AN EXPLORATORY ANALYSIS OF DETERMINING FACTORS INFLUENCING STUDENT SATISFACTION WITH POSTGRADUATE PROGRAM SERVICES

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Abstract: This research aims to investigate the determinants influencing postgraduate student satisfaction with postgraduate program services. The study employs a combination of qualitative and quantitative methodologies. Initially, in-depth interviews were conducted with 11 actively enrolled postgraduate students, followed by a survey distributed to 90 current postgraduate students at Universitas Klabat. The collected data underwent exploratory factor analysis (EFA) using principal component analysis, facilitating the identification of factors affecting graduate student satisfaction. The findings reveal that several crucial factors significantly contribute to postgraduate student satisfaction, including institutional excellence, program enrichment, faculty characteristics, and the quality of the learning environment. The data analysis outcomes underscore the nuanced interplay of these elements, emphasizing their substantial influence on the satisfaction levels of students enrolled in graduate programs.

Keywords: Student Satisfaction, Factor Analysis, Post-Graduate Program, Institutional Excellence, Program Enrichment, Faculty Characteristics, Learning Environment Quality

INTRODUCTION

The success of an educational institution is intricately tied to the quality of its services. Educational institutions encompass various facets, including formal establishments like schools, non-formal entities such as language and computer courses, and informal avenues provided by families (Putri, 2020). By offering high-quality services, an institution can positively influence its immediate environment (Reina, 2012). Specifically, universities, as distinguished educational institutions, are responsible for ensuring academic excellence and student satisfaction, particularly within postgraduate study programs. This imperative underscores a university's commitment to optimizing the satisfaction of graduate students attending the institution during the teaching and learning process.

According to Rahmawati (2013), educational institutions must employ diverse strategies to meet the satisfaction criteria of their consumers, in this context referring to students. Unfortunately, students are often dissatisfied with universities' education systems or services. Satisfaction serves as a pivotal benchmark by which individuals assess the effectiveness of the services received (Waworuntu et al., 2022; Poluan et al., 2022; Lebo & Mandagi, 2023). It acts as a universal instrument all stakeholders employ to gauge the quality of services. Satisfaction denotes pleasure or relief from fulfilling expectations (Abin et al., 2022; Rondonuwu & Mandagi, 2023). Linov (2020) extends this concept by characterizing satisfaction as the emotional response consumers harbor toward the product or service obtained.

Consequently, the service rendered to consumers significantly influences the quality of the institutional system. In the educational context, students are akin to customers as they financially invest in the services provided by the institution (Lussainda, 2019). This financial transaction necessitates a reciprocal commitment, with students inherently possessing expectations and desired outcomes in the educational process.

Pursuing academic excellence is a paramount goal for higher education institutions, with postgraduate programs serving as a cornerstone in shaping the academic landscape. Focusing on postgraduate education necessitates understanding factors significantly impacting student satisfaction. As education evolves, there is an increasing recognition that student satisfaction is not merely a subjective measure but a crucial indicator of the overall efficacy of educational programs.

The Graduate Program at Universitas Klabat envisions becoming a nationally and regionally recognized center of excellence for postgraduate education. This vision promotes harmony between competence, professionalism, and competitiveness and a commitment to upholding morals and ethics. Additionally, the program aims to foster a global outlook and instill a service-oriented mindset.

Despite these aspirations, graduate programs commonly encounter challenges in ensuring the satisfaction of their postgraduate students. Recognizing the importance of addressing this issue for program enhancement, it becomes crucial to understand the determinants of student satisfaction. The escalating demand for high-quality postgraduate education further underscores the need to examine the factors influencing student contentment comprehensively. In the specific context of Universitas Klabat's postgraduate students, this study aims to delve into the determinants of student satisfaction within the realm of postgraduate program services. By scrutinizing these factors, the goal is to contribute valuable insights that can inform strategies for enhancing the overall satisfaction of postgraduate students within the university's programs. The success of an educational institution is intricately tied to the quality of its services. Educational institutions encompass various facets, including formal establishments like schools, non-formal entities such as language and computer courses, and informal avenues provided by families (Putri, 2020). By offering high-quality services, an institution can positively influence its immediate environment (Reina, 2012). Specifically, universities, as distinguished educational institutions, are responsible for ensuring academic excellence and student satisfaction, particularly within postgraduate study programs. This imperative underscores a university's commitment to optimizing the satisfaction of graduate students attending the institution during the teaching and learning process.

