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NGHIÊN CỨU VỀ MỐI QUAN HỆ GIỮA SỰ HÀI LÒNG VÀ KẾT QUẢ HỌC TẬP CỦA SINH VIÊN ĐẠI HỌC NGOẠI THƯƠNG

Đào Phương Mai, Trần Ngọc Bảo Trâm, Phạm Vũ Phương Anh, Phạm Thị Phương Mai, Hà Kiều Anh¹

Sinh viên K59 CLC Quản trị kinh doanh quốc tế – Khoa Quản trị kinh doanh

Trường Đại học Ngoại thương, Hà Nội, Việt Nam

Dương Thị Hoài Nhung

Giảng viên Khoa Quản trị kinh doanh

Trường Đại học Ngoại thương, Hà Nội, Việt Nam

Tóm tắt

Ngày nay, giáo dục đại học đã trở nên dễ tiếp cận hơn với nhiều cá nhân trên khắp thế giới và việc nghiên cứu về sự hài lòng của sinh viên cũng là một chủ đề quan trọng hơn cả đối với các trường đại học. Tuy nhiên, khái niệm này vẫn chưa được nghiên cứu một cách có chiều sâu mặc dù sự hài lòng của sinh viên đóng góp rất lớn đối với chất lượng tổng thể của trường đại học. Nghiên cứu này được tiến hành để khảo sát mức độ hài lòng của sinh viên đại học Ngoại thương về các khía cạnh khác nhau của trường và ảnh hưởng của sự hài lòng hiệu suất học tập của họ. Khảo sát bao gồm các câu hỏi về mức độ hài lòng của sinh viên đối với: cơ sở vật chất của trường, các hoạt động ngoại khóa, hỗ trợ sinh viên từ các phòng ban, chương trình giảng dạy và tính tiện ích trong học tập. Nghiên cứu này cho thấy rằng có mối liên hệ giữa sự hài lòng của sinh viên và điểm trung bình tích lũy của họ. Từ đó, nhóm tác giả đề xuất một số khuyến nghị để cải thiện sự hài lòng của sinh viên, giúp họ đạt được hiệu suất học tập cao hơn trong tương lai.

Từ khóa: sự hài lòng, kết quả học tập, mối quan hệ, khảo sát.

ANALYSE THE RELATIONSHIP BETWEEN STUDENT SATISFACTION AND ACADEMIC PERFORMANCE IN FOREIGN TRADE UNIVERSITY

Abstract

Higher Education is now accessible to larger numbers of people around the world than ever before yet despite the fact that an understanding of student satisfaction has never been more

¹ Tác giả liên hệ, Email: k59.2014250206@ftu.edu.vn

important for today's universities, the concept remains poorly understood even though it contributes to the universities' overall quality. This research is conducted to examine what level of satisfaction Foreign Trade University students have about different aspects of the university and the influence on their academic performance. The questionnaire contains questions of how satisfied undergraduates are regarding: university's facilities, extracurricular activities, student support, syllabus and course availability. This research indicates that there is a correlation between student satisfaction and their grade point average (GPA). Thereby, the authors propose some recommendations to improve student satisfaction for assisting students to achieve higher GPA in the future as well as accomplish unforgettable triumph in their educational path.

Keywords: Student Satisfaction, Academic Performance, Relationship, Survey.

1. Introduction

Higher education has been considered a service to students. In the 21st century, institutions of higher education hold one of the most important roles in shaping the future of our society. Research indicates that a strong system of higher education is a significant contributor to the country's ability to compete in the global marketplace and is critical to our economic strength, social well-being, and position as a world leader (Tomlinson, 2017). Thus, student satisfaction becomes central to the assessment of university quality (Latif et al., 2021). The ability to provide quality education, facilities, and environment for students greatly affects the survival of higher education institutions.

Recent changes in the Vietnamese higher education system precipitate the increase in improving overall quality among institutions concerning the academic results of the students attending. The success of this improvement depends on the educational performance of the students, which is directly influenced by the student's satisfaction about the university. Under these circumstances, institutions have to undertake competitive strategies in order to face the strong rivalry from other universities from around the country to improve the satisfaction and overall GPA of their students.

