beginning of the 2010s, has unique traits influenced by social, economic, and political changes as well as the quick development of technology [65, 66]. Gen Z are technology savvy, they are the first generation to grow up with the internet, smart phones, and social media from a very young age. They are highly proficient with technology and expect instant access to information [67, 68]. Platforms like Instagram, Snapchat, TikTok, YouTube etc. are central to their social interactions and identity-building, making them social-media centric [69,70]. They are often involved in multitasking, engaging in multiple activities simultaneously [71-73]. This generation exhibit entrepreneurial Spirit as many of them are interested in entrepreneurship and freelancing, often turning hobbies into side hustles or full-time careers through online platforms [74, 75]. They are career-focused; seek meaningful work, often prioritizing passion and values [76, 77]. However, they often face high levels of anxiety due to factors like academic pressure, economic instability, and the challenges of growing up in a hyper-connected world [73, 78]. Gen Z's are conscious consumers. They prefer brands that align with their values and supporting causes, and refrain from using brands with different causes [79-81]. Peer recommendations, reviews,

and influencers heavily impact their purchasing decisions [82, 83]. Gen Z feels more globally connected due to the internet and social media. They have exposure to diverse perspectives and cultures, leading to more open-mindedness and curiosity about global issues [84]. Growing up during rapid technological advancements and major global events (like the COVID-19 pandemic), Gen Z is adaptable and quick to learn new skills or adjust to new circumstances [68, 85].

Gen Zs' prefer digital tools like e-learning platforms, apps, and online tutorials over traditional textbooks [67, 86]. They value self-paced learning at their own pace, often turning to resources like YouTube tutorials, online courses (e.g., Coursera, Udemy), and apps that allow them to control the speed and depth of their learning [87, 88]. They often prefer active learning materials that incorporate videos, graphics, interactive quizzes, and games. They are more engaged with visually stimulating content compared to static text-based materials. Incorporating game-like elements (e.g., points, badges, leader boards) into learning — is popular with Gen Zs', gamification makes the learning process more engaging and rewarding. They are often driven by acknowledgement and rewards, which is why they appreciate learning environments that offer certificates, badges, or public recognition for their achievements [86, 89]. They respond well to short videos, quick lessons, and concise tutorials [90, 91]. Gen Zs want the freedom to access learning materials anytime and anywhere, seeking information in a "just-in-time" manner. Learning by doing is important to them, and they like practical, hands-on experiences that let them use what they've learned in real-world situations. This makes project-based learning, simulations, internships, and case studies highly effective [68]. Gen Zs' are attracted to environments where they can collaborate with peers, either in person or through online platforms.

2.3 Student Retention Models

Tinto (1975) developed a retention model that aimed to understand the factors influencing student persistence in higher education. He conducted a thorough literature review of

existing research on student attrition and integrated insights from sociology and psychology to construct a theoretical framework. Tinto emphasized the importance of social integration and academic integration in students' experiences, proposing that these factors significantly affect their decision to remain enrolled. He also introduced the concept of student departure as a process rather than a single event, suggesting that interactions within the educational environment are crucial. The findings indicated that students who are well-integrated socially and academically are more likely to persist in their studies. Ultimately, Tinto's model highlighted the need for institutions to create supportive environments that foster both social and academic connections to improve student retention rates [92].

Lang (2001) synthesized existing research on student retention to highlight the complexity of factors influencing attrition in higher education. Utilizing a literature review methodology, the study examined qualitative and quantitative data from various studies over two decades, identifying key elements such as academic integration, social integration, and institutional support as crucial for improving retention rates. The findings suggested that effective retention programs must foster supportive academic environments, promote social connections, and consider the unique challenges faced by diverse student populations to enhance persistence in higher education [93].

Schwieger and Ladwig (2018) investigated methods to attract, prepare, and retain Generation Z students in higher education amid budget constraints and demands for better efficiency. The authors stated that understanding the distinctive traits of this generation is crucial for educators aiming to effectively engage and retain these students in the classroom. By embracing technology, fostering collaboration, and connecting learning to real-world issues, educators can enhance student engagement and retention in the classroom [94].

Miller and Mills (2019) explored how perceptions of faculty caring affect the educational experiences of Millennial and Generation Z students. The authors posit that the emotional connection between students and faculty significantly influences student engagement,

motivation, and overall academic success. Using focus groups, the researchers qualitatively examined students' views on the impact of faculty empathy, support, and genuine interest in their well-being. The findings indicate that faculty caring significantly enhances student engagement, motivation, and academic success by fostering a reciprocal relationship between emotional connection and active participation [95].

According to Pedler, Willis, and Nieuwoudt (2022), a sense of belonging is crucial in the setting of higher education. They focused on its impact on student retention, motivation, and overall enjoyment of the university experience. They noted that many students face challenges during their transition to university life, which can lead to feelings of isolation and disengagement. Data was collected from university students in a variety of subject areas using a mixed-methods strategy that combined quantitative surveys and qualitative interviews. The findings suggested that by prioritizing belonging, institutions can create a more supportive and enriching educational environment that ultimately benefits both students and the university as a whole [96].

Bashir et al. (2021) investigated the adaptations in biosciences courses during the COVID-19 pandemic, focusing on the transition from face-to-face teaching to online and hybrid models while identifying the associated challenges, opportunities, and implications for teaching and learning. They adopted qualitative and quantitative data collection methods, gathering information through literature reviews, surveys and interviews with educators and students. The findings suggested the need for ongoing professional development for educators and the potential for hybrid models to enhance resilience in higher education as well as highlighted the need for ongoing professional development for educators and the importance of integrating technology to increase retention factor [97].

In order to find practical methods and frameworks to improve student engagement and learning outcomes, Alamri, Watson, and Watson (2021) set out to investigate learning technology models that encourage personalization in blended learning settings in higher education. The authors conducted a systematic literature review to analyze existing research on learning technology models that facilitate personalization in blended learning,

examining various educational technologies and pedagogical frameworks. The study found that effective personalization in blended learning relies on adaptive learning technologies, emphasizes learner autonomy and self-directed learning, and a structured framework for integrating personalized learning technologies could greatly enhance student retention, engagement and academic success [98].

Snijders et al. (2020) examines the relationships between the quality of student-faculty interactions and outcomes related to student engagement and loyalty in higher education, proposing a model that highlights how students' perceptions of faculty relationships impact their engagement and institutional loyalty. A quantitative study was conducted with 454 higher education students, using structured questionnaires to assess students' perceptions of relationship quality with faculty and measures of engagement and loyalty. The findings reveal that high-quality student-faculty relationships, particularly affective commitment, positively influence student engagement and loyalty, indicating that strengthening these relationships can enhance educational outcomes and retention rates, thus urging institutions to prioritize them [99].

Al-Samarraie et al. (2020) systematically reviewed the literature on the flipped classroom model in higher education, aiming to synthesize findings on its effectiveness across various academic disciplines and its impact on student learning outcomes and engagement. Authors conducted a comprehensive literature review of studies published between 2010 and 2019, utilizing a systematic approach to analyze both qualitative and quantitative research on the flipped classroom model from multiple disciplines. Findings indicate that the flipped classroom model generally enhances student engagement, satisfaction, and academic performance, particularly in STEM disciplines, although its effectiveness varies across fields and depends on factors like instructional design quality and student preparedness, highlighting the need for thoughtful implementation [100].

Naylor and Mifsud (2020) aimed to develop a framework that examines how structural inequalities—such as socioeconomic status, race, and institutional factors—impact student retention and success in higher education. The authors employed a qualitative research

approach, analyzing existing literature and data to identify patterns between structural factors and student experiences, and proposed a conceptual model to integrate these factors for a comprehensive understanding of their impact on retention. The study revealed that structural inequalities significantly hinder student retention and success, identifying key issues such as financial barriers and lack of access to resources, and emphasized the need for systemic approaches and policy changes to address these disparities and promote equity in higher education [101].

Alsharari and Alshurideh (2020) introduced a retention model for academic settings that emphasizes the interaction between creativity, emotional intelligence, and learner autonomy, proposing that these elements positively influence student retention. Using quantitative research methods, including hypothesis testing through Smart Partial Least Square (SPLS) and qualitative data analysis, the study finds significant relationships among the model components, highlighting that emotional intelligence strongly correlates with learner autonomy [102].

Nieuwoudt and Pedler examines the factors influencing student retention in higher education, focusing on why students choose to remain enrolled despite facing challenges that might prompt them to leave. To gather insights, the authors utilized a mixed-methods approach, surveying 578 current university students to understand their experiences, perceptions, and the motivations behind their decisions to stay or consider leaving university. The findings revealed that while many participants contemplated leaving due to family commitments, financial strain, and time management challenges, strong support systems, personal motivation, and a sense of belonging encouraged them to remain enrolled, underscoring the importance of institutional support in enhancing student retention [23].

Boyd et al. (2022) investigated how community experiences impact students' perceptions of retention and satisfaction in higher education, emphasizing the importance of community engagement in fostering feelings of belonging and commitment to educational institutions. To explore this, the authors used a mixed-methods research design, conducting

a quantitative survey of 450 undergraduate students and qualitative interviews with 30 students to assess their community experiences, retention perceptions, and overall satisfaction levels. The study found that positive community experiences significantly enhance retention perceptions and satisfaction, with students actively involved in campus organizations and social events reporting a stronger sense of belonging, which in turn bolstered their commitment to completing their education [103].

Herodotou et al. (2020) investigated how incentive strategies and predictive analytics of learning might raise student retention rates and boost administrative support in distant learning. The authors utilized quantitative analysis of student engagement data and qualitative interviews with students and staff, and the design of specific motivational interventions aimed at boosting engagement and retention. The findings revealed that predictive analytics effectively identified at-risk students, motivational interventions significantly enhanced student engagement, and strong administrative support was crucial for the success of distance education programs [104].

The long-term impacts of student involvement, psychological wellness, and behavioral health on college student retention were examined by Thomas et al. The researchers employed a longitudinal study design involving a diverse sample of college students, collecting data at multiple time points through surveys assessing behavioral and emotional health, as well as student involvement, and analyzed the relationships using structural equation modeling (SEM). The findings revealed that poor behavioral health negatively impacted retention, emotional health was crucial for persistence, increased student involvement positively correlated with retention, and there were significant interrelationships among these factors. The authors recommend that higher education institutions implement comprehensive support systems to address behavioral and emotional health issues while promoting student involvement to enhance retention rates [105].