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METHODS

The research design employed in this study adopts a mixed-methods approach, incorporating both quantitative and qualitative methodologies. Specifically, the study employs exploratory factor analysis techniques, utilizing the principal component analysis method to delve into the intricacies of the data. To capture a comprehensive understanding, in-depth interviews were conducted with postgraduate students from Klabat University Airmadidi, North Sulawesi, who were actively engaged in their studies. The interviews were a valuable source for obtaining novel insights, subsequently integrated into formulating questionnaire items. Notably, the interviews concluded once saturation was reached, i.e., when no further novel information emerged, terminating the eleventh respondent.

The in-depth interviews yielded 22 new information variables. One variable was deemed invalid after a stringent evaluation process involving validity and reliability tests. In contrast, the remaining 21 variables were affirmed as valid and reliable, forming the basis for questionnaire items. The sampling methodology adopted for this study involves a purposeful combination of purposive and quota sampling. The questionnaire was distributed exclusively to postgraduate students at Klabat University who were actively enrolled during the research period. The total number of respondents reached 90, mirroring the count of active postgraduate students at Klabat University.

To address the research inquiries, the study employs exploratory factor analysis, the principal component analysis method facilitated by utilizing the SPSS statistical program. The triangulation of quantitative and qualitative methods, coupled with a meticulous evaluation of data integrity through statistical analyses, contributes to the robustness and reliability of the study's findings. Data exploration involved examining Kaiser-Meyer-Olkin's value of Sampling Adequacy (KMO) and the significance value of Bartlett's Test of Sphericity. This study generated a KMO value of 0.879, surpassing the predefined threshold of 0.6. According to Beavers et al. (2013), KMO values between 0.80 and 0.89 are considered useful, while values between 0.90 and 1.00 are categorized as very good.

RESULTS AND DISCUSSIONS

Bartlett's Test of Sphericity yielded a significance value 0.000, less than 0.05. This result indicates that each variable in the study qualifies for further factor analysis. Principal Component Analysis was employed for factor extraction, resulting in the identification of two emergent factors, specifically designated as "Comfort" and "Social." The integrity of these factors was assessed by examining Cronbach's Alpha values, as delineated in Table 1. A Cronbach's Alpha value equal to or exceeding 0.6 for each factor signifies the internal consistency of the variables comprising the respective factors. This observation implies that the formed factors exhibit homogeneity, capturing a cohesive set of variables that measure a coherent construct. Such robust internal consistency indicates the suitability of the identified factors for subsequent factorization analyses.

Table 1. Cronbach's Alpha

No	Factor	Cronbach's alpha
1	Conducive Educational Environment	0.940
2	Holistic educational experience	0.928
3	Quality of Lecturers and Academic Interaction	0.881
4	Supportive Learning Facilities and Environment	0.798

Table 2 presents a comprehensive overview, indicating that the four discerned factors collectively account for a substantive portion, specifically 77.375%, of the overall variance within the factors of postgraduate student satisfaction. The preeminent contribution is attributed to factor 1, denoted as the "conducive educational environment, " which elucidates 59.780% of the aggregate factor. This underscores the pronounced influence of the conducive educational environment on its counterparts.

Table 2. Total Variance Explained (%)

Component	1	2	3	4
Variance	59.780	7.408	5.415	4.772
Cumulative	59.780	67.188	72.603	77.375

The loading values for each variable into the factors are presented in Table 3. Employing Varimax Rotation, the variables have been systematically arranged and grouped based on their loading values, from the highest to the lowest, facilitating a more straightforward interpretation. Variables with loading values below 0.5 were excluded. Variables denoted as " The campus of this graduate program is well-maintained and conducive for learning" (loading value: 0.736) and "The courses offered in this graduate program are directly relevant to professional careers" (loading value: 0.728) exhibited the highest loading values in the first factor. Conversely, variables such as "Hybrid classes are offered as part of the learning experience in this graduate program" (loading value: 0.793) and "The program offers engaging and well-structured learning programs and materials" (loading value: 0.787) demonstrated the highest loading values in the second factor.

