

An In-Depth Analysis of the Educational Supply Chain at Notre Dame College, Dhaka

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1. Abstract:

This study focuses on the educational supply chain of Notre Dame College (NDC), Dhaka, one of the most prominent universities in Bangladesh. The study looks into the extracurricular activities, teachers, facilities, and curriculum of NDC, all of which have a significant role in the school's stellar academic reputation. A survey was used to assess how students felt about the amenities in their classrooms and labs, the library, the quality of their instruction, practical education, and their overall experience as students. The results demonstrate how well-liked the college's facilities and teachers are, with special recognition going to the well-stocked labs and supportive instructors. The report also highlights how crucial student organizations are for fostering the acquisition of information and skills outside of the classroom. But there was still space for development in areas like extracurricular activity participation and library access.

2. Introduction:

Notre Dame College (NDC), Dhaka, is renowned in Bangladesh for its rigorous academic requirements and all-encompassing approach to student development. It is a symbol of scholarly distinction. The success of NDC may be attributed to a strong and well-maintained educational supply chain that guarantees every facet of the educational process—from faculty and curriculum to facilities and resources—is maximized for excellence. The present investigation scrutinizes the distinct constituents of this supply chain and assesses their impact on the overall prosperity and prestige of the establishment.

This study is important for a number of reasons. Firstly, it examines Notre Dame College's educational supply chain, which is a prominent university in Bangladesh. The analysis offers valuable insights that other educational institutions might use as a guide. It seeks to enhance educational quality and maximize resource management by detecting inefficiencies. By filling a study void on the educational supply chain, especially in the Bangladeshi setting, the findings can also help guide policy choices and advance academic writing. Findings of this study may help resolve the problems of delivering quality education where many institutions can not even provide the bare minimum and a lot of irregularities are seen especially in the govt institution.

3. Literature review:

Education supply chain

The concept of supply chain, which aims to provide companies with a competitive edge through resource coordination and activity optimisation, is the set of particular procedures or activities that convert raw materials into finished goods (outputs) that can be shipped to clients. (Waskita, 2007; Chopra and Meindl, 2001; Anantadjaya et al., 2007; Chow et al., 2008).

The education supply chain can be defined as a service supply chain that views students as its raw materials, graduates and research as its results, education as the service that the university provides, and the process that students must go through to graduate. (Owusu-Bio et al., 2015).

The education supply chain improved students' well-being by giving them access to pertinent research, instruction, and a supportive learning environment—all of which were essential for both their intellectual development and the global economy. (Owusu-Bio et al., 2015; Krishna and Subbiah, 2012).

The performance of an education supply chain is difficult to measure because it provides intangible services, is dominated by human capital, and is influenced by students' attitudes and preferences as well as the process they go through to choose the host nation, the university, and the degree. This is in contrast to the easy to investigate performance of physical supply chains. (Owusu-Bio et al., 2015; Beamon, 1999; Gunasekaran et al., 2001).

Like a physical supply chain, the education supply chain may consist of multiple tiers of providers and consumers, as well as a variety of services represented by various taught and research degrees with various specialisations. The multitier relationship was discussed, and it was made clear how crucial it is for information to be shared between stages in order to guarantee proper coordination and collaboration between tiers and to provide society with a satisfied result.

4. Method

In this section of our study outlines the full procedures used to determine the educational supply chain at Notre Dame College (NDC) , Dhaka. We divided this section into several subsections to discuss it in a convenient way.

4.1 Participants:

In this study, we involved 189 students from both current and former students of Notre Dame College, Dhaka so that it doesn't show any biased decision. As all the participants are from Notre Dame College, they have the experience in educational facilities, faculty, curriculum, club activities, and extracurricular activities at the institution. For all participants, we set criteria to have completed at least one year at NDC and we examine all the participants through unique roll number provided by NDC so that they meet our requirements. Our sample included a diverse group of students from different academic year starting from HSC batch 2025. This ensures a broad perspective on NDC's educational supply chain.

4.2

Sampling

Procedures

A purposive sampling method was applied here to select participants who may provide in-depth insights into the educational supply chain at NDC. We invited participants for the study via email and social media platforms that are commonly used by NDC students and we found 189 samples. We used Google Forms to collect data for the convenience of the participants. Data collection occupied 1 week, during which participants answer a structured questionnaire. Participants participated here without any payment or incentive, they joined us voluntarily and gave their valuable and unbiased responses.

4.3

Sample

Size

Power

and

Precision

The sample size is 189 and it is enough for collecting a range of student experiences while maintaining a manageable scope for analysis. The sample was too large to detect significant patterns and trends within the data. This data provides us a reliable basis for drawing conclusions. The final sample closely matched the demographic profile of the broader student population of NDC. It ensures the findings could be generalized to the entire college.

