

The Impact of Class Size on Student Satisfaction: A Quantitative Study of Undergraduate Students

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Abstract

The objective of this study was to analyze the impact of class size on student satisfaction at the undergraduate level in a private institute of Karachi. Based on the objectives, one hypothesis was formulated and one research question was raised how does class size affect student satisfaction among undergraduate students? The scope of the study was limited to undergraduate students enrolled in a private institute of Karachi.

In depth review of the literature was conducted, which highlighted the importance of class size in higher education. A Quantitative survey research design was employed. Stratified random sampling technique was used to ensure proportional representation of both groups. The data was analyzed statistically Data was analyzed statistically through using Mann-Whitney U test (non-parametric) test.

The findings revealed a significant relationship between class size and student satisfaction. Students in smaller classes (Semester 6) reported higher levels of satisfaction compared to those in larger classes (Semester 4). Key factors influencing satisfaction included the quality of interaction with instructors, opportunities for participation, and the availability of learning resources. Based on the findings, concrete recommendations were made for the private institute to optimize class sizes, improve teaching strategies, and enhance student satisfaction. This study contributes to the growing body of research on class size and its implications for higher education, particularly in resource-constrained settings like Pakistan.

Keywords: Class size, Students satisfaction

Introduction

The class size is important factor which make the quality of education and learning outcomes along with learning experiences of students. At higher education level where the focus is on Development Critical thinking, inspiration and teamwork, the number of students in a class room can markedly impact teaching effectiveness and learning outcomes. Class of minimum students are frequently associated with high student engagement, individual attention, and good academic outcomes while the class of maximum students may face challenges like limited interaction between teaches and students, minimize the participation and satisfaction levels (Monks & Schmidt, 2011). However, the relationship between class size and student satisfaction remains a

issue of ongoing discussion, mostly in the context of developing countries where resource limitations often lead to overcrowded classrooms.

In Pakistan, higher education institutions face many challenges, including limited funding, inadequate infrastructure, and a rapidly growing student populace (M. Z. Shah et al., n.d.). Private institutes, they play important role in the country's education system, often try to balance quality education with economic sustainability.

There are many private institutes offering higher education in Karachi. However, these private institutes often face many challenges, such as minimum physical space, unstable student enrollment. Understanding the impact of class size on student satisfaction is crucial for stakeholders, as it can inform decisions on resource allocation, classroom management and teaching strategies, ultimately improving the quality of education and student skills.

Although the increasing research on class size and student satisfaction worldwide, there is a lack of context-specific studies in Pakistan, particularly in private institutes at the undergraduate level. Most existing studies focus on primary or secondary education, leaving a gap in understanding how class size affects undergraduate students' learning experiences. This gap is particularly significant in the context of private institutes in Karachi, where the unique challenges of resource limitations and diverse student populations may impact the relationship between class size and satisfaction. Addressing this gap is crucial for rising evidence-based strategies to improve student satisfaction and learning outcomes in higher education.

This study aims to examine the relationship between class size and student satisfaction among undergraduate students at a private institute of Karachi. Specifically, it seeks to answer the following research question:

What is the relationship between class size and student satisfaction?

By exploring this research questions, this study adds to the broader discourse on class size and its implications for higher education. The findings will provide valuable insights for private institutes in Karachi and similar contexts to adjust class sizes, increase teaching practices, and improve student satisfaction. Finally, this research aims to support the formation of a more attractive and effective learning environment for undergraduate students, certifying that they are better prepared to meet the challenges of the world. Additionally, the study adds to the limited body of research on class size and student satisfaction in Karachi Pakistan, offering a foundation for future studies in this area at a big level.

Literature Review

The relationship between class size and student satisfaction has been widely studied in higher education. Research shows that class size considerably effects student satisfaction, mainly in the terms of academic performance and teacher interaction. Research studies have shown that students in smaller classes tend to report higher levels of satisfaction with their academic achievements and instructor support compared to those in larger classes. For example, a study conducted at Hasan Prishtina University which exposed that students in smaller and medium-sized groups were more satisfied with their academic achievements and they gave higher evaluations to their teachers, perceiving them as supportive (Hyseni-Duraku, 2014) as well as another study indicates that class size has a negative impact on the student-rated outcomes of amount learned, instructor rating, and course rating (Monks & Schmidt, 2011).

Theoretical context also support the small classes as a meta-analysis of class size and students achievement study indicates clear and strong relationship between class size and achievement has emerged (Glass & Smith, 1979).

Another research found that as class size increases, mean student ratings of instruction decrease, even when other variables are controlled (Crittenden et al., 1975).

Furthermore, the relationship between class size and student satisfaction is not direct. Some studies suggest a U-shaped relationship, where very small and very large classes may also have negative effects on certain features of student satisfaction, such as group interaction and instructor interaction (Marsh et al., 1979).

Another research conducted a on class size and students achievement along with instructor satisfaction which indicates that class size markedly impact on students achievements (Hussain & AlHussaini, 2024).