Research by Pham et al. (2016) in Vietnam found that the concept of service quality in universities was based on the output of the graduates. The main focus of service quality at several universities in Vietnam is to prepare graduates who could fulfil the demand of the industry and adapt to the work environment because if a university could produce good graduates with high GPA, then it will give a good impact to the university's image, popularity and standard in the community. However, the main focus of service quality of higher learning institutions in most research leads to the increasing popularity of a university where satisfaction on its service quality could encourage the community to promote it to others.

A number of studies have been conducted in Vietnam and in this study, the online questionnaires are sent to approximately 200 students with different majors at economic universities in the Northern region of Vietnam, then responses are analysed in-depth for further investigation. The main aspects are: university's facilities, extracurricular activities, student support provided by any departments, syllabus and registration & course availability with the satisfaction of students scaled from 1 to 5, which directly related to their academic results. This research is conducted to investigate whether there is a relationship between Foreign Trade

University student satisfaction and academic performance, as well as the most significant variables contributing to the model.

2. Literature Review and Hypothesis Development

2.1. Satisfaction

Mai (2005) studied the student satisfaction in higher education and its influential factors. It was found that the overall impression of the school, overall impression of the quality of the education, teachers expertise and their interest in their subject, the quality and accessibility of IT facilities and the prospects of the degree furthering students' careers were the most influential predictors of the students' satisfaction. Similarly Deshields et al. (2005) used a satisfaction model and Herzberg's two factor theory to examine the determinants of student satisfaction with education. They found that faculty performance and classes were the key factors which determined the quality of college experience of students which in turn led to satisfaction. All these studies emphasise certain factors of 5448 Babar Zaheer Butt and Kashif ur Rehman/Procedia Social and Behavioral Sciences 2 (2010) 5446–5450 education offerings which determine the students' satisfaction with education and in turn loyalty to the institution. Therefore the objective of this study is to analyse the student satisfaction in higher education in Pakistan which is growing well in recent years.

Based on an issue paper of Student satisfaction (2018) is positively associated with program completion rates and grade achievement (GPA). Former students who reported higher levels of satisfaction tended to have higher grades and were more likely to have completed their program than students who were less satisfied. These findings are similar regardless of gender, age, program, or location of institution. In contrast, there is almost no relationship between being employed and satisfaction scores. Those who were employed were not more satisfied than those who were not working. Nor is there a difference between those who took further studies and those who did not. A good part of students' expression of satisfaction is related to factors other than the educational experience itself; there are demographic characteristics and outcomes that can influence satisfaction levels. Older students, females, and those from health-related programs tend to say they were more satisfied - having a training-related job shows the strongest effect. Although these factors are outside the direct control of post-secondary institutions, using them in the analysis contributes to an understanding of what makes students satisfied.

2.2. Factors affecting Student Satisfaction

Yu and Dean (2001) examined that both positive and negative emotions and cognitive component of satisfaction correlate with student loyalty and that affective component of satisfaction serves as a better predictor than cognitive factor. Palacio et al (2002) conducted a study on Spanish university students; the results revealed that university image influenced the student satisfaction with the university. The results of a study conducted by Mayo et al (2004) illustrated that conflicting family/work demands, financial issues and academic concerns were the factors identified by students as possible reasons for attrition. Aldemir and Gulcan (2004) examined the Turkish students' satisfaction in higher education. The results of study showed that for some Turkish university students, the quality of instructors, Education, textbooks and being female and informed before attending university are considered to be important factors of

satisfaction. For instance Navarro et al (2005) surveyed the Spanish university students for their satisfaction with educational offers made by the universities. The results of the study expressed that the teaching staff, the teaching methods and course administration were key elements to achieving student satisfaction and their subsequent loyalty.

Afzaal Ali and Israr Ahmed (2011) studied the key factors for determining students' satisfaction in distance learning courses: A Study of Allama Iqbal Open University. Their study revealed that the satisfaction of a student can be determined from his level of pleasure as well as the effectiveness of the education that the student experiences. In this regard, satisfaction can be considered as the act of satisfying a need or desire in achieving a planned goal.