Table 3. Rotated Component Matrix

Variable	Factor			
	1	2	3	4
The campus of this graduate program is well-maintained and conducive to learning.	0.736	0.176	0.144	0.315
The courses offered in this graduate program are directly relevant to professional careers.	0.728	0.219	0.344	0.202
Students in this graduate program are known for their honesty and discipline.	0.722	0.352	0.404	0.224
Graduates from this program are recognized for their quality and competitiveness.	0.705	0.189	0.422	0.218
The campus provides prompt and constructive feedback to students.	0.678	0.351	0.138	0.319

Variable	Factor			
	1	**2**	**3**	**4**
Interaction between lecturers and students is active and encouraged during classes.	0.649	0.565	0.285	0.099
Qualified and professional lecturers contribute to the excellence of this graduate program.	0.604	0.359	0.543	0.014
The program employs an objective assessment system to evaluate student performance.	0.574	0.514	0.224	0.169
Hybrid classes are offered as part of the learning experience in this graduate program.	0.081	0.793	0.392	0.247
The program offers engaging and well-structured learning programs and materials.	0.226	0.787	0.260	0.211
Campus services in this graduate program are of high quality.	0.408	0.750	0.157	0.295
I have gained valuable knowledge and insights through my experience in this graduate program.	0.374	0.748	0.149	0.116
The program organizes various activities outside of regular class hours.	0.448	0.596	0.000	0.494
Tuition fees for this graduate program are affordable.	0.367	0.530	0.258	0.469
Communication between students and lecturers outside of class hours is seamless in the UNKLAB Postgraduate Program.	0.450	0.511	0.442	0.171
The lecturers in this postgraduate program are friendly and approachable.	0.224	0.322	0.840	0.085
The teaching methods employed in this postgraduate program are effective and motivating.	0.359	0.146	0.758	0.225
Lecturers in this graduate program are known for their honesty and discipline.	0.500	0.362	0.610	0.209
The facilities, including air-conditioned rooms and Wifi, are comprehensive and well-maintained.	0.263	0.271	-0.010	0.788
The positive atmosphere in the classroom contributes to a comfortable learning environment in this graduate program.	0.193	0.038	0.470	0.722
	0.191	0.506	0.208	0.699

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

Table 3 presents the Rotated Component Matrix resulting from PCA with Varimax rotation and Kaiser normalization. The table displays the factor loadings for various variables associated with the

graduate program. Factor loadings represent the strength and direction of the relationship between each variable and the identified factors. The four factors extracted are labeled 1 through 4.

In Factor 1, variables such as the well-maintained campus, courses relevant to professional careers, and students' honesty and discipline show high positive loadings, indicating a strong association with this factor. Factor 2 is characterized by positive loadings for variables related to active interaction between lecturers and students, qualified and professional lecturers, and an objective assessment system. Factor 3 encompasses variables associated with engaging learning programs, high-quality campus services, and various extracurricular activities. Factor 4 reflects the positive atmosphere in the classroom, complemented by factors like effective teaching methods and well-maintained facilities.

These results suggest a multidimensional nature of the graduate program, with distinct factors capturing different aspects such as campus quality, academic interactions, program engagement, and classroom atmosphere. The interpretation of the factors is based on the magnitude and pattern of factor loadings, providing valuable insights into the program's strengths and areas of emphasis as perceived by the respondents.

Table 4. Identified factors and variables

Factors	Variable
Factor 1: Institutional Excellence	The campus of this graduate program is well-maintained and conducive to learning.
	The courses offered in this graduate program are directly relevant to professional careers.
	Students in this graduate program are known for their honesty and discipline.
	Graduates from this program are recognized for their quality and competitiveness.
	The campus provides prompt and constructive feedback to students.
	Interaction between lecturers and students is active and encouraged during classes.
	Qualified and professional lecturers contribute to the excellence of this graduate program.
	The program employs an objective assessment system to evaluate student performance.
Factor 2: Program Enrichment	Hybrid classes are offered as part of the learning experience in this graduate program.
	The program offers engaging and well-structured learning programs and materials.
	Campus services in this graduate program are of high quality.
	I have gained valuable knowledge and insights through my experience in this graduate program.
	The program organizes various activities outside of regular class hours.

Factors	Variable
	Tuition fees for this graduate program are affordable.
	Communication between students and lecturers outside of class hours is seamless in this postgraduate program.
Factor 3: Faculty characteristics	The lecturers in this postgraduate program are friendly and approachable.
	The teaching methods employed in this postgraduate program are effective and motivating.
	Lecturers in this graduate program are known for their honesty and discipline.
Factor 4: Learning Environment Quality	The facilities, including air-conditioned rooms and Wifi, are comprehensive and well-maintained.
	The positive atmosphere in the classroom contributes to a comfortable learning environment in this graduate program.

Upon conducting a comprehensive data analysis, the present study identifies four factors contributing to postgraduate student satisfaction. These factors include institutional excellence, program enrichment, faculty characteristics, and learning environment quality.