Olaya et al. (2020) developed and evaluated an uplift modeling approach to identify students at risk of dropping out of higher education, enhancing intervention strategies to

improve retention. The authors employed a quantitative methodology using a dataset from a higher education institution, focusing on data collection, uplift modeling techniques to estimate the causal effects of interventions, model development with machine learning algorithms, and evaluation using metrics like the Qini coefficient and area under the uplift curve (AUUC). The findings indicate that uplift modeling effectively identifies at-risk students, demonstrates the incremental impact of interventions, and can improve retention strategies in higher education institutions. This highlights that educational institutions adopting suitable data-driven approaches can enhance their retention efforts and support at-risk students effectively [106].

The effects of transportation obstacles, insufficient childcare, and food insecurity on community college students' perseverance and retention were examined by Baugus (2020). The study employed a mixed-methods design, combining survey data collection on socio-economic challenges, qualitative interviews to explore personal experiences, and data analysis using statistical and thematic methods. The findings revealed that a significant number of students faced food insecurity, which negatively affected their academic performance and well-being. Inadequate child care was a major barrier for student parents, contributing to higher dropout rates due to difficulties attending classes and completing assignments. Transportation disadvantages, particularly for students in areas with limited public transit, increased absenteeism and hindered academic engagement. The study emphasized the interconnectedness of these challenges and recommended comprehensive support services like food pantries, child care assistance, and transportation options to enhance student retention [107].

Payne's (2021) explored the perceived influence of mentoring programs on the retention and success of African American male students in higher education. The study used a qualitative case study approach, involving purposive sampling of participants, semi-structured interviews for data collection, and thematic analysis to identify key themes from the narratives. Findings indicated that the mentoring program significantly improved academic persistence by offering guidance, encouragement, and accountability [108].

Huo et al. (2022) investigated why students drop out and suggests strategies to improve retention in higher education by understanding students' perspectives. The study used a survey of 260 hospitality management students and employed Tinto's model and the theory of planned behavior, with data mining techniques like CART to analyze dropout factors and retention predictions. Findings indicated that factors like financial difficulties, residency status, and perceived class quality contributed to dropouts, and recommended strategies included enhancing support services, improving instruction, and fostering a community [109].

Mickelson et al. (2022) examined retention impact among underserved computer science students, particularly low-income, female, and underrepresented groups under a program with several benefits. Using a mixed-methods approach, the study analyzed data from written reflections and surveys, focusing on the program's comprehensive support elements like scholarships, mentoring, tutoring, and social integration. The findings revealed that these combined interventions significantly enhance students' sense of belonging and computer science identity, which were crucial for boosting retention rates in underserved demographics [110].

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Methodology

The student retention factors and strategies in the higher educational process is a complex phenomenon. This strategy needs an educational context, and this approach is also applicable for realizing educational functions. In order to create an efficient retention model for higher education and obtain a thorough grasp of the elements affecting Gen Z students' retention in higher education, this study takes a pluralist approach, integrating quantitative and qualitative methodologies. When dealing with complicated topics that cannot be fully comprehended by a single method, a pluralist approach is very helpful since it enables the integration of contextual insights and numerical data. For example, Fernández et al. employed a pluralist approach, integrating both numerical data and theoretical models to characterize the dynamic behaviors of students in high-failure rate courses [111]. Quantitative data, such as enrollment trends and dropout rates, provide measurable evidence, while qualitative insights, gathered through focus groups and interviews, offer deeper context regarding the unique challenges faced by Gen Z students. This generation's distinct characteristics—such as their digital nativity, mental health concerns, and preference for flexible learning—make traditional approaches insufficient for capturing the full scope of their needs and behaviors. By leveraging a pluralist methodology, this research aims to explore both broad patterns and individual experiences, enabling a nuanced analysis that is essential for designing effective retention strategies tailored to the Gen Z cohort. Figure-1 outlines the overall structure of the methodology adopted in this study

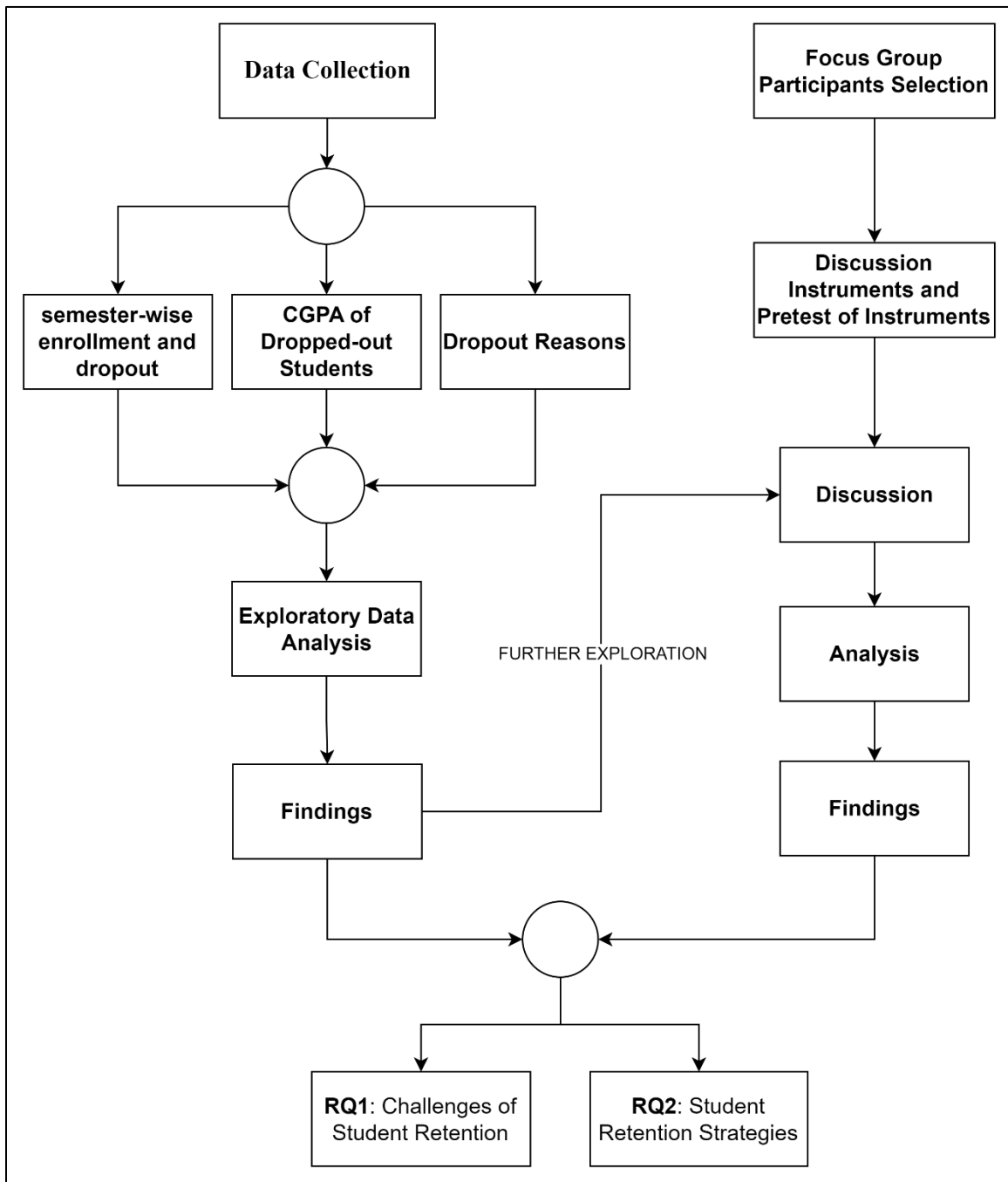


Figure 3.1: Research Methodology: Mix-method Approach

3.2 Quantitative Method

The study analyzed semester-wise enrollment and dropout data for Computer Science and Engineering students from Fall 2020 to Spring 2024 semester. This data was sourced from the student portals of several tri-semester based universities in Bangladesh. Additionally, data of average CGPA and reasons for withdrawal were also collected from these universities.

In the exploratory data analysis (EDA) phase, Python programming language was used to visually present and analyze several key aspects of student enrollment and dropout trends. Semester-wise enrollment trends were plotted for each batch to illustrate changes in enrollment over time. Batch-specific trends in student enrollment and dropout were also charted, providing insight into retention and dropout patterns. Additionally, visualizations were generated for common dropout reasons, dropped out students CGPA and outstanding due amounts trends, helping to reveal factors potentially influencing student retention.

Based on the quantitative findings, several key questions were identified and raised for deeper exploration in the qualitative phase. These questions were used to guide the focus group discussions, aiming to uncover nuanced perspectives and contextual factors underlying the observed trends. This pluralist approach ensured that quantitative insights were complemented with qualitative depth, enriching the study's understanding of student retention dynamics.

3.3 Qualitative Method

This research uses a qualitative methodology, which is suitable for conducting exploratory research to investigate human behavior and intricate education systems. For example, Gallagher and Savage applied the qualitative methodology to explore challenges in higher education [112]. Nieuwoudt and Pedler conducted a qualitative methodology to understand why students choose to remain at university [23]. Liz Thomas also qualitatively explored

the student retention strategy to succeed in higher education [113]. Moreover, this approach also allows for a more comprehensive understanding of the subjective matter, social relationships, and artifacts and enables researchers to objectively comprehend psychological phenomena. In this study, the qualitative approach explores student retention processes in higher study. The following sections go over the justification and steps involved in the qualitative methodology.

3.3.1 Focus Group Study

The researcher proposed a focus group in place of one-on-one interviews. The focus group study aims to find out the affordance, risk, and other key points of student retention for higher education. Focus groups are recommended when understanding of a subject is insufficient. Also, a focus group encourages other participants to deliver information. However, two focus groups were developed, one consisting of students, alumnis and guardians and another one consisting of teachers, administrators, coordination officers, and supporting staff so that students, alumnis and guardians could provide insights into personal experiences and challenges, while teachers, administrators, and staff could offer institutional and operational perspectives. Focus group study was not structured into a single group as students and guardians may feel intimidated sharing openly in the presence of authority figures, ensuring more candid responses when separated.

3.3.2 Focus Group Member Selection

Focus group participants were deliberately chosen based on predetermined demographic characteristics, and experiences, ensuring a representative sample for the study. Agreed upon participants from university students, alumni, teachers, guardians, administrators, coordination officers, and supporting staff of university were chosen to participate in focus groups. The researchers individually engaged with participants, establishing a rapport. The researchers conducted an informal discussion to evaluate the appropriateness of potential participants for the selected focus group, ensuring a cohesive and relevant group dynamic.

