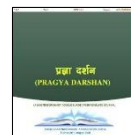




## MATHEMATICAL STUDENTS' SATISFACTION WITH SEMESTER AND ANNUAL SERVICE QUALITY



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### Abstract

*This study examines how satisfied Master's level students studying mathematics education are with the quality of services offered by Tribhuvan University in Nepal. It looks at a number of service quality dimensions, such as academic and non-academic aspects, course design, delivery and assessment, group size, program issues, reputation, and access. The study uses a survey-based approach to investigate the relationship between these service quality variables and students' overall satisfaction, as well as differences in satisfaction levels based on gender, age groups, academic systems (semester vs. annual), and academic systems. A total of 60 students participated in the study, evenly split between the semester and annual system. A 5-point Likert scale questionnaire was used to gather responses, and regression analysis, z-test, frequency, percentage, mean, and standard deviation were used for analysis. The results show a strong correlation between factors affecting service quality and students' general satisfaction. Students in the semester system and those in the annual system, however, do not significantly differ in their levels of satisfaction, according to the data. The findings show that both groups believe Tribhuvan University's services are of comparable quality.*

**Keywords:** Mathematics Education, Service Quality, Semester System, Annual System, Student Satisfaction, Tribhuvan University

### Introduction

Globally, educational systems have changed to accommodate students' diverse and ever-changing requirements. Both yearly and semester systems have been incorporated into the academic programs of Tribhuvan University (TU), the biggest and most established university in Nepal. Since mathematics is a fundamental subject in higher education, it requires an instructional framework that guarantees both conceptual clarity and the growth of students' skills. Maintaining the institution's relevance and efficacy in an increasingly competitive academic environment requires an understanding of how many systems affect students' happiness (Seymour, 1993; Schreiber, 2009).

With its emphasis on ongoing evaluation and reduced course loads, the semester system is becoming more and more popular throughout the world. According to Firdaus (2005), this system is thought to improve student involvement and offer prompt feedback. Nonetheless, Nepal still uses the conventional annual system, which provides a single thorough assessment at the conclusion of the school year. Every system has advantages and disadvantages that have different effects on student satisfaction.

According to Huang (2009), student satisfaction is not just a gauge of academic achievement; it also shows how well the school meets the needs of its students in non-academic areas such administrative assistance and resource availability. Students' educational experiences are significantly shaped by service quality factors, such as program design, institutional reputation, and non-academic features (Afjal et al., 2009). Understanding the efficacy of these characteristics can be gained by examining them in relation to TU's semester and annual systems.

The expectations of students for higher education have changed due to the rapid improvements in pedagogy and technology. Many universities now prioritize integrating innovative teaching approaches with ICT technologies (Schreiber, 2009). The difficulty for Tribhuvan University is to meet these standards for service quality while resolving the shortcomings of its current infrastructure.

By analyzing student happiness in the context of Nepal's dual academic systems, this study adds to the body of knowledge on higher education. It analyzes the efficacy of the semester and annual systems, identifies the major determinants of satisfaction, and offers practical suggestions for raising the standard of education.

### Statement of the Problem:

Tribhuvan University implemented the semester system in an effort to update its academic structure and fill in the holes in the previous yearly system. However, discussions over its effects on learning results and general satisfaction have been triggered by its introduction among both professors and students. The annual system's complete approach is preferred for its planned and in-depth syllabus coverage, whereas the semester system stresses ongoing involvement and timely evaluations (Firdaus, 2005; Chongbang, 2014).

At TU, not much study has been done to compare student happiness across these systems, despite these variations. Higher education satisfaction has been found to be significantly influenced by elements including course design, administrative support, and resource accessibility (Huang, 2009; Afjal et al., 2009). The institution is unable to adequately address these problems in the Nepalese setting due to a lack of empirical evidence.

By analyzing the satisfaction levels of students studying mathematics education under the semester and annual systems, this study aims to close this gap. Among the important queries are:

1. What effects do aspects of service quality have on student satisfaction?
2. Do the semester and annual systems differ significantly in terms of user satisfaction?