4.4 Measures and Covariates

We set 16 questions with the help of a Likert scale for data collection. Our primary outcome measures included student satisfaction with classroom and laboratory facilities, library resources, faculty and teaching quality, curriculum, and extracurricular activities. Next, our secondary measures included perceptions of equality and the overall academic experience at NDC. We developed our questionnaire specifically for this study to measure educational satisfaction and engagement.

4.5 Research Design

In the study we collect only quantitative (from the Likert Scale responses) data.

4.6 Data Analysis

We analyzed the data using descriptive statistics. This analysis gives us an overview of student satisfaction and perceptions across different aspects of the educational supply chain This method provides us with a great understanding of the strengths and weaknesses of the educational supply chain at NDC.

4.7 Ethical Considerations

Participation was entirely voluntary, and we took permission from all the participants at the beginning of the survey. We also assure them that, we do not share their info with others.

5. Results

The findings of our study are comes from a survey conducted among previous and current students of Notre Dame College (NDC), Dhaka. The results focused on various aspects of the educational supply chain, including classroom and laboratory facilities, library resources, faculty and teaching quality, curriculum, student clubs, uniform policy, and overall satisfaction. The collected data was analyzed to understand the effectiveness of the educational supply chain at NDC and its impact on student's academic experiences.

5.1 *Participants* *Recruitment*

The main participants in our study were students who had direct, personal experiences with academic life at NDC. We surveyed between August 12 and August 19, 2024. To reach enough students, we used social media to get their attention. In total, 189 students finished the survey. These students represented different academic years and departments, including Sciences, Humanities, and Business Studies, giving us a balanced group of responses.

5.2 *Statistics* *and* *Data* *Analysis*

We looked at the data using basic statistics. This allowed us to see how the answers spread out across different Likert scale questions. The results are shown in tables and graphs that reflect the students' views and various parts of the educational process at NDC.

Table 1: Full Summary of Survey Results

Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.1 Classroom facilities are well-equipped and enhance learning	26.5%	43.1%	16.7%	9.8%	3.9%
1.2 Laboratory equipment meets academic needs	47.1%	36.3%	10.8%	3.9%	2%
2.1 Library provides sufficient resources	22.3%	34%	28.2%	12.7%	4.9%
2.2 Easy access to library materials	13.7%	31.4%	32.4%	12.7%	9.8%

3.1 Teachers are knowledgeable and clear in their explanations	61.2%	25.2%	9.7%	1.9%	1.9%
3.2 Teaching methods are effective and engaging	54.9%	36.3%	2.9%	3.9%	2%
3.3 Teachers are approachable and supportive	70.6%	23.5%	3.9%	1%	1%
4.1 Curriculum prepares well for national exams	49%	38.2%	8.8%	2%	2%
4.2 Emphasis on practical-based education enhances understanding	38.8%	39.8%	14.6%	2.9%	3.9%
5.1 Student clubs provide valuable learning opportunities	40.8%	34%	15.5%	2.9%	6.8%
5.2 Extracurricular activities improve skills	33%	24.3%	33%	3.9%	5.8%
6.1 Uniform policy promotes equality	48.5%	35.9%	8.7%	2.9%	3.9%
6.2 All students are treated equally	57%	24.3%	2.9%	2.9%	2.9%
7.1 Satisfaction with Overall Academic Experience	51%	32.4%	7.8%	5.9%	2.9%

7.2 Would recommend NDC to others	60.2%	15.5%	6.8%	6.8%	10.7%
8.1 NDC environment conducive to growth	66%	28.2%	2.9%	1%	1.9%