Each of the focus groups included 12 members. The selection of this particular number was based on the practical consideration that managing a group of 12 people was feasible. Moreover, the setup process encountered no logistical challenges. Tables 1 and 2 provide a summary of the details of focus group participants.

Table 3.1: Focus Group - 1 Participants Details

Participant's code	Description	Year/Experience
Stu01	Student, Department CSE	3rd
Stu02	Student, Department CSE	2nd
Stu03	Student, Department BBA	4th
Stu04	Student, Department English	3rd
Stu05	Student, Department Math	2nd
Stu06	Student, Department EEE	2nd
Stu07	Student, Department Software	4th

Alu01	Alumni, Department of EEE	N/A
Alu02	Alumni, Department of English	N/A
StuG01	Guardian of a student, teacher	15+
StuG02	Guardian of a student, officer	12+
StuG03	Guardian of a student, engineer	22+

Table 3.2: Focus Group - 2 Participants Details

Participant's code	Description	Experience (Year)
PC01	Teacher of CSE department	10+
PC02	Teacher of CSE department	6+
PC03	Teacher of EEE department	12+
PC04	Teacher of the Software department	7+

PC05	Teacher of English department	3+
PC06	Administrator	5+
PC07	Administrator	8+
PC08	Coordination officer	3+
PC09	Coordination officer	4+
PC10	Supporting staff	7+
PC12	Supporting staff	5+
PC12	Supporting staff	8+

3.3.3 Focus Group Discussion Instruments and Pretest of Instruments

An interview instrument can comprise structured, semi-structured, and unstructured questions. Open-ended, semi-structured interviews were used in this focus group study. Husband, G. recognizes the impact of semi-structured interviews for ethical data collection on research respondents [114]. To test interview questions, a small group was formed consisting of three members before conducting the actual focus group study. The three

members were chosen including teacher, administrator, and a student. The members were selected from the personal contacts of the researchers. The main purpose of this process is to check if the questions were answerable and understandable to the participants and to make sure questions capture the required phenomenon and produce the most useful information.

3.3.4 Focus Group Discussion Process

The semi-structured interview approach facilitated the focus group by guiding without restricting discussion. This approach enables participants to freely express themselves in their own words because it leads the focus group without restricting the conversation. The questions were not accompanied by predetermined answers, allowing for a broad exploration of the issue. Some of the information given by the participant was surprising. The use of a semi-structured instrument allowed researchers the flexibility to introduce additional questions when needed for clarification. And researchers use some closed questions to refine participant's positions and find out more precise responses. The following questions were incorporated into the semi-structured questionnaire:

1. *In your opinion, what are the key factors influencing student retention rates in educational institutions?*
2. *What strategies could be effective to increase student retention rate?*

Some key questions were raised through quantitative analysis which needed to be addressed. These questions were specifically raised in Focus Group 2, which included teachers, coordinators, administrators, and staff, because they required macro-level insights into institutional and systemic factors that could not be fully explored through the micro-level perspectives of students, alumni, or guardians.

Following the final selection of participants, the researchers introduced themselves. Researchers dedicate some time to interact with participants before commencing the interview because, in Bangladesh, social conversation and interaction play a crucial role in

building rapport. These informal conversations helped participants feel more at ease and become better acquainted with the research. The researcher contacted each focus group participant via phone after the final selection of the group. Following participant confirmation, they were notified of the discussion's location and time. The venue was thoughtfully chosen to provide privacy to the participants and ensure that they were not preoccupied. Before the interview started, the participants were provided a briefing about the research and provided with background information about the research. Furthermore, the researcher addressed any questions from the participants to ensure clarity. A consent form outlining the research purpose, policies, interview recording procedures, participant privacy, and avenues for complaints was presented. The participant was requested to read the consent form and encouraged to ask any questions they might have. The interview was two hours long. The questions previously formulated and tested were employed to explore the discursive structures that shape the student retention strategy in higher education. This open discussion encouraged the participants to answer. The responses were recorded on a voice recorder with their permission. In addition, the researchers and three student volunteers took notes on remarks and other information that wasn't always captured by voice recording, like body language, facial expressions, or concerns. For protection and safety, the audio file was moved to a computer. For additional analysis, interview replies were transformed into text data.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Exploratory Data Analysis

The semester-wise enrollment trends graph (Figure 4.1) displays the enrollment percentage for 11 batches across consecutive semesters between Fall-2020 to Spring-2024, highlighting patterns of retention and attrition over time. Each line represents a batch, allowing for easy comparison of enrollment stability or decline across different batches. The universities follow a tri-semester system, dividing the academic year into three four-month semesters. Students are required to register at the beginning of each semester to continue in their current semester. The Bachelor of Science (BSc) in Computer Science and Engineering (CSE) program at these institutions is structured as a four-year course, comprising 12 semesters in total. Here batch name indicates semesters when students were first taken admission. The data trend highlights a decline in student numbers as semesters progress, reflecting reduced enrollment.

Figure 4.2 provides a comprehensive view of enrollment (retention) and enrollment loss percentages, presented in batch-wise subplots. Each row of subplots is organized based on the duration of year or semester completion: the first row showcases batches with at least three years of academic period, the second-row features batches with a minimum of two years, the third row includes those with at least one year, and the fourth row contains batches with less than one year of completion. From a long-term perspective, the first and second rows are particularly informative as they reflect retention and dropout trends spanning two or more years. Across all batches, there is a noticeable gradual decline in retention alongside an increase in enrollment loss rates. However, a concerning trend is evident in the more recent cohorts, which demonstrate significantly higher enrollment loss percentages—around or exceeding 20%—within just a few semesters. In contrast, the initial six batches remained around the 20% dropout zone after their second or third year. If the current upward trajectory in enrollment loss rates continues as observed in previous batches, many students may be at risk of leaving the program.