The study seeks to provide a thorough insight by answering these questions.

## Objectives of the Study

- i. To identify factors contributing to student satisfaction in Mathematics Education at Tribhuvan University.
- ii. To compare the satisfaction levels of students enrolled in semester and annual systems.

## Method and Materials:

The study is carried out through following research methods and materials.

### Research Design

This study employed a descriptive research design to explore the relationship between service quality dimensions and student satisfaction. A quantitative survey method was used to collect data, ensuring measurable and comparable insights.

### Population and Sample of the Study

The study targeted Master's students in Mathematics Education at Tribhuvan University. A sample of 60 students, 30 from the semester system and 30 from the annual system was selected using stratified random sampling. The sample included students from University Campus, Kirtipur, and Mahendra Ratna Campus, Tahachal.

### Data Collection Procedures

A 30-item questionnaire was developed based on a 5-point Likert scale, covering seven service quality dimensions: non-academic aspects, academic aspects, program issues, reputation, access, design, delivery, and assessment, and group size (Firdaus, 2005). The questionnaire measured responses ranging from "strongly disagree" to "strongly agree." Ten students participated in a pilot study to examine the validity and reliability of the questionnaire. To improve the instrument's trustworthiness, unclear questions were rewritten and expert input was added.

### Analysis of Data

SPSS software was used to examine the data. The results were summed together using descriptive statistics including mean, standard deviation, and frequency. While a z-test contrasted satisfaction levels between the semester and annual systems, regression analysis determined the association between service quality parameters and overall satisfaction.

### Results and Discussions.

This study examined how satisfied Tribhuvan University Master's students studying mathematics education were with the level of service provided under the semester and annual systems. A 30-item questionnaire covering academic and non-academic features, course design, program concerns, reputation, group size, and access was used to gather data from 60 students (30 from each system). Descriptive statistics, regression analysis, and a z-test were used in the data analysis, which was carried out using SPSS, to compare satisfaction levels across system-based and demographic characteristics.

### Gender-Based Satisfaction

The study found that in five of the seven service quality variables academic aspects (mean: 3.26), non-academic elements (mean: 3.16), and group size (mean: 3.51) male students (65% of respondents) were more satisfied than female students (35%). Reputation was scored higher by female students (mean: 3.62) than by male students (mean: 3.35). Both sexes reported reasonable levels of satisfaction, despite some differences, suggesting that there is still opportunity for development in a number of areas.

### Comparison of Sponsors by Age and Tuition Fee

When compared to students aged 26-30, students aged 20-25 (78.3% of respondents) showed greater levels of satisfaction in six service quality categories, especially in academic aspects (mean: 3.24) and non-academic elements (mean: 3.23). In a similar vein, students who had their parents pay their tuition reported better levels of satisfaction, with higher means in both academic and non-academic areas (mean: 3.16 and 3.25, respectively), than self-funded students, who scored lower in these areas.

### System-Based Satisfaction

Overall satisfaction scores were similar for the semester and annual systems. Students in the semester system gave better ratings to group size (mean: 3.70) and course design (mean: 3.12), indicating that they valued smaller classrooms and ongoing evaluations. In contrast, students in the annual system rated reputation higher (mean: 3.65). While highlighting the helpful attitudes of administrative staff and polite teaching behavior, both groups showed moderate satisfaction with both academic (mean: 3.19), as well as non-academic (mean: 3.23). They also called for improved feedback systems and more useful course material.

### Creation, Delivery, and Evaluation

The curriculum design, instructional strategies, and assessment frameworks are all included in this category. With a standard deviation of 0.766 and an overall mean score of 2.91 for design, delivery, and evaluation, students' satisfaction was somewhat below neutral. The quality and contextual character of the mathematics curriculum received the best rating (mean: 3.30) out of the five criteria examined, while the ratio of theory to practical components received the lowest rating (mean: 2.37). These results imply that although students recognize the value of the program, they believe there is room for improvement in the ratio of academic to practical elements.