Figure 1: Student Satisfaction with Classroom and Laboratory Facilities

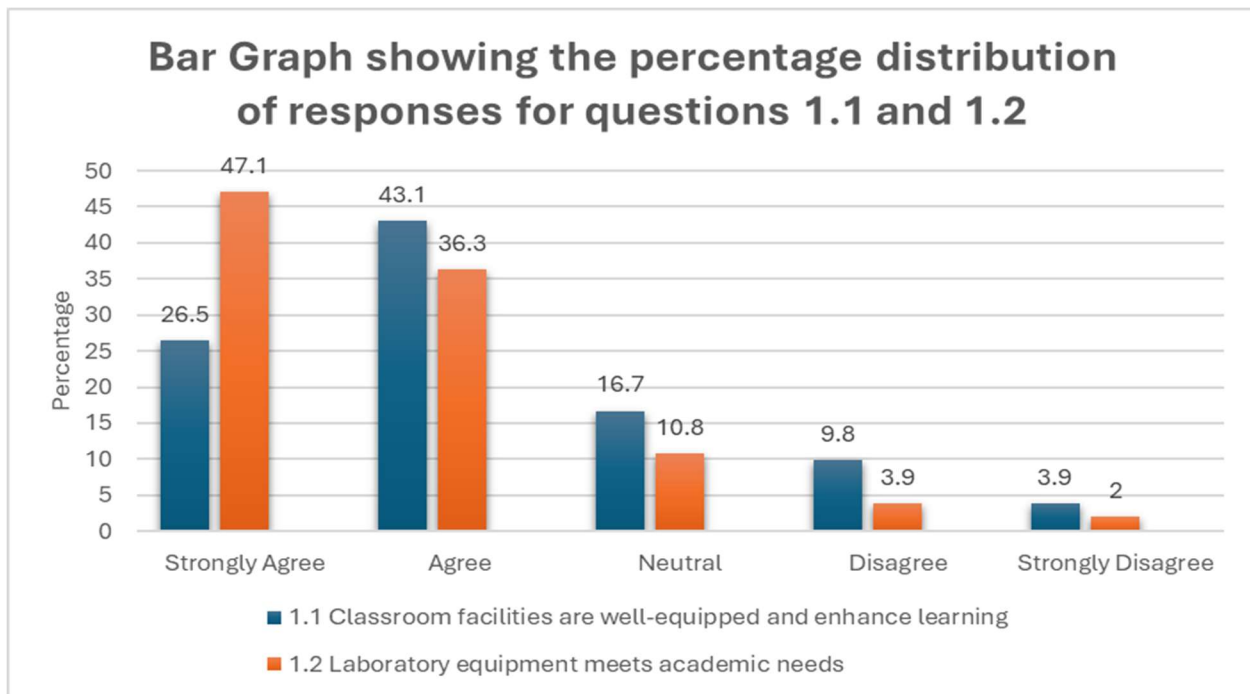


Figure 2: Perceptions of Library Resources and Accessibility

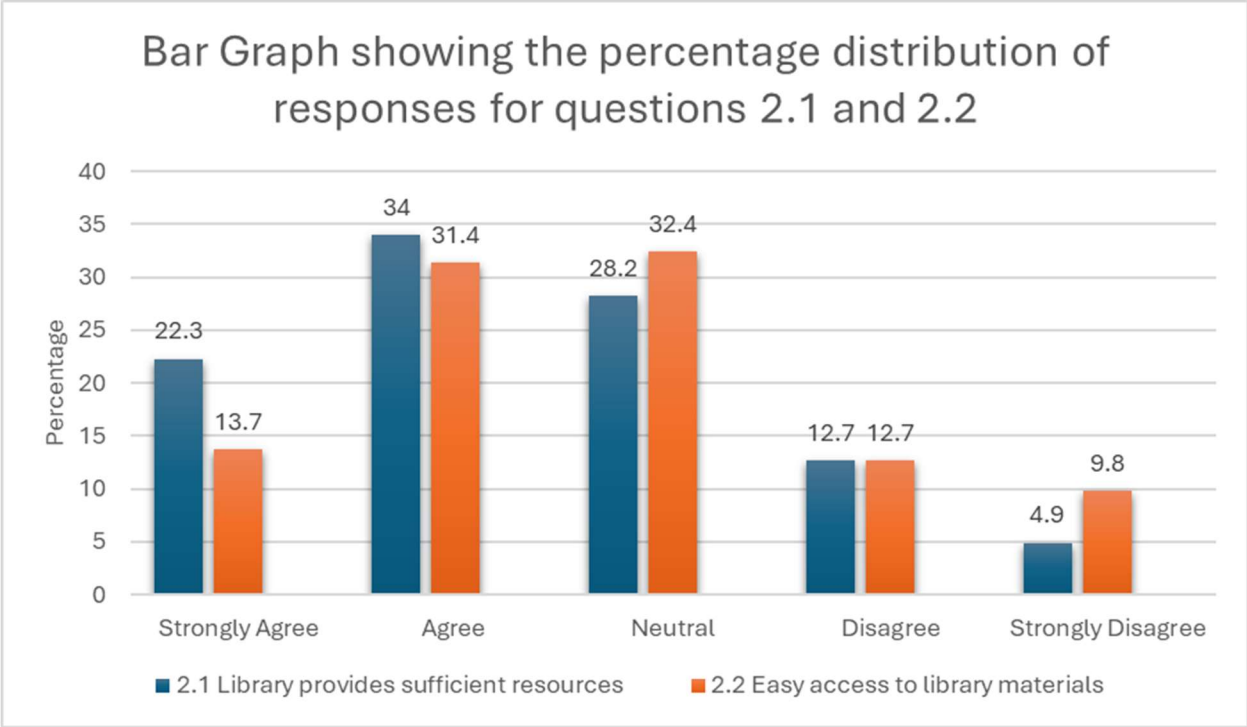


Figure 3: Faculty and Teaching Quality

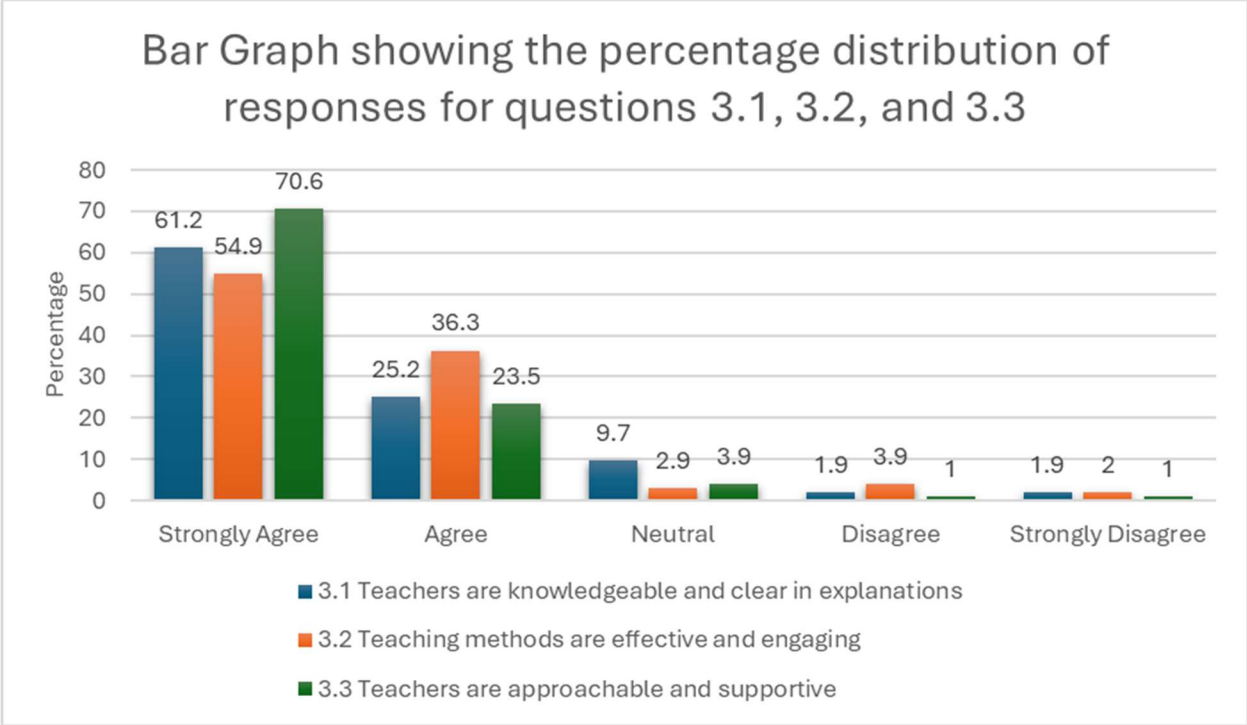


Figure 4: Curriculum and Practical-Based Education

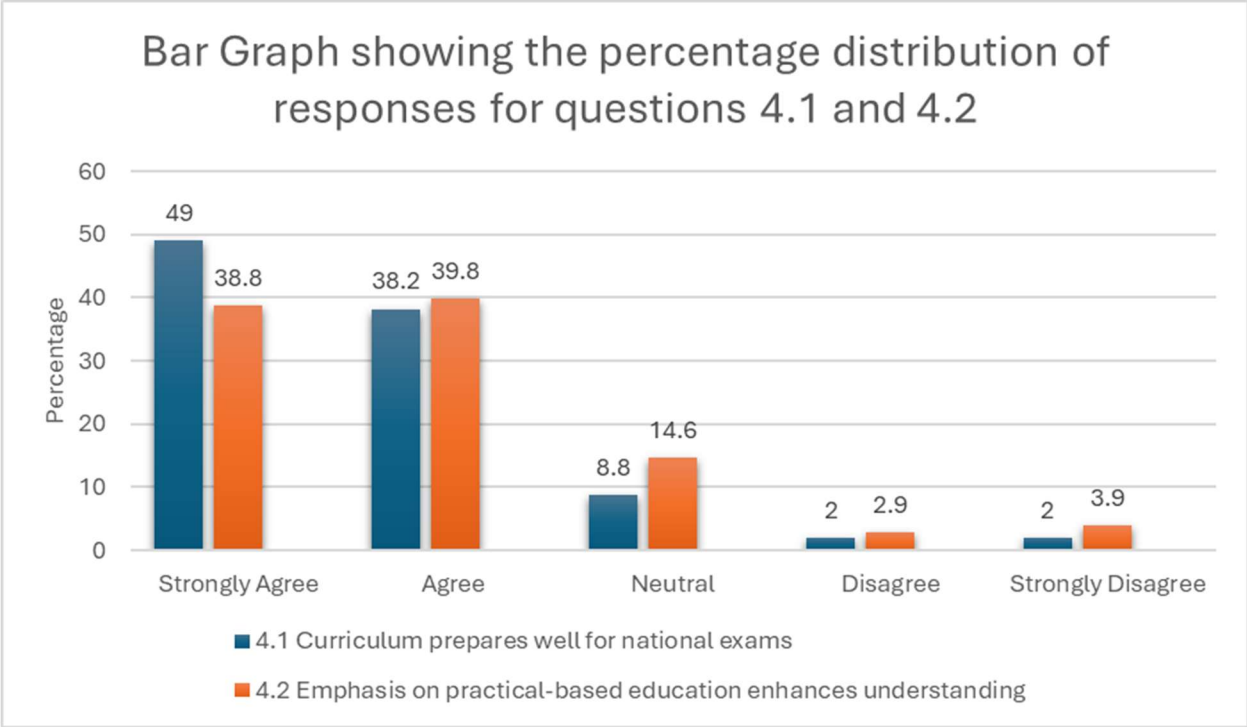


Figure 5: Participation in Student Clubs and Extracurricular Activities