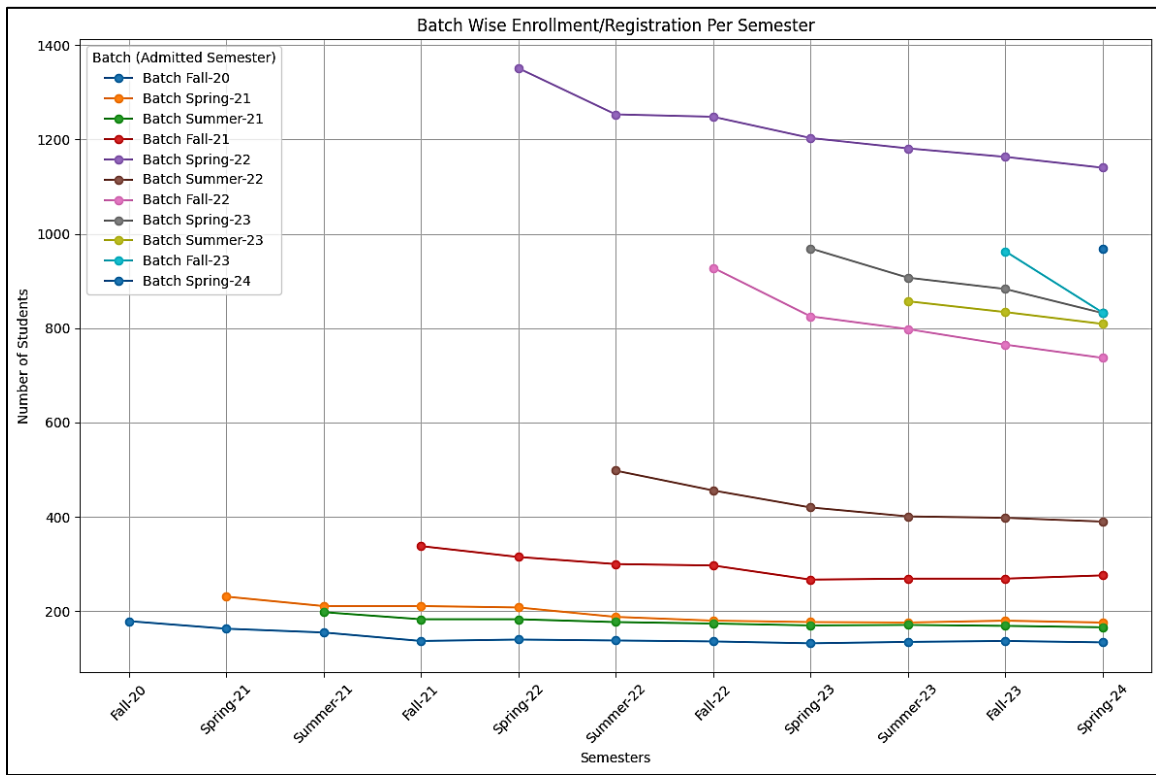


Figure 4.1: Semester-wise enrollment trends

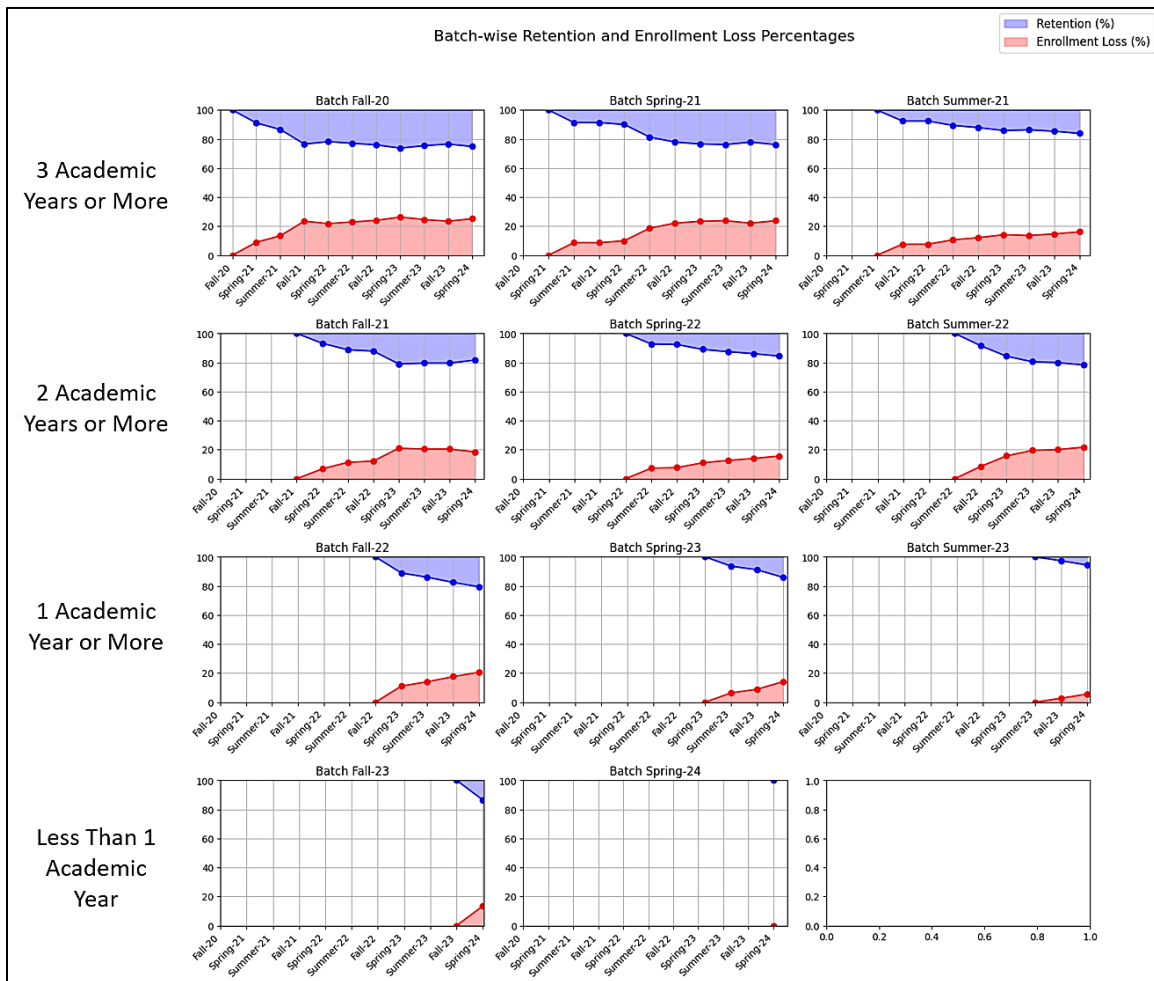


Figure 4.2: Retention and Enrollment Loss Percentages

The figure below presents the average CGPA range among students who discontinued, transferred or decided to take a break. According to these universities' grading systems, a CGPA of 2.00 (equivalent to 40%-44% marks) is the minimum passing grade, while a CGPA below 3.00 is often regarded as low achievement. The graph shows a notable portion with failing grades. Additionally, there is a significant dropout trend among students with CGPAs between 2.00 and 3.00, indicating that students with CGPAs below 3.00 are at a high risk of leaving.

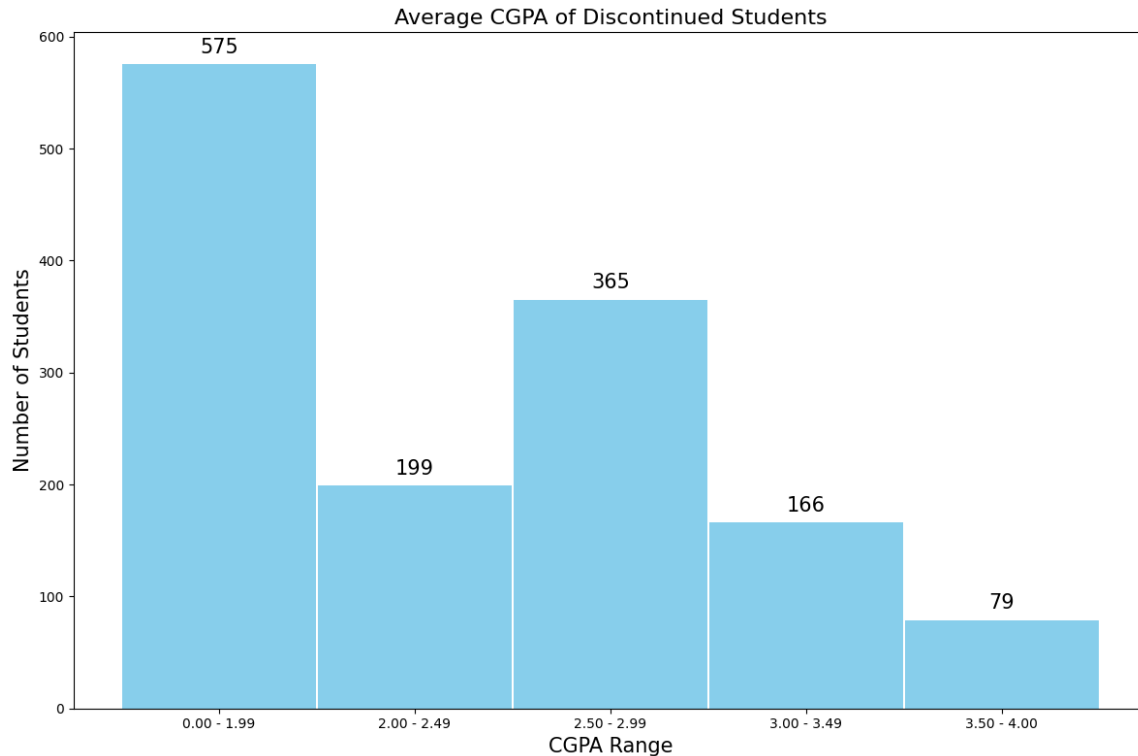


Figure 4.3: CGPA Range of Discontinued Students

The bar chart below categorizes the primary reasons for student who left institution under broader categories. Academic transfer is the most common case, with a significant student leaving due to transferring to another academic institution, changing major or department. Factors like academic pressure, complexity in understanding course materials, bad grade or poor academic services often act as potential contributing factors that led students to transfer or change major. Relocating abroad is another considerable factor, with many students leaving for international opportunities. This trend suggests that a substantial portion of students view global prospects as more appealing than those offered by local institutions. Financial constraints due to high tuition fees also lead to a considerable number of dropouts, underscoring the impact of economic barriers on retention. Health issues and employment also came up as contributing factor to dropout which is a challenge to retention. From the data source, personal and family problem involved sickness or death in family, getting married and being a parent along with other related family and personal issues. Other reasons include issues like transportation challenges, lack of interest in

continuing studies, lack of parental involvement, involvement in other training programs, and plans to return in future semesters. Notably, an alarming issue is that in many cases, parents were unaware of their child’s dropout, indicating a gap in communication and need for some length of discipline for students. Unknown reasons make up the second-largest category, with numerous dropout cases remaining unspecified or unrecorded. This may be due to a lack of valid information or difficulties in reaching students, parents, or relatives. This gap in data collection and reporting highlights an area for improvement, as further exploration could reveal underlying factors that would support the development of more effective student retention strategies.

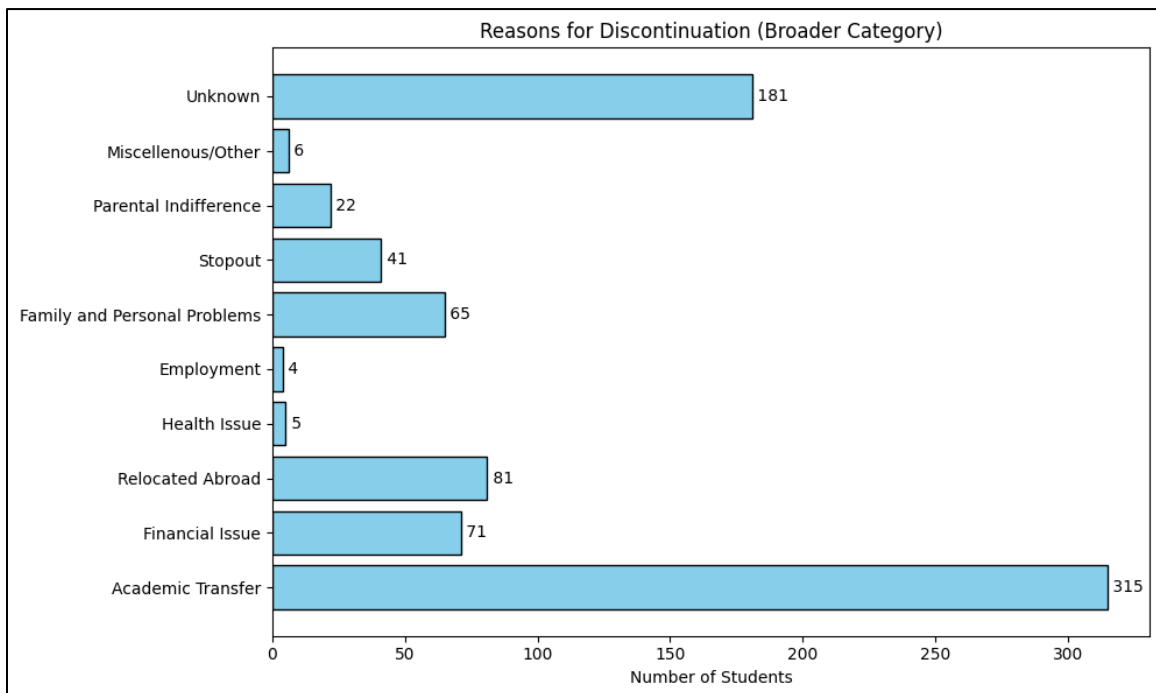


Figure 4.4: Reasons for Discontinuation

Following the exploratory data analysis (EDA), several intriguing patterns and trends emerged that required further investigation. The analysis revealed notable retention losses in recent times, prompting questions about potential factors might have contributed to this

shift. Additionally, while dropout rates were a significant focus, the data highlighted the need to explore other contributing factors, such as stop-outs and academic transfers, and their collective impact on overall retention as they cannot exactly be considered as dropout cases. Furthermore, correlations between retention and academic grades surfaced during the analysis, raising questions about how academic performance influences a student's likelihood to persist. These observations led to the formulation of key questions, which were subsequently explored in greater depth through focus group discussions to uncover the underlying factors driving these trends.

4.2 Focus Group Statements

From both focus group studies, key statements of the participants are provided starting from 4.2.1 to 4.2.6 section. Statements were categorized into 6 categories including academic engagement, university social inclusion, student monitoring, parental intervention, academic services and peer relationship. Section 4.2.7 highlights interpretations of focus group-2 participants on the quantitative analysis insights.