Class size has developed as a critical factor influencing student satisfaction across different academic programs. Research in nursing education indicates that the increasing admissions in bachelor nursing programs, attached with a faculty shortage, has led to larger class sizes, which may negatively impact student satisfaction and learning outcomes. A study found that nursing sciences students reported meaningfully higher satisfaction in smaller classes compared to larger ones, although no notable difference in test scores was observed (Lee et al., 2011). This study recommends that while class size may not directly affect academic performance, it plays a vital role in determining the overall student experience. As well as, in the area of computer science, the efficiency of pedagogical methods in large classes is under inspection. Evidence indicates that Peer Instruction improves student satisfaction even in larger class settings, outdoing old lecture methods. An inclusive analysis of student evaluations across varying class sizes revealed that while satisfaction generally drops as class size increases, Peer Instruction mitigates this decline more effectively than traditional lectures (Liao et al., 2017).

The situation of higher education in Pakistan is marked by major challenges and developing trends that influence its capacity to contribute to socio-economic change. The Higher Education Commission (HEC) has started various improvements aimed at aligning educational outcomes with work market needs, yet a persistent gap between higher education outputs and the skilled labor force remains a critical issue (Hinduja et al., 2023).

This disconnect hampers the potential of higher education institutions (HEIs) to adoptive invention and drive economic growth. Moreover, the integration of sustainability into syllabi is gaining grip, with a focus on Education for Sustainable Development (ESD). However, the application of these creativities faces problems, including inadequate governance and coordination among stakeholders (Fatima et al., 2020).

Few existing studies conducted but with focus on primary and secondary system. A study conducted in Lahore Pakistan revels there is no any significant effect of class size on student's behavior at primary level (M. Shah & Bashir, 2022)

Even with the huge research body on class size and student's satisfaction but there is remarkable lack of specified context studies in Pakistan especially at undergraduate level and its leaves a significant gap to understating how class size impacts undergraduate students learning experiences. This study aims to address these gaps by examining the impact of class size on student satisfaction at the undergraduate level in a private institute of Karachi.

Methodology

Quantitative research design, population of this study was comprised on 120 total undergraduate students 80 in semester IV and 40 in semester VI , out of this population a sample of 60 students was drawn through stratified random sampling technique 40 from semester IV and 20 from semester VI. A questionnaire was designed comprised of 20 items. Data was analyzed statistically through using Mann-Whitney U test.

All ethical guidelines were ensured.

Data Analysis

The study employed a quantitative, comparative design to examine the relationship between class size (independent variable: small [$n=20$] vs. large [$n=40$]) and student satisfaction (dependent variable: 100-point scale) among undergraduates at a private institute in Karachi. Data analysis was conducted using IBM SPSS.

Descriptive statistics (mean, standard deviation, range) were computed for both groups. Shapiro-Wilk tests revealed non-normally distributed satisfaction scores for small classes ($W(20) = 0.92$, $*p* = .024$), while large classes showed normality ($W(40) = 0.97$, $*p* = .108$). Due to this violation of parametric assumptions and unequal group sizes, the non-parametric **Mann-Whitney U test** was selected for hypothesis testing. Effect sizes were calculated using Rosenthal's method ($*r* = |*z*|/\sqrt{N}$).

Results

Descriptive Statistics

Students in small classes reported substantially higher satisfaction ($M = 77.40$, $SD = 9.14$, range = 54–89) compared to large classes ($M = 54.63$, $SD = 12.65$, range = 25–85). The narrower range and lower variability (SD) in small classes suggested more consistent satisfaction levels.

Inferential Statistics

The Mann-Whitney U test confirmed significant differences in satisfaction ranks:

Small classes: $M_{\text{rank}} = 46.95$, Sum of Ranks = 939.00

Large classes: $M_{\text{rank}} = 22.28$, Sum of Ranks = 891.00

Test statistics indicated a robust effect:

$U = 71.000$, $*z* = -5.165$, $*p* < .001$

Effect size: $*r* = .67$ (large; $*r^2 = .45$)

Table 1

Rank of Satisfaction Scores by Class Size

Class Size	N	Mean Rank	Sum of Ranks
Small	20	46.95	939.00
Large	40	22.28	891.00

Table 2

Mann-Whitney U Test Results

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Student Satisfaction	71.000	891.000	-5.165	0.000

The null hypothesis (no relationship between class size and satisfaction) was rejected ($*p* < .001$), supporting the alternative hypothesis that smaller classes yield significantly higher satisfaction.

Conclusion

This study provides compelling evidence that class size significantly impacts student satisfaction, with small classes (≤ 40 students) demonstrating:

1. **Higher satisfaction** ($\Delta M = +22.77$ points)
2. **Greater consistency** (lower SD and range)
3. **Large practical effect** (45% variance explained)

Suggestions

- **Institutional:** Recommends capping core courses at 20 students.
- **Policy:** Supports investment in smaller class formats.

Limitations & Future Research

- Single-institution sampling limits generalizability.
- Future studies should explore:
 - Public institutions
 - Discipline-specific effects

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