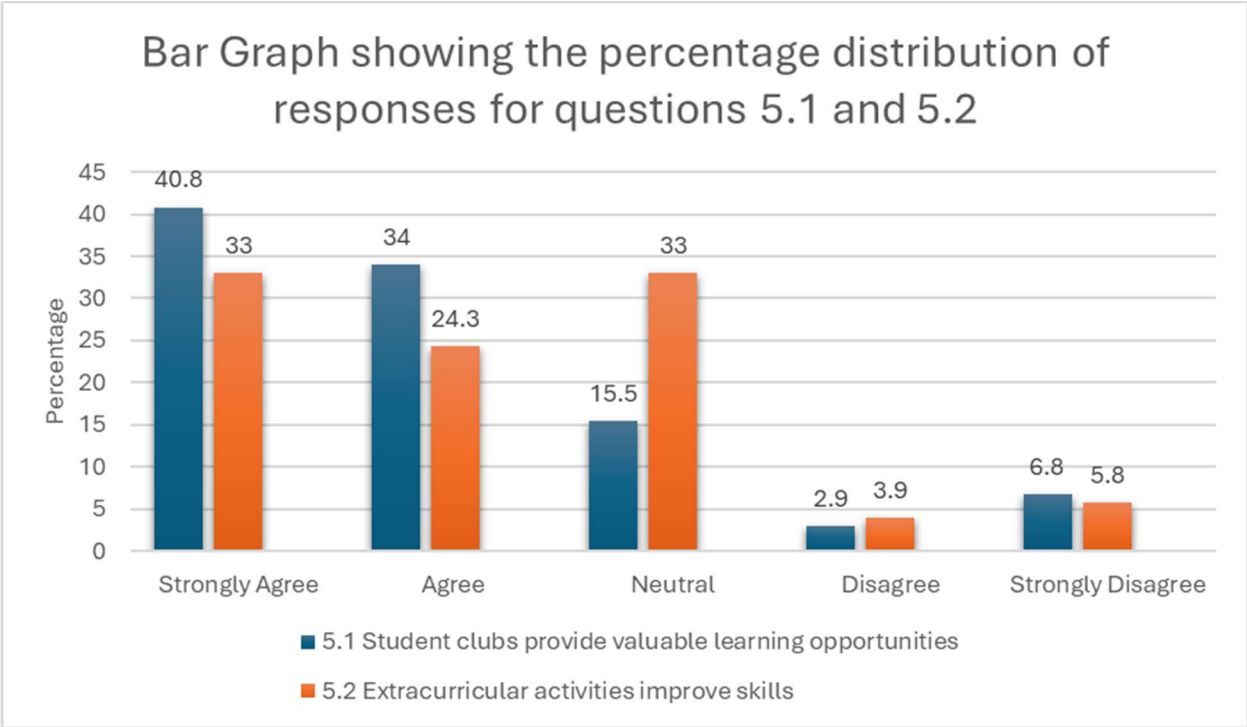


Figure 6: Perception of Equality and Uniform Policy

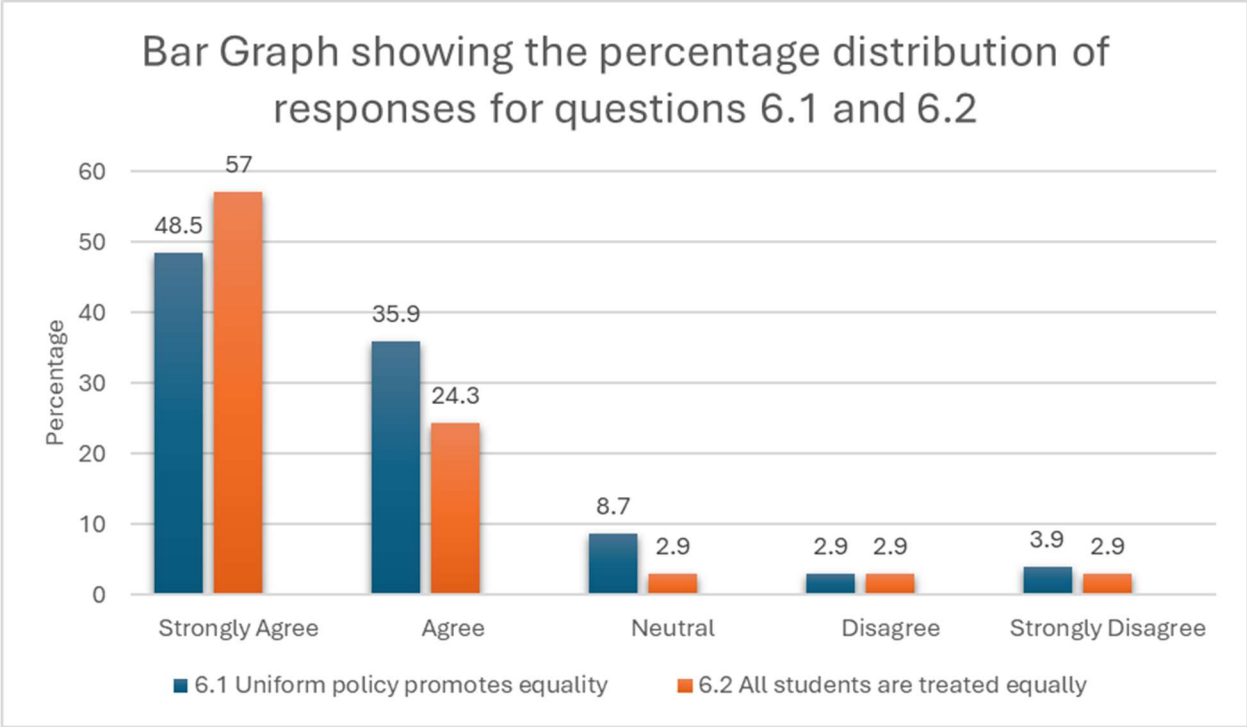


Figure 7: Overall Satisfaction and Recommendation

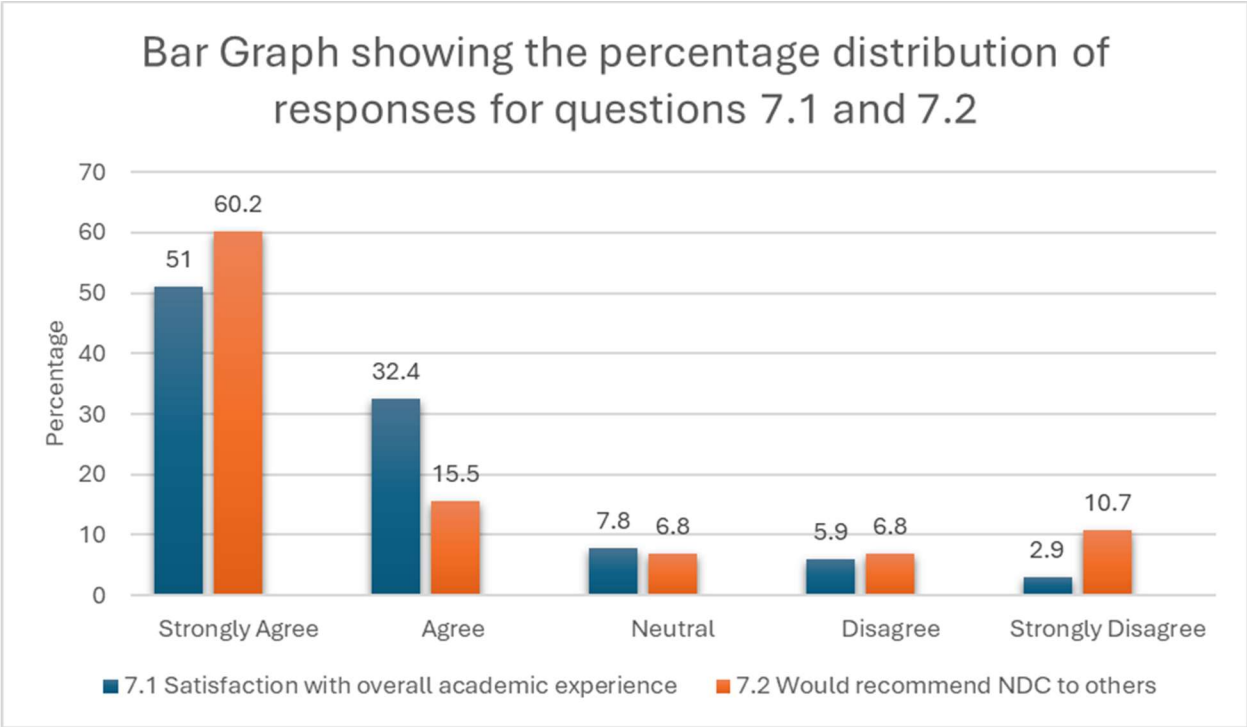
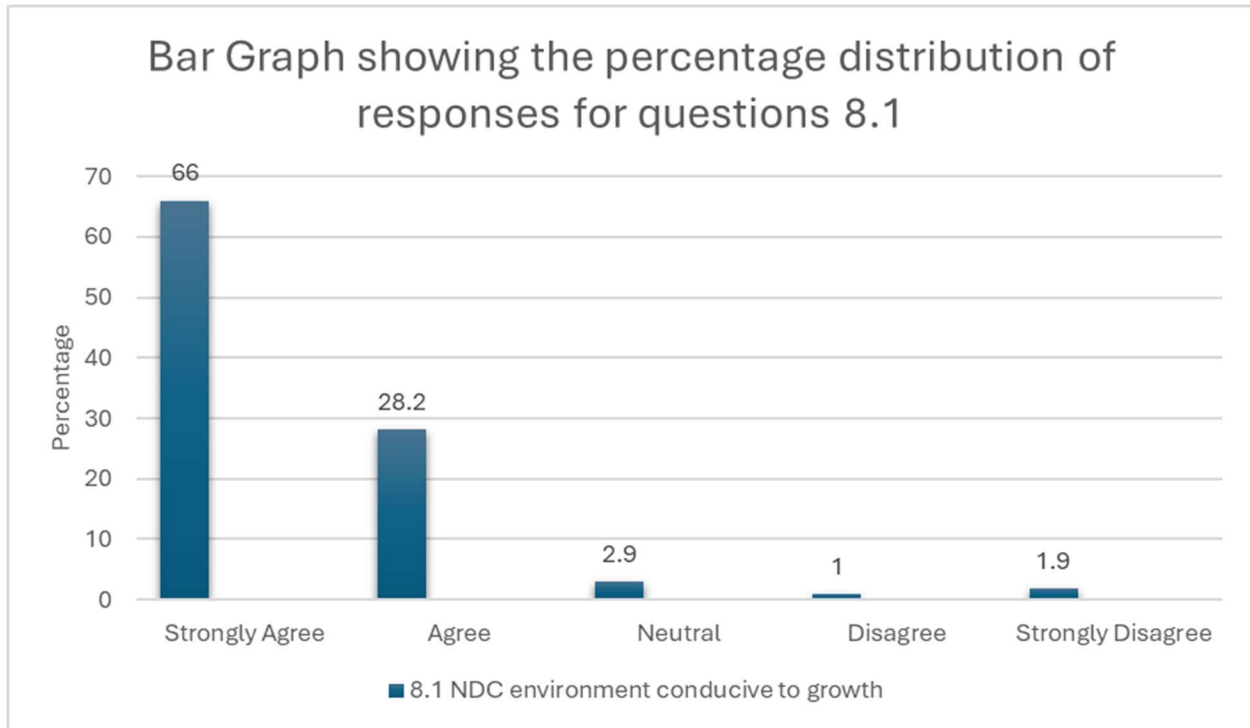


Figure 8: NDC environment conducive to growth



6. Discussion

Our findings from this study are strong evidence that supports the hypothesis that the educational

The supply chain at Notre Dame College, Dhaka, is a significant factor in its academic excellence. This analysis reveals a higher level of satisfaction among students of NDC across different components of the supply chain, including infrastructure, faculty quality, curriculum, and extracurricular activities. These results have important effect on understanding how educational institutions can optimize their supply chain to improve student outcomes.

6.1 Support for Primary Hypotheses

Our primary hypothesis was the strength of NDC's educational supply chain plays a vital role in its academic success. It is strongly supported by the data. The majority of students are satisfied with classroom facilities. They are delighted with the laboratory equipment. So, 47.1% strongly agree that laboratory equipment meets their academic needs.

But maybe library facility can't fulfill students' expectations and so NDC got the lowest satisfaction mark in overall responses. In the educational supply chain, teachers are the key player. For a good teacher, an institution can be famous. Here we noticed that 61.2% students think that NDC's teachers are knowledgeable, and students are highly engaged with their teaching methods. Most of the students (more than 70%) are very confident with the statement that NDC's teachers are very supportive. Here we also see that NDC's teacher are game changing factor to make the educational supply chain of NDC is unbeatable.