4.2.1 Academic Engagement

- Proactiveness of Advisors

STU_1 highlighted the challenge of seeking help when struggling:

“....Sometimes..... I am struggling but don't feel comfortable asking for help, there are also some students who feel in the same way.... Somehow if course teacher pay attention to us and keep track of attendance and check in with students who are missing classes regularly it could make a big difference.....”

STU_4 emphasized the importance of proactive advisors:

“.....Well, I feel like advisor need to be more proactive, not just he need to wait for us to come to him if we face problem.....I think if our advisor also try to keep in

touch with students we can feel more supported ... ummmm... also, you can say that it will be helpful for our progress....”

STU_5 expressed concerns about seeking help from certain teachers:

“.....I sometimes hesitate to ask certain teachers for help because I worry they might take it the wrong way or think I’m not putting in enough effort..... What if they get annoyed and this somehow affects my grades?..... It would help if the university had a more anonymous way to ask for help or provide feedback.....”

However, PC_11 highlighted the importance of recognizing that student disengagement isn’t always tied to institutional factors:

“.....While it’s important to focus on academic engagement, we must remember that students also have responsibilities outside of university..... Not all disengagement is due to lack of support from the institution; sometimes personal circumstances play a bigger role.....”

- Mental and financial support

STU_2 suggested that financial support based on individual circumstances could be highly beneficial:

“.....Our university offer waiver system but to get them we need to maintain CGPA..... But.... at my worst situation it will be hard to maintain CGPAIf university able to give us extra financial support after analyzing our situation..... it will be super helpful.....”

STUG_1 voiced concern about potential financial difficulties in the future:

“.....Alhamdulillah now it is not a big deal to pay my daughter’s tuition fees... But what if my situation will change?... Isn't it lead dropout? I really worried about it.... I think university need to give special waivers”

STUG_2 suggested that flexible payment plans or emergency financial aid options could alleviate stress on families, as expenses extend beyond tuition alone:

"...The cost of education is always a concern... If the university could provide more flexible payment plans or emergency financial aid options, it would relieve some of the stress on families... It's not just about tuition; other expenses can add up too....."

PC_3 highlighted concern over students' mental struggles:

“..... As a teacher I feel sorry for the student There are a lot of students who struggle mentally and their stress often leads to dropping out..... It would be great if university give them more support by offer more mental health resources.... ”

PC_6 emphasized the need to streamline existing support policies:

".....We have policies in place to support students, but I think we need to streamline them... The processes for requesting academic help, financial aid, or mental health resources sometimes may not be user-friendly..... Making these processes easier could encourage more students to seek help before it's too late....."

PC_1 observed that students often struggle with time management and balancing responsibilities:

".....I often see students struggling with time management and balancing coursework with other responsibilities..... Incorporating life skills training or time

management workshops as part of the curriculum could support students in managing their stress better....."

PC_8 pointed that while universities provide ample opportunities, students often fail to take the initiative:

".....I think the university does offer opportunities for students to engage, but it's up to them to make the most of them..... There are clubs, workshops, and events, but sometimes students just don't take the initiative..... Maybe they just need to be more proactive in seeking out these opportunities....."

- Counseling and skill development

ALU_1 reflected on their lack of awareness about available resources:

".....When I was a student, I had no idea what resources were available to help me with my studies.... If the university provided more awareness about existing support services, like tutoring or career counseling, it could have made a big difference in my academic journey..... I think current students would benefit from such initiatives too..."

STU_7 admitted of feeling lost in career planning:

".....Sometimes I feel lost when it comes to career planning..... If the university provided more workshops on career development or connected us with mentors from our field, I think it would help keep students motivated and focused on their future....."

ALU_2 highlighted the value of earlier skill development and proposed alumni involvement in academic engagement:

"...After graduation, I realized how valuable certain skills would have been if I had focused on them earlier... If alumni could be more involved in mentoring current students or sharing their experiences, it might help students see the bigger picture and stay committed to their education..."

PC_2 observed that students often feel hesitant and suggested for better training in effective communication:

"...I know some students feel intimidated, but in my experience, most teachers are willing to help if you approach them the right way... It's just about finding the courage to speak up... Maybe they just need better training on how to communicate with teachers without fear..."

4.2.2 University Social Inclusion

- Subject Engagement

PC_2 acknowledged the challenge of maintaining consistent communication with students, noting that:

"..... I can say that I really try to communicate with my students through some social media platform But sometimes it's hard to keep in touch with all of them as only their course teacher for a short time ... Here time is a big issue ... I think authority need to pay attention to this issue ..."

PC 4 highlighted the benefits of utilizing social media groups as means for effective communication:

".....I find WhatsApp groups useful because they allow for real-time communication, no distractions like social media platforms.....Many of my students want to connect with me here.... Many students are already familiar with it, as it is easy to engage and respond quickly compared to formal channels like emails..... It's

informal, but it works, especially for quick clarifications and reminders... even voice or video calls and document sharing....”

STU_7 shared their dissatisfaction regarding e-learning platform, commenting:

“.....We do have an e-learning platform, but it's somewhat frustrating to use sometimes... Pages take forever to load, and during assignment deadlines, the system often crashes because it can't handle the traffic..... It needs to be more streamlined and user-friendly.....”

PC_5 highlighted the importance of students developing good academic habits, such as avoiding procrastination, but agreed with the concerns raised by students about the current e-learning platform:

“...I always tell students not to leave things until the deadline, as it's part of developing good academic habits... That being said, I do agree on the part that the current platform does need to be streamlined...”

- Encouraging Social Activities

PC_1 pointed out the proactive nature of students in social causes and stated:

“....I've noticed that students are always the first to step up when it comes to social activities...They are incredibly proactive in social causes, often organizing relief efforts and community service without hesitation... If we, as teachers, and the university offer them more support, it will only strengthen their motivation and show them that their efforts are truly valued...”

- Impactful Programs

Expressing the impact of academic stress relief, STU_6 remarked:

“..... Academic stress is not a jock to me But when I get a chance to hang out with my friend it’s really.... really help me to regain my strength I want more open-air concerts and be a part of more social activities”

Reflecting on past events, ALU_2 shared:

“.....We used to have cultural programs in the university auditorium, and while those were nice..... I think it would have been more engaging if we had more open-air concerts..... More people could attend, and it would be less about sitting quietly and more about truly enjoying the vibrant environment.....”

PC_9 observed a growing interest among students in concerts:

“.....We’ve seen a huge interest from students for concerts, especially with well-known bands... They’re always asking for at least one big concert each year, and it’s clear these events are a highlight for them..... We are considering ways to incorporate more such events including Foundation Day, Fresher reception and graduation program.....”

4.2.3 Monitoring Students

- Monitoring Academic Activities

STUG_3 expressed concern about the challenging transition from high school to university:

“...My child had a hard time transitioning from high school to university... The sudden shift in academic expectations was overwhelming, and without proper guidance, I think they would have struggled even more... It seems like many students face similar issues, and some don’t make it through...”

PC_2 observed that many students lack the discipline to manage academic responsibilities:

“...I’ve noticed that students, when left entirely to their own devices, sometimes lack the discipline to manage their academic responsibilities... The independence they get in university is new for many of them, and without some kind of structured guidance, they can easily lose focus...”

According to the observation of PC_5:

“.....We’ve noticed that a lot of students, especially in their first year, struggle to adjust to the demands of university life... Many of them miss classes, fall behind in assignments, and seem hesitant to seek help... These early signs often lead to poor performance later, which might result in them dropping out.....”

PC_7 pointed out a significant drop in retention rates during the first two years:

“...We’ve seen a noticeable drop in retention rates during the first two years... Students who don’t engage socially or academically in those crucial early stages are the ones most at risk... It’s clear that they need more support and guidance, but the question is how we can provide that without being overly invasive...”

PC_10 proposed a stricter approach for first- and second-year students:

“...I think a stricter approach in the first and second years could really help... Students are adjusting to university life, and having more structured guidance could keep them on track... Regular check-ins and hall activity monitoring could ensure they don’t fall through the cracks during this critical period....”

However, PC_7 took a cautious approach and stated:

“...I agree that monitoring students closely, especially in the first two years, can be beneficial for retention... But we have to be careful not to make it feel too restrictive... A balance is needed, where we keep an eye on their progress and activities without taking away their sense of independence...”

- Monitoring Hall Activities

PC_8 emphasized that structured monitoring of hall activities, attendance, and academic progress can significantly improve retention rates:

“...We’ve seen that early, structured monitoring can make a significant difference in retention rates... Keeping a closer watch on attendance, academic progress, and even hall activities can identify issues before they escalate... We need to find a way to make monitoring supportive rather than punitive, so students feel guided rather than controlled...”

PC_6 shared plans to implement robust monitoring for first- and second-year students:

“..... We are considering a robust monitoring process for first- and second-year students that includes oversight of their residential hall activities to enhance student retention and well-being... We try to ensure that students are actively participating in campus life and.... receiving the support they need.....”

PC_7 noted that many guardians’ values closer monitoring during the early years:

“...We are aware of the guardians’ desire for closer monitoring, especially during the first and second years... Regular check-ins and monitoring can help ensure students are adapting well to hall life while maintaining their independence...”

4.2.4 Parental Intervention

- Involvement of Parents

STUG_1 highlighted the importance of regular parent-teacher meetings:

“.....As a parent.....I believe that regular parent-teacher meetings are needed..... I want to know about my child’s performance.... It may help me to stay engaged in their education... Also if he face any difficulties it will be helpful to find out in early stage”

STUG_2 added to the point of regular parent-teacher meetings:

“..... I know that my child is a bit introvert ... It is very difficult for me to find out if he struggling any problem in her varsity life ... I think parent teacher meeting is good idea”

STUG_3 shared that:

“..... I have noticed that sometimes my son doesn’t share his grades with us.... I need to know where my child is struggling and I want to help him overcoming them.....”

PC_4 acknowledged the often-overlooked role of parents in supporting a student's academic success:

“.....I think we often overlook the role that parents can play in a student's academic success... If we had regular parent meetings, we could update them on their child's progress and provide guidance on how they can support at home..... It would help create a consistent support system for the students.....”

PC_12 proposed that regular parent-teacher meetings could significantly enhance parental involvement:

“.....Regular parent-teacher meetings could be a game-changer..... Keeping parents informed about their child's academic standing, attendance, and overall performance might encourage more active involvement..... Perhaps we can also create a dedicated portal for parents where they can monitor grades and feedback without needing to wait for formal meetings.....”