In the realm of postgraduate student satisfaction, institutional excellence emerges as a paramount factor. The significance of institutional excellence is underscored by elements encompassing robust facilities, well-developed campus infrastructure, unfettered access to educational resources, and cultivating a conducive academic atmosphere. As posited by Haryanti and Yuliansyah (2015), these constituents collectively wield a positive influence on the overall satisfaction levels of graduate students. The strategic integration of these facets within an academic institution fosters an environment conducive to optimal learning experiences, thereby enhancing the satisfaction levels of postgraduate students.

Moreover, it is imperative to acknowledge the multifaceted nature of postgraduate student satisfaction, wherein program enrichment constitutes another pivotal determinant. Enriching academic programs, encompassing curricular innovations, interdisciplinary initiatives, and relevant real-world applications, emerges as a substantial facet influencing the holistic satisfaction of postgraduate students. According to Colella (2013), a robust educational environment necessitates and thrives on cultivating collaborative and interactive dynamics among students. This collaborative ethos is manifested through engagement in joint projects, participatory group discussions, and fostering a spirit of cooperation among students (Rosé & Ferschke, 2016). Incorporating such collaborative initiatives is posited as instrumental in enhancing the overall quality of the learning experience, thereby positively influencing student satisfaction within the academic framework. Furthermore, the significance of program enrichment lies in its capacity to align academic offerings

with the evolving needs of students, thereby augmenting their overall satisfaction with the educational experience (Cho et al., 2022).

In addition to institutional and program-related considerations, the characteristics of faculty members play a pivotal role in shaping postgraduate student satisfaction. Faculty characteristics extend beyond mere subject matter expertise, encompassing pedagogical approaches, mentorship qualities, and the establishment of a supportive academic rapport. The influential role of faculty characteristics is integral to fostering a dynamic and engaging learning environment, thereby contributing significantly to postgraduate student satisfaction. As expounded by Tinto, Caena, and Redecker (2019), lecturer quality encompasses multifaceted dimensions such as academic competence, extensive experience, adept teaching skills, a genuine concern for students' welfare, and the capability to inspire and motivate academic pursuits. With this perspective, Basturkmen & Shackleford (2015) underscore the pivotal role of meaningful interactions between lecturers and students. Such interactions encompass diverse realms, including academic advising, participative class discussions, and collaborative engagement in research endeavors or projects. Further reinforcing the significance of positive faculty-student interactions, Hamid et al. (2015) elucidate that constructive engagements with lecturers contribute significantly to heightened student satisfaction levels and foster an increased interest in the subject matter under instruction. This underscores the paramount importance of fostering a conducive and interactive academic environment for optimal graduate student satisfaction.

Furthermore, the quality of the learning environment emerges as a critical determinant of postgraduate student satisfaction. A supportive learning environment encompasses various crucial elements, including but not limited to well-equipped facilities, comfortable classrooms, ready access to educational resources, and the cultivation of a conducive academic atmosphere. These factors collectively contribute to fostering an environment where students can thrive intellectually and engage fully in their educational pursuits. A positive learning environment encompasses factors such as collaborative spaces, technological infrastructure, and a culture of intellectual exchange (Broadbent & Poon, 2015). Collectively, these elements contribute to an enriched academic milieu that resonates positively with the satisfaction levels of postgraduate students.

CONCLUSION

This research aims to identify the factors contributing to postgraduate students' satisfaction with their academic program services. The study's outcomes reveal a nuanced interplay among four pivotal elements: institutional excellence, program enrichment, faculty characteristics, and the quality of the

learning environment. The first factor encompasses elements such as a well-maintained campus, courses relevant to professional careers, and students' honesty and discipline, exhibiting high positive loadings that indicate a robust association with this factor. The second factor is positive loadings for variables related to active interaction between lecturers and students, qualified and professional lecturers, and an objective assessment system. The third factor includes variables associated with engaging learning programs, high-quality campus services, and various extracurricular activities. The fourth factor reflects a positive classroom atmosphere, complemented by effective teaching methods and well-maintained facilities.

This comprehensive elucidation of these factors enhances our understanding of the nuanced dynamics. It is a valuable resource for educational institutions aiming to optimize the academic experience for their postgraduate student cohorts. By acknowledging and strategically addressing these integral components, institutions can cultivate an environment conducive to heightened satisfaction, contributing to postgraduate students' holistic development and success in their academic pursuits. This nuanced understanding provides a foundation for institutions to refine their strategies and foster an enriched educational experience that resonates positively with postgraduate students' diverse needs and expectations.

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