### Problems with the Program

Program concerns include the variety of academic programs available, flexibility, and counseling services. The mean score for this category was 2.59, with a standard deviation of 0.734, showing discontent among students. Professional development programs received the greatest rating (mean: 2.70), while counseling and placement services received the lowest rating (mean: 2.40). According to the results, students want more career-focused and specialized assistance to improve their educational experience.

### Credibility

The university's professional image and job prospects for graduates are related to its reputation. With a mean score of 3.44 and a standard deviation of 0.916, this variable demonstrated above-neutral pleasure. Students gave graduates' employment prospects the

highest rating (mean: 3.48), followed by academic programs' reputability (mean: 3.40). The university's capacity to prepare students for the workforce and uphold a respectable academic reputation is positively impacted by these findings.

### Size of the Group

The number of pupils in a class is known as the group size, and it affects the dynamics of teaching and learning. Satisfaction was indicated by the mean score of 3.51 with a standard deviation of 0.909. Although they were less happy with the existing class sizes (mean: 2.88), students overwhelmingly agreed that smaller class sizes improve learning (mean: 4.13). These results demonstrate that in order to improve educational outcomes, the university must continue to maintain smaller class sizes.

### Access

The availability of instructors, materials, and ICT facilities are all included in access. With a standard deviation of 0.651 and a mean score of 2.82, this variable showed satisfaction that was somewhat below neutral. The availability of academic staff for assistance received the best rating (mean: 3.17), while the library's reference books received the lowest rating (mean: 2.47). These results highlight the necessity of improved access to instructional materials and ICT tools to enhance learning.

### Analysis of Regression

The impact of factors related to service quality on total student satisfaction was investigated using regression analysis. 15.1% of the variation in student satisfaction was explained by the seven independent variables ( $R^2 = 0.151$ ): academic and non-academic components; design, delivery, and assessment; program problems; reputation; group size; and access. Of these, group size ( $\beta = 0.181$ ) and access ( $\beta = 0.372$ ) showed the greatest effects. According to the data, satisfaction levels might be considerably raised by preserving smaller class sizes and enhancing access.

### A Comparative Analysis of Semester and Annual Systems

To evaluate satisfaction levels between semester and annual systems, the z-test was used. The average score was 2.90 for the annual system and 2.97 for the semester system. The test determined that there was no discernible difference in the two systems' levels of satisfaction, with a calculated z-value of -0.27188 (below the crucial value of  $\pm 1.96$ ). This result suggests that both systems are thought to offer comparable levels of instruction and support.

With an emphasis on service quality across semester and annual systems, this study looked at Tribhuvan University students' satisfaction with mathematics education. The findings showed varying degrees of satisfaction with different aspects of service quality. Students were dissatisfied with program problems and access, but they were above-neutrally satisfied with reputation and group size. Access and group size were found to be important drivers of overall satisfaction through regression analysis.

Furthermore, there was not a significant distinction between the semester and annual systems, suggesting that both offer experiences that are similar. To meet student expectations, the institution must, nevertheless, strengthen counseling services, balance theoretical and practical components, improve resource access, and guarantee reduced class sizes. By addressing these issues, Tribhuvan's university educational quality and general student happiness can be significantly enhanced.

### Findings of the study

Using a 5-point Likert scale questionnaire, the researcher polled 60 students for this study: 30 from the semester system and 30 from the annual system. SPSS was used to examine the data, and statistical methods such as a z-test, mean, and beta values were used. According to the results, male students are typically happier with the services provided by the university than female students. Students between the ages of 20 and 25 also reported higher levels of satisfaction than students between the ages of 26 and 30. Additionally, compared to students who handle their costs on their own, those whose parents pay their tuition fees expressed higher levels of happiness.

Compared to their peers in the annual system, students who were enrolled in the semester system expressed greater levels of satisfaction with the university. Students generally expressed satisfaction with the university's reputation, the design, delivery, and evaluation of courses, as well as with the availability of instructors and resources. Dissatisfaction was observed, meanwhile, with the university's curriculum and class numbers.