PC_7 pointed out the need for a balance between parental involvement and respecting students' independence:

“.....While I agree that parental involvement can be beneficial..... we have to balance it with respecting the student's independence..... Maybe we could focus on involving parents more in the first two years..... when students are still adjusting, and gradually reduce that involvement as they become more self-sufficient.....”

4.2.5 Improve University Student Services

- Enhanced food, transport and hall services

STU_2 stated:

“...The prices in the canteen seem a bit high for the quality we get. I think it should be more affordable, especially for students who eat here regularly...”

STU_1 added:

“...The food in the halls should be both healthy and affordable... Right now, hall services price is a bit high, and the quality of meal is inconsistent... We need better meals without the prices going up...”

ALU_1 commented:

“...Even when I was a student, the canteen food wasn’t the best, and it seems like not much has changed... It’s always been a bit overpriced for what you get, and I’d hoped they would improve the quality by now...”

STUG_1 stated:

“...I’d like to see regular monitoring of my child’s well-being, especially regarding their diet... If the university provides healthy meals at reasonable prices, it would give us peace of mind... Proper monitoring ensures they’re getting the right nutrition, and I’d appreciate updates if there are any concerns...”

STUG_2 emphasized:

“...I want my daughter to have a secure environment in the hall... It’s crucial that the university provides adequate security measures... However, it’s also important that she has the freedom to move around within safe limits...”

PC_11 shared their observation:

“...I often hear students complain about the food quality and high prices in the canteen... It’s a common issue that affects their willingness to eat on campus, and some end up skipping meals, which isn’t healthy...”

STU_4 pointed:

“...There are not enough buses, especially during peak times... It’s frustrating to have to stand the entire way because the buses are overcrowded... A few more buses during busy hours would make a huge difference...”

STU_7 shared:

“...Well, in my university, we have enough busses, but the bus timings don’t align well with the class schedule... Buses are often scheduled to arrive early in the morning,

but my classes don't start until noon... I end up waiting around for hours, which wastes a lot of time..."

PC_9 acknowledged and stated:

"...We understand that transportation is an ongoing issue... While we do have buses, the timing and routes need to be more aligned with students' schedules to minimize waiting times and overcrowding... We are looking into potential adjustments..."

- Kinder behavior from academic staffs and authorities

STU_6 commented:

"...The in-out rules should be reasonable, not overly strict... We need flexibility to go out when necessary, but I understand why security is important... Finding a balance would make hall life less stressful... I am part of them who choose hall according to the best service I think enhancing hall services and make sure the staff and treat us kindly will be helpful....."

- Monitoring Misuse of Authority

PC_12 raised concern:

"..... As a staff, I know that ...there are some people misuse their place and manipulate studentAuthority should do something for this issue....."

- Monitoring classroom environment

STUG_2 expressed:

".....As a parent, I'm always concerned about whether the classroom environment is safe and comfortable for my daughter..... It's not just about academics but also about how inclusive and respectful the atmosphere is..... Knowing that she feels secure and valued makes a big difference for us....."

- Timely Services & Financial Relief Policies:

PC_6 suggested:

“...I think by ordering laptops in bulk, we can negotiate better prices, which would be a great financial relief for students... It would also allow us to provide consistent technical support and maintenance services, ensuring all students have a dependable device for their studies...”

PC_4 suggested:

“...Introducing a medical or clinical support corner in the halls could significantly improve student well-being and reduce financial burdens... This kind of support might attract more students to choose on-campus living, knowing that health services are readily available...”

PC_8 stated:

“.....As part of our commitment,we try to provide all advertised services...in a timely manner but sometimes students miss their chance to get them in time because of their irresponsibility ”

- Omnichannel Platform to access services

PC_10 mentioned:

“...As being a hall staff, guardians often call hall me for updates on their children’s well-being, which understandable but sometimes a bit stressful for me to maintain alongside my regular responsibilities... A dedicated portal that provides information on students’ in-out times, today’s meal options, and any relevant updates could ease their concerns... It’s all about increasing transparency and maintaining a reliable communication channel between parents and the university...”

PC_7 shared:

“...We’re thinking of developing an omnichannel platform to streamline all university services... Students will be able to access everything—class schedules, meal plans, health services, and more—from a single portal... This should make university life simpler and more efficient, minimizing the need to use multiple platforms...”

4.2.6 Fostering peer relationship

- Creating comfortable environment

STU_3 emphasized the need for spaces where students can comfortably collaborate and interact:

“.....In my opinion,..... It would be great if we had a space where we all feel comfortable talking and working together.... I will help us to learn better and connect with more people”

STU_7 supported the idea, highlighting the importance of a collaborative space for sharing thoughts and fostering mutual bonding among students:

“..... It will be great if i get to engage in a collaborating environment.... I want to share my thoughts Also I think this type of environment is good for other student to enhance their mutual bonding”

STU_6 expressed a desire for informal spaces that encourage free interaction:

“...I wish we had more spaces where we could meet and collaborate freely... It’s not always comfortable to talk in a formal classroom setting, but having a casual environment would make sharing ideas easier... A comfortable space would help us connect, not just academically but socially too...”

STUG_1 shared a parental perspective, stressing the importance of a comfortable space for students to build friendships, support networks, and collaborative skills alongside academic growth:

“...I think it’s important for my child to have a space where they can comfortably interact with peers... It’s not just about academics—it’s about building friendships, support networks, and learning to work with others...”

PC_6 acknowledged the value of creating such spaces, noting their alignment with the university’s goals of fostering a supportive and inclusive community to strengthen peer relationships:

“...Creating spaces that foster open communication among students aligns with our goal of building a strong, supportive community... We recognize the importance of peer relationships in student retention and overall well-being...”

- Encouraging open communication

PC_3 observed that students who avoid peer interaction often struggle with engagement, impacting their ability to seek help, share ideas, and participate in learning activities:

“...Students who don’t interact much with their peers seem to struggle with engagement in class activities... They’re less likely to seek help, share ideas, or participate in discussions, which impacts their learning experience....”

ALU_1 reflected on how friendships were a critical support system during their studies:

“...Looking back, it was my friendships that got me through the tough times... I can see how a lack of those connections would make university life feel lonely and challenging... Without that support system, it’s easy to lose interest and give up...”

PC_4 noted the link between isolation and academic struggles:

“...It’s easy to feel isolated when you don’t have a strong peer group... Without classmates to turn to, studying feels overwhelming, and it’s harder to stay motivated... I’ve seen students drop out because they didn’t feel like they belonged...”

- Initiatives to Strengthen Peer Relationships

PC_8 suggested:

“.....I think Investing in areas where students can gather, collaborate, and discuss freely would be a step in the right direction... Investing in dedicated spaces in the university, such as open lounges, study room or open-air settings like courtyards, gardens, academic gatherings like "Meet & Greets," with alumni’s’, participation in cultural programs or club activities can turn out to be effective.....”

4.2.7 Exploring Insights of Quantitative Analysis

- Reasons for decreased retention rate in recent times

PC_1 sees the difficulty in adapting back to traditional academic settings after pandemic as potential reason for retention loss in recent years:

“.....During the pandemic, the virtual academic environment offered significant flexibility, enabling students to attend classes from anywhere, often at their own pace..... However, as institutions returned to traditional in-person learning, many students struggled to readjust.... The rigid schedules, increased commuting, and face-to-face engagement required in post-pandemic settings have proven overwhelming for students who had grown accustomed to the convenience of virtual education.....”.

PC_7 highlighted on economic challenges in this matter:

“.....The pandemic left a lasting economic impact on many families, with job losses, reduced incomes, and rising living costs making higher education less accessible..... For many students, balancing tuition fees, daily expenses, and the rising cost of living has been daunting, leading them to pause their education (stopout) or drop out entirely..... In some cases, students transferred to more affordable institutions or pursued part-time studies to manage their financial burdens.....”

According to PC_4, shift in perspectives and priorities also contributes to retention loss in recent times

“.....The pandemic was a period of introspection for many students, prompting them to reassess their academic and career goals..... Some chose to explore alternative career paths, such as vocational training or self-employment, while others prioritized financial stability and entered the workforce..... This shift in mindset has resulted in a noticeable increase in stopouts and dropouts as students opt for what they perceive as more immediate or practical opportunities outside traditional academic pathways....”.

- Impact of stop-outs and academic transfers in retention

According to PC_5:

“.....It is important to recognize that not every student who temporarily disengages or changes institutions is necessarily dropping out..... While stop-outs and transfers may not be an exact dropout, they still present a challenge to retention efforts..... These students often experience delays in their academic journey, which may impact their long-term success due to interruptions in their academic momentum.....”

PC_10 pointed out the broader implications of these trends:

“.....Dropouts are permanently leaving, contributes to lowering retention rates and institutional success. While stop-outs are often temporarily pausing, can still cause enrollment fluctuations and resource planning issues..... Academic transfers impact to retention and institutional competitiveness.....”

- Relationship between academic grade and persistence

PC_8 summed up the correlation between grades and retention factor, noting that:

“...Academic performance is often one of the most significant indicators of a student’s engagement and success in university..... Low grades, especially over a sustained period, can have a profound impact on a student’s confidence, motivation, and overall academic trajectory which often urges the need for a fresh start or switch to different curriculum..... This increases the likelihood of them either leaving the institution, transferring to another or at worst case; to dropout...”