6.2 Practical Implications and Theoretical Consequences

Supply Chain Insider

Notre Dame College excels with the help of practical-based education through a variety of student clubs. 40.8% strongly agree and 34% agree that different student club (Notre Dame math club, Notre Dame science club, Notre Dame debating club, Notre Dame photography club, etc.) provides valuable learning opportunity to the students. There are 25 clubs in Notre Dame College (according to the official website). The majority of students think that different extracurricular activities arranged by Notre Dame College and its club improve their skills.

6.3 Addressing Secondary Hypotheses

The uniform policy is highly accepted by the students as it promotes equality. NDC never treats anyone because of race, height, wealth, background and most importantly religion. NDC provides uniforms centrally to all its students so that, every student can get the same uniform. NDC changes teachers 3 time in total college life in NDC for every student. For this reason, there is no chance for a student treated to be unequally. We also see the student satisfaction rate in this section is much higher

6.4 Recommend Other

Here we see the graph that the majority are highly satisfied with overall academic experiences in NDC. And 60.2% are highly committed to recommending this college to others. And if you move to NDC you will notice that many teachers are from NDC alumni, they came here for the love of this college. And you think NDC is the offline educational platform where talented students and teachers come. NDC just culture the platform, empower them, and keep the environment. It is the main credit for NDC.

6.5 Environment Provider

If you have the opportunity you may go to Basundhara Shopping Mall rather than buy clothes from a hawker. But why? Because Basundhara gives you a shopping environment. Just like this NDC provides an education-friendly environment to the students and teacher. Mainly this environment creates dreams for others to be a proud Notre Damian . We also noticed this from our survey. 66% of student believe that NDC's environment is helpful for their growth.

6.6 Limitations and Potential Biases

Though we have strong findings, our study has several limitations. First of all our sample size , which we take as representative, may not capture the full diversity of student experiences at NDC. As we rely on self-reported data, it introduces the possibility of response bias. And so, students may have provided socially acceptable answers rather than reflecting their true opinion.

Future studies could benefit from a longitudinal approach, tracking how improvements or changes in the supply chain affect student outcomes over several years.

6.7 Generalizability and External Validity

Our findings in this study are likely generalizable to other prestigious educational institutions in similar contexts, particularly those in developing countries. However, the unique characteristics of NDC, such as its highly qualified faculty, strong emphasis on practical-based education, and club culture may limit the applicability of these findings to institutions with different resources or educational models.

7. Acknowledgement

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8. Reference:

1. *Notre Dame College, Dhaka.* (n.d.). <https://ndc.edu.bd/club>
2. Anantadjaya, S., Walidin, A., Waskita, E. and Nawangwulan, I. (2007) 'Consumer behavior, supply chain management and customer satisfaction: an investigative study in small and medium enterprises', *International Seminar on Industrial Engineering and Management* [online] https://www.researchgate.net/publication/228233410_Consumer_Behavior_Supply_Chain_Management_and_Customer_Satisfaction_An_Investigative_Study_in_Small_and_Medium_Enterprises (accessed 4 March 2018).
3. Chow, W., Madu, N., Kuei, C-H., Lu, M., Lin, C. and Tseng, H. (2008) 'Supply chain management in the US and Taiwan: an empirical study', *Omega*, Vol. 36, No. 666, pp.665–679. Cooper, D. and Schindler, P. (2014) *Business Research Methods*, 12th ed., McGraw-Hill/Irwin, New York.
4. Chopra, S. and Meindl, P. (2004) *Supply Chain Management: Strategy, Planning and Operation*, Prentice Hall, Upper Saddle River, USA.
5. Waskita, E. (2007) *Customer Satisfaction and Business Improvement: A Case Study of Smiley's Café*, Undergraduate thesis, Faculty of Business Administration, Swiss German University, Banten, Indonesia.
6. Owusu-Bio, M., Frimpong Manso, J. and Adiwokor, E. (2015) 'Mapping the internal supply chain for educational institutions: a case study of Kwame Nkrumah University of Science and Technology', *European Journal of Business and Management*, Vol. 7, No. 32 [online] <http://www.iiste.org/Journals/index.php/EJBM/article/download/27019/27702> (accessed 19 August 2018).
7. Krishna, M. and Subbiah, V. (2012) 'The research framework on role of information in educational supply chain', *World Applied Sciences Journal*, Vol. 17, No. 5, pp.617–621. Kvale, S. (1996) *Interviews: An Introduction to Qualitative Research Interviewing*, pp.133–135, Sage, Thousand Oaks.
8. Gunasekaran, A., Patel, C. and Tirtiroglu, E. (2001) 'Performance measures and metrics in a supply chain environment', *International Journal of Operations and Production Management*, Vol. 21, Nos. 1/2, pp.71–87.
9. Beamon, M. (1999) 'Measuring supply chain performance', *International Journal of Operations and Production Management*, Vol. 19, No. 3, pp.275–292.