Additionally, the research found that student satisfaction was positively correlated with service quality characteristics, including academic and non-academic features, design, delivery and assessment, reputation, and access. Notwithstanding these results, the z-test showed no discernible difference in the overall satisfaction levels of students enrolled in the yearly and semester systems, indicating that the service quality of both systems is similar.

### Conclusion.

In summary, the study shows that male students, those aged 20 to 25 years, students whose tuition expenses are financed by their parents, and those enrolled in the semester system are comparatively more satisfied with the services offered by Tribhuvan University. Key service quality dimensions' non-academic features, academic aspects, course design, delivery and evaluation, university prestige, and access to professors and materials significantly contribute to overall student satisfaction.

To better fulfill student expectations, the study did, however, also identify areas that require improvement, especially with regard to program offerings and class size. Universities must put a high priority on service quality and student happiness in the context of a worldwide market where practical knowledge and high-quality education are essential. In addition to improving the educational experience, high service quality puts schools in a competitive position and aids in luring and keeping students for long-term success.

### References

- Afzal, W., Akram, A., Akram, M. S., & Ijaz, A. (2010). On students' perspective of quality in higher education. *3rd International Conference: Assessing Quality in Higher Education*, 417–418, 422.
- Bitner, M. J., & Zeithaml, V. A. (1996). *Services marketing*. McGraw-Hill.

- Brochado, A. (2009). Comparing alternative instruments to measure services quality in higher education. *Quality in Higher Education*, 17(2), 1–30.
- Delaney, A. (2005). Expanding students' voice in assessment through senior survey research. *American Institutional Research Professional File*, (96), 1–19.
- Drucker, P. (1985). *Innovation and entrepreneurship*. Harper & Row.
- Elliot, K. M., & Healy, M. A. (2001). Key factors influencing student satisfaction related to recruitment and retention. *Journal of Marketing for Higher Education*, 10(4), 1–11.
- Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Sage Publications.
- Kaldenberg, D. O., Browne, W. G., & Brown, D. J. (1998). Student customer factors affecting satisfaction and assessments of institutional quality. *Journal of Marketing Management*, 8(3), 1–14.
- Kara, A., & DeShields, O. W. (2004). Business student satisfaction, intentions, and retentions in higher education: An empirical investigation. *Pennsylvania State University-York Campus & California State University*.
- Kasper, H., Van Helsdingen, P., & De Vries, V. (1999). *Service marketing management*. John Wiley & Sons.
- Kayastha, A. (2011). A study of graduate students' satisfaction towards service quality of universities in Thailand. *Research Paper*, School of Business and Technology, Webster University.
- Keller, G. (2009). *Managerial statistics abbreviated* (8th ed.). Cengage Learning.
- Kotler, P., Armstrong, G., Saunders, J., & Wong, V. (1996). *Principle of marketing: The European edition*. Prentice-Hall International.
- Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *Review of Higher Education*, 24(3), 309–332.
- Mai, L. (2005). A comparative study between the UK and US: The student satisfaction in higher education and its influential factors. *Journal of Marketing Management*, 21, 859–878.
- Navarro, M., Iglesias, M. P., & Torres, P. R. (2005). A new management of universities: Satisfaction with offered courses. *International Journal of Educational Management*, 19(6), 510.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Retailing*, 64(Spring), 12–40.
- Sasser, W. E., Olsen, R. P., & Wyckoff, D. D. (1978). *Management of service operations*. Allyn & Bacon.
- Schreiner, L. A. (2009). Linking student satisfaction and retention. Noel Levitz: Azusa Pacific University.
- Seymour, D. T. (1993). *Causing quality in higher education*. Oryx Press.
- Zeithaml, V. A., Parasuraman, A., & Berry, L. L. (1990). *Delivering quality service: Balancing customer perceptions and expectations*. The Free Press.
- Basu, P. (2016). Students' Satisfaction in Mathematics Towards Service Quality of Semester and Annual System. Tribhuvan University.