4.3 Student Retention Model

Based on reviewing literatures on several student retention models, challenges of student retention, Gen Z characteristic and learning pattern, quantitative analysis and focus group study, this study presents the following student retention model

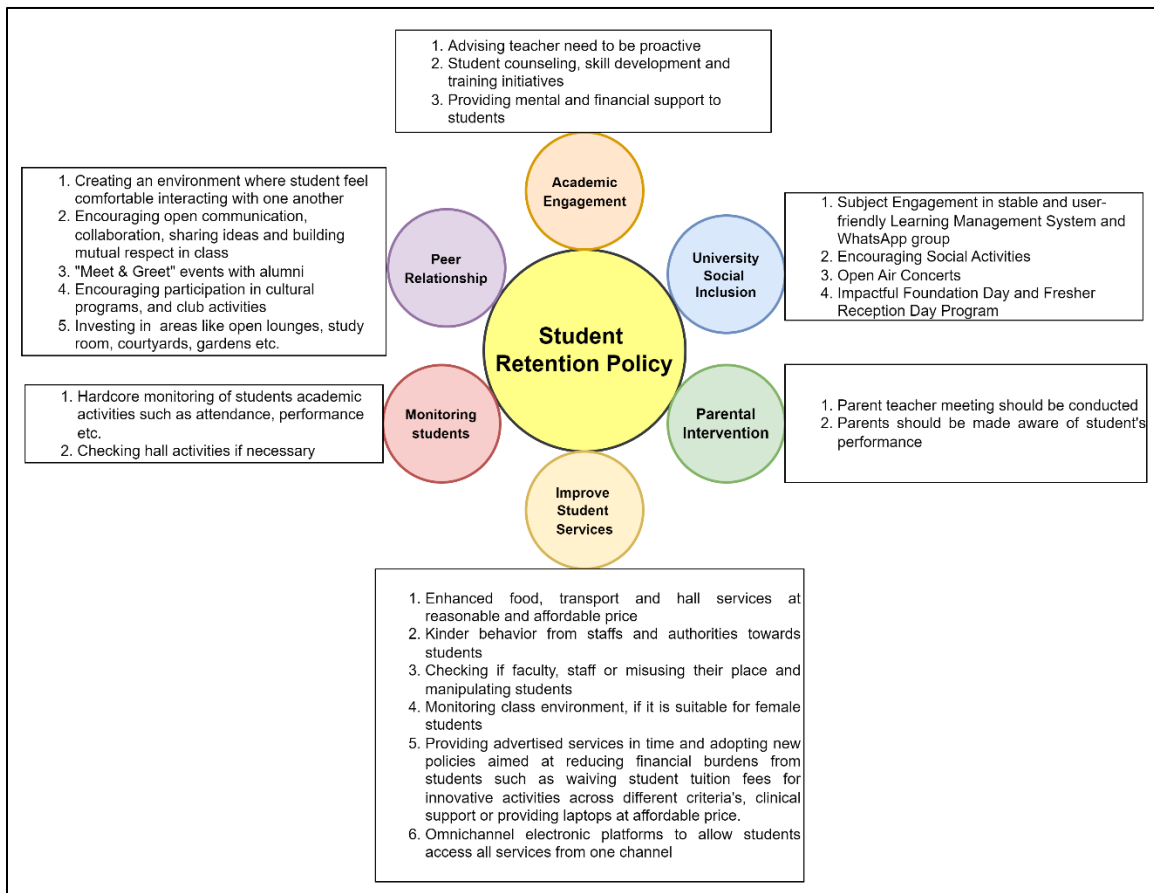


Figure 4.5: Proposed Student Retention Model

Advisors should actively engage with students by monitoring attendance, addressing frequent absences, and maintaining regular communication. This proactive approach fosters a supportive academic environment and ensures struggling students receive timely guidance, helping them stay on track with their academic goals. Universities should offer comprehensive counseling services to address students' mental health and career planning concerns. Skill development programs and workshops on time management, communication, and career preparation can equip students with essential life skills, enhancing their academic and professional readiness. Providing accessible mental health resources and tailored financial aid, such as flexible payment plans or emergency funds, can alleviate stress and prevent dropouts. Addressing individual financial needs ensures

students from diverse backgrounds can sustain their education, contributing to higher retention rates.

Improving the e-learning platform to be more streamlined and user-friendly is crucial for effective academic engagement. Additionally, WhatsApp groups offer an informal yet efficient communication channel for real-time updates, clarifications, and reminders, fostering better student-teacher interaction. Supporting students in organizing and participating in social initiatives strengthens their sense of belonging and motivation. Recognizing and encouraging their proactive involvement in community service and social causes can enhance engagement and retention. Well-organized programs such as Foundation Day and Fresher Reception foster a welcoming and celebratory atmosphere. These events help students feel connected to the university, improving their satisfaction and likelihood of continuing their education. Hosting open-air concerts provides students with opportunities to relieve academic stress, connect socially, and foster a vibrant campus environment. These events are highly appreciated and significantly contribute to improving the overall university experience.

Regularly tracking student attendance, academic performance, and assignment submissions, particularly in the first two years, can have positive impact on grades and help identify students struggling to adapt. Early intervention ensures they receive guidance to stay on track. Monitoring hall activities, including residential engagement and participation in campus life, provides additional insights into student well-being. Structured but supportive oversight ensures they adapt to university life without feeling overly restricted.

Ensuring the availability of affordable, nutritious, and high-quality meals in canteens and halls is crucial. Regular quality monitoring and price adjustments can address current inconsistencies. Transport services must align with class schedules, with additional buses during peak hours to reduce overcrowding. Hall environments should prioritize both security and flexibility, offering safe yet comfortable living conditions for students. Staff and university authorities should maintain professional and empathetic conduct towards

students. A supportive approach fosters a positive atmosphere, enabling students to focus on academic and personal growth without undue stress or fear. Robust mechanisms should be implemented to monitor and address any misuse of authority by staff or faculty. Transparency and accountability can prevent manipulation or exploitation, ensuring a fair environment for all students. Special attention must be given to creating a safe, inclusive, and respectful classroom and campus environment. Female students, in particular, should feel secure and valued in all university spaces. Proactive measures can ensure these spaces are conducive to learning and personal development. Providing advertised services promptly and adopting financial relief measures can significantly benefit students. Examples include bulk procurement of laptops to lower costs, clinical support within halls, and innovative tuition fee waivers for students excelling in specific areas. These initiatives help reduce financial stress while promoting academic and extracurricular excellence. An integrated electronic platform can centralize access to all university services, including class schedules, meal plans, health services, and hall updates. Such platforms improve efficiency, transparency, and convenience for students and their families, reducing reliance on multiple systems and manual interventions.

Establishing informal spaces like lounges, study rooms, courtyards, and gardens can encourage free interaction. These areas allow students to collaborate, share ideas, and build friendships beyond the classroom. Promoting open communication in classrooms and beyond is crucial for creating mutual respect and collaboration among students. Activities such as group discussions, collaborative projects, and peer-led sessions allow students to share ideas and seek support. This helps shy or introverted students engage better while strengthening peer relationships, ultimately leading to an enriched learning experience. Events like "Meet & Greet" sessions with alumni offer students the opportunity to learn from the experiences of former students. These events can inspire students by showcasing career paths, providing mentorship, and encouraging networking. Such interactions promote cross-generational connections and encourage students to form support networks. Encouraging students to actively participate in cultural programs, club activities, and academic events can build teamwork and social skills while allowing them to explore their

interests. These activities serve as platforms to develop leadership qualities, foster collaboration, and create a sense of community.

4.4 Discussion

Student retention, a critical aspect of higher education, has been addressed by various models and frameworks, with a focus on factors ranging from academic engagement to socio-economic influences. This study adds value by applying a mixed-method approach to primary data collected from universities in Bangladesh and focus group study with students, alumnis, guardians, teachers, administrators, coordinators and supporting staffs as participants, offering insights into the deeper context of student retention in higher education.

The findings of this study are supported by earlier studies, such as Tinto's (1975) theory of student integration, which emphasizes the importance of academic and social integration in predicting student persistence [92]. Similar to Lang (2001), who identified the role of academic engagement, this study highlights the need for regular academic monitoring and proactive support from faculty to ensure students remain connected to their educational goals [93]. Furthermore, the financial challenges identified in this study resonate with those discussed by Schwieger and Ladwig [94], who noted that financial difficulties can significantly affect student retention if not addressed by institutional support mechanisms. Additionally, Miller and Mills (2019) identified that faculty caring are critical to supporting at-risk students, which aligns with the findings of this study [95]. The role of mental health in student retention has also been emphasized by recent research, including the work of Herodotou et al. (2020), who found that mental health support services significantly impact student persistence, particularly during times of academic stress [104]. Snijders et al. highlighted the role of social inclusion, faculty-student relationship in promoting student retention, with a particular emphasis on the value of peer relationships and social engagement in helping students feel connected to the institution [99]. The need for personalized guidance and mentorship, particularly during the transition, has also been noted in several studies [23, 96].

Some key finding from this study that contributes to existing knowledge are highlighted in the following.

Students, teachers, and guardians emphasize the need for greater proactive support from the university to address academic, financial, and mental health challenges. Students suggest that advisors should reach out regularly to offer guidance, and course teachers should monitor attendance and follow up with those struggling to attend classes. Financial difficulties are a common concern, with students advocating for more flexible support during times when maintaining a required CGPA becomes difficult. Teachers highlight the impact of mental health issues on student retention, urging the university to offer more resources to help manage stress. Guardians share concerns about tuition affordability and suggest special waivers to prevent dropouts in case of financial changes. Faculty members observed that mental health struggles frequently lead to disengagement and dropout, and believe that increased mental health resources would better support student well-being. Administrators emphasized the need for streamlined processes in requesting academic and financial aid, noting that complex systems deter students from seeking help. According to support staff, engagement is not solely about academics but also about accommodating students' responsibilities outside university. Coordinators emphasized that while the university provides various engagement opportunities through clubs, workshops, and events, students must be proactive in taking advantage of these resources. They suggested that a more active approach from students in seeking out these opportunities could enhance their academic and social engagement. This perspective aligns with the broader sentiment that engagement is a shared responsibility, requiring both institutional support and student initiative.

Students find social activities vital for feeling connected to the university, helping them engage with peers and recharge from academic stress. They desire more events like open-air concerts. Teachers notes the difficulty of maintaining communication with students due to time constraints and urges university authorities to address this challenge. Both students and faculty members recognize that such interactions help reduce academic stress, foster a

sense of belonging, and provide opportunities for real-time communication. However, there are challenges, particularly in maintaining consistent, effective communication and ensuring the reliability of digital platforms. Students express a desire for more open-air events, while alumni and coordinators note the popularity of these activities, suggesting their potential to enhance engagement. Faculty members also acknowledge the positive impact of informal platforms like WhatsApp for quick, accessible interactions. There is a shared understanding that enhancing social engagement not only supports academic success but also strengthens the university community.

Students expressed a desire for informal settings beyond classrooms, where they could openly share ideas and connect on both academic and social levels, seeing these spaces as crucial for forming bonds that ease university challenges. Guardians supported this need, recognizing that such spaces would help their children build friendships and support networks, which are vital for personal and academic growth. Teachers observed that students who lack strong peer connections often feel isolated, impacting their participation, motivation, and overall learning experience. Alumni reflected on their own experiences, crediting their friendships with helping them persist through difficult times. Administrators acknowledged that encouraging peer connections aligns with the university's commitment to creating a supportive community, while coordination officers suggested investing in lounges, study rooms, and open-air venues like courtyards and gardens. They also proposed initiatives such as "Meet & Greet" events with alumni, cultural programs, and club activities, which could facilitate interaction, foster belonging, and ultimately contribute to improved student retention.

Students voiced concerns about the high cost and low quality of food in campus canteens, overcrowded buses, and inflexible hall policies, calling for more affordable meal options, increased bus services during peak hours, and more balanced in-out hall rules. Alumni shared similar views on the canteen, recalling similar issues during their time on campus. Guardians expressed the need for secure environments in classrooms and halls, especially for female students, along with better. Staff members acknowledge that some individuals

misuse their authority to manipulate students and call for action from the university. Meanwhile, authorities note their commitment to providing advertised services on time, while also highlighting that some students miss out due to irresponsibility.

A comprehensive monitoring process during the first and second years is necessary. Both focus groups highlighted the need for structured, supportive monitoring during students' early university years to address transitional challenges. From the student perspective, the shift to university was described as overwhelming, with new academic expectations and a need for improved time-management skills and support systems. Guardians and teachers echoed the concern about the drastic transition from high school to university, noting that without early intervention, students might struggle to adapt, leading to disengagement or even dropout. Alumni reflected on their own experiences, pointing out that their initial years at university were particularly challenging due to insufficient guidance and now feels that there should have been a more structured approach to academic and social engagement which would have benefited them significantly. Discussion highlighted that, by incorporating structured monitoring that respects student independence, streamlining access to resources, and fostering social and academic integration, universities can address both academic and personal challenges that contribute to student retention issues.

Parents emphasize the importance of regular parent-teacher meetings to stay informed about their children's performance and to engage more in their education. Parental intervention was widely recognized as a valuable component in supporting student success, especially during the early years of university. Parents advocated for regular parent-teacher meetings, seeing them as a way to stay informed and involved, which could help them detect and address any difficulties their children may face, especially for introverted students. Teachers and support staff echoed the potential benefits of these meetings, noting that keeping parents updated on students' academic progress, attendance, and challenges could foster a stable support system between home and university. Additionally, support staff suggested creating a dedicated portal for parents to access real-time updates on their child's performance, reducing reliance on formal meetings. Administrators, however,

expressed a need to balance parental involvement with students' growing independence, proposing a gradual decrease in parental engagement as students' progress and adapt to university life.

Insights from quantitative analysis including the increase in retention losses in recent times, impacts of stop-outs and transfers alongside dropouts in retention, and relationship between grades and retention-loss were also explored in the focus group study. The decline in retention rates in recent years can be attributed to several interconnected factors. The shift back to traditional in-person learning post-pandemic has been challenging for many students accustomed to the flexibility of virtual settings, with rigid schedules and commuting proving overwhelming. Economic hardships, including job losses, reduced incomes, and rising living costs, have further strained students, leading to increased stopouts, dropouts, and academic transfers as they seek more affordable options or prioritize financial stability through employment. Additionally, the pandemic prompted a shift in perspectives, with many students reevaluating their goals and opting for alternative career paths or immediate work opportunities. While stopouts and transfers may not represent permanent dropouts, they disrupt academic momentum, complicate resource planning, and impact institutional performance. Furthermore, low academic grades often diminish confidence and motivation, increasing the likelihood of dropouts or transfers as students seek fresh starts, making academic success a critical factor in retention efforts.

CHAPTER 5

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

This chapter examines the broader implications of the research on society, the environment, and sustainability, highlighting the ethical considerations, social outcomes, and environmental impacts. The section also discusses the role of sustainability in the implementation of the findings and proposes strategies for achieving long-term positive effects on both society and the environment.

5.1 Impact on Society

The research on student retention in higher education, specifically targeting Gen Z students in Bangladesh, has significant social implications. By addressing the unique needs of this generation, the findings of this study can help improve educational systems, making them more inclusive, adaptive, and supportive of diverse learning styles.

One of the main societal benefits of this research is the potential to reduce dropout rates among Gen Z students, thereby increasing graduation rates and fostering a more educated workforce. Higher education plays a crucial role in social mobility, and enhancing retention rates ensures that students from diverse socio-economic backgrounds have the opportunity to succeed. By creating an environment that is more conducive to Gen Z's learning preferences and needs, the research can facilitate greater access to higher education, which in turn can lead to better job prospects and enhanced economic stability for graduates.

Additionally, by promoting institutional responsibility in student retention, the research supports a shift from a purely individualistic approach to a more community-based model of education. This model encourages collaboration between institutions, faculty, and students, helping to create a supportive learning environment that values student well-being alongside academic success.

5.2 Impact on Environment

While the direct environmental impact of this research may seem minimal, the study does indirectly support environmental sustainability by promoting practices that reduce the need for physical resources. The increasing reliance on digital platforms and virtual learning environments in higher education is one of the key outcomes of adapting to the preferences of Gen Z students, who are more comfortable with technology. This shift toward digital resources can lead to a reduction in the use of paper and other physical materials traditionally required for teaching and learning.

Since Gen Z are often value driven and prefers being a contributing part to positive social and environmental causes, universities can use insights from this research to design more sustainable campus operations, such as reducing energy consumption by optimizing classroom use and encouraging online learning where feasible. By implementing energy-efficient technologies and promoting sustainable practices, educational institutions can contribute to a reduction in their environmental footprint. Investing in gardens, natural landscapes, and lakes can serve as gathering and collaboration spaces for students while also fostering a positive environmental impact.

5.3 Ethical Aspects

Ethical considerations are paramount when conducting research involving human participants. This study acknowledges the importance of protecting participants' rights, ensuring that their participation in the research was voluntary, informed, and respectful of their privacy. In particular, the research involving focus groups and quantitative surveys took measures to secure the confidentiality of institutions and respondents and used data anonymization techniques to protect their identities.

The ethical implications of the research extend beyond the collection of data to the potential impact on students' lives. By exploring the factors that influence student retention, the study aims to advocate for policies and practices that are student-centered, ensuring that

Gen Z students are not only academically supported but also treated with fairness and respect in all aspects of their educational journey. The research also promotes inclusivity by considering the needs of students from diverse backgrounds, ensuring that retention strategies do not inadvertently disadvantage any group.

5.4 Sustainability Plan

The long-term sustainability of the research findings depends on the effective implementation of the proposed strategies and their integration into the educational system. To ensure that the impact is lasting, several key strategies should be adopted by universities and policymakers:

Integration of Technology: Continuing to adapt to technological advancements is essential for maintaining engagement with Gen Z students. Institutions should invest in digital infrastructure, e-learning platforms, and online resources that support both in-person and remote learning. This digital shift can also lead to more sustainable practices, as it reduces reliance on physical space and resources.

Continuous Monitoring and Evaluation: Universities should implement ongoing assessment mechanisms to track the effectiveness of retention programs. By regularly evaluating the success of retention strategies, institutions can adapt and improve based on the evolving needs of the student body.

Collaboration with Industry: Involving industry partners in the development of retention programs can help bridge the gap between academic education and real-world application. Partnerships with businesses can also ensure that students are equipped with skills that meet the demands of the job market, making retention efforts more relevant and sustainable.

Cultural Shift: To promote long-term sustainability, there must be a cultural shift within universities towards a more holistic approach to student success. This includes fostering an

environment where mental health, social inclusion, and personal development are seen as integral components of academic success.

Policy Advocacy: Finally, the research highlights the need for policy advocacy at the national and institutional levels to create an enabling environment for the successful implementation of retention strategies. By advocating for policies that prioritize student well-being and institutional support, the research aims to influence broader educational reform that can have a lasting impact on the sustainability of higher education systems.

Regular parent-teacher meetings can foster collaboration by keeping parents informed about their child's academic progress, challenges, and overall well-being. Providing parents with updates on their child's performance, attendance, and feedback through meetings or a dedicated portal ensures early identification of issues and active parental support.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Summary of the Study

This study aimed to explore student retention in higher education, focusing specifically on the context of Gen Z students in Bangladesh. Using a mixed-method approach, primary data was collected through surveys, interviews, and focus group discussions from students, teachers, guardians, alumni, administrators, and support staff at a prominent university. The research examined various factors influencing student retention, including academic engagement, social inclusion, peer relationships, student services, monitoring systems, and parental involvement.

The findings revealed several key insights into the challenges faced by students and the support systems required to improve retention rates. It was found that students often encounter financial, academic, and mental health difficulties, which can lead to disengagement and ultimately dropout. The study emphasized the need for proactive academic support, such as regular monitoring of student progress, as well as the importance of fostering a sense of community through social inclusion and peer relationships. Furthermore, students highlighted the importance of improved university services, including affordable and quality food, transport, and campus facilities. Additionally, the role of parental involvement, particularly in the early years of university, was identified as a critical factor in supporting students' academic success.

6.2 Conclusions

This study contributes to the understanding of student retention, specifically in the context of Gen Z students in Bangladesh, by examining the various academic, social, and institutional factors that influence retention rates. The findings underscore the importance of a holistic approach to student support, highlighting the need for both academic and social integration. Key factors such as academic engagement, financial support, mental health resources, and social inclusion emerged as central to improving retention. Additionally, the study identified the importance of parental involvement, particularly during the transition

to university life, and the role of peer relationships in fostering a supportive and engaging learning environment.

The research also reveals significant gaps in current institutional practices, particularly in terms of streamlined processes for academic and financial aid, and the need for better communication between students, faculty, and administrators. By addressing these gaps, universities in Bangladesh can improve student satisfaction, engagement, and retention, thus enhancing overall academic success.

6.3 Implication for Further Study

While this study has provided insights into the factors influencing student retention in Bangladesh, it also opens several avenues for future research. Future studies could explore retention trends over a longer period, tracking the impact of institutional changes and interventions on student retention rates. This would help assess the long-term effectiveness of retention strategies and provide a clearer picture of how student experiences evolve over the course of their university education.

Given the focus on a few selective universities in this study, future research could compare retention factors across multiple institutions in Bangladesh. This would help identify institutional-specific challenges and best practices that can be shared across universities, fostering a more widespread improvement in student retention strategies.

The role of digital tools and platforms in enhancing academic engagement and social inclusion deserves further attention. Research could investigate how universities can leverage technology to improve communication, provide timely support, and create more inclusive and engaging learning environments for students.

Given the unique cultural context of Bangladesh, future research could examine how cultural attitudes and societal expectations influence student retention. This could include exploring the role of family expectations, societal pressures, and community support systems in shaping students' decisions to persist or drop out.

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