2.3. Academic Performance

Schools, colleges and universities have no value without students. Students are the most important asset for any educational institute. The social and economic progress of the country is directly linked with student academic performance. The students' academic achievement plays a significant role in producing the best quality graduates who will become great leaders and manpower for the country thus responsible for the country's economic and social development (Ali et al, 2009). Student academic performance measurement has received considerable attention in previous research, it is challenging aspects of academic literature, and science student performance are affected due to social, psychological, economic, environmental and personal factors. These factors strongly influence student performance, but these factors vary from person to person and country to country (Mushtaq & Nawaz Khan, 2012).

Students' academic performance in higher education is affected by various socioeconomic, psychological, and environmental factors (Hijazi & Naqvi, 2006). It is always in the best interest of educators to measure students' academic performance. This allows them to evaluate not only students' knowledge levels but also the effectiveness of their own teaching processes, and perhaps, provide a gauge of student satisfaction (Martirosyan, Saxon, & Wanjohi, 2014).

Mesfin and Alex (2022) stated that beyond the quality of schools, various personal and family factors, including socioeconomic factors, English ability, class attendance, employment, high school grades, and academic self-efficacy have been proposed to influence academic performance. Besides, other factors, i.e., teaching skills, study hours, family size, and parental involvement have an association with academic performance as well. A cohort study among university students in Australia concluded that ageing does not impede academic achievement. A secondary data analysis among fifth-grade students in Colorado showed that eating breakfast, normal body mass index, adequate sleep, and ≥ 5 days' physical activity per week was significantly associated with higher cumulative grades.

2.4. Factors affecting the Academic Performance of Student

A number of studies have been carried out to identify and analyse the numerous factors that affect students' academic performance in various centres of learning. Their findings identify students' effort, previous schooling (Siegfried & Fels, 1979; Anderson & Benjamin, 1994), parents' education, family income (Devadoss & Foltz, 1996), self motivation, age of student, learning preferences (Aripin, Mahmood, Rohaizad, Yeop, & Anuar, 2008), class attendance

(Romer, 1993), and entry qualifications as factors that have a significant effect on the students' academic performance in various settings.

Diaz (2003) reported that most studies focus on the three elements that intervene, that is, parents (family causal factors), teachers (academic causal factors), and students (personal causal factors), though the influence on academic performance varies from one academic environment to another, from one set of students to the next, and indeed from one cultural setting to another. Parent involvement is another factor that has been consistently related to a child's increased academic performance (Hara & Burke, 1998; Hill & Craft, 2003; Marcon, 1999; Stevenson & Baker, 1987). While this relation between Parent involvement and a student's academic performance is well established. Zappala (2002) found out that school environments and teachers' expectations from their students have a strong influence on students' performance.

3. Methodology

3.1. Research Question

Relationship between Satisfaction and Performance

Due to the issue paper of Student satisfaction (2018) Whether the dimensions were considered together or independently, curriculum, teaching, and analytical skills consistently exerted the most influence on satisfaction ratings. The relationship between curriculum and overall satisfaction was the strongest of the six dimensions, closely followed by teaching and analytical skills. Communication skills - that is, the opportunities former students were given to develop the ability to speak, write, and read well - were not as strongly related to the satisfaction measure. Likewise, personal growth and social skills were less likely to affect overall satisfaction.

A survey at Kwantlen Polytechnic University in 2003 proved that Certain characteristics of former students were associated with a high degree of reported satisfaction; for example, females and older students tended to report somewhat higher levels. Also, students who attended post-secondary institutions outside of the Lower Mainland and those in nursing or health-related programs were more likely to give high ratings for satisfaction. Although knowing student characteristics may not directly help institutions to improve student assessments, it is important to examine their influence in the mix of factors that affect satisfaction ratings.

3.2. Survey

A questionnaire was created consisting of 3 main parts: Demographic Information, Student Satisfaction and Academic Performance. The main part is Student Satisfaction is designed to understand the level of satisfaction. The level of student satisfaction is analysed over 5 big main factors, each including several small categories. The main big factors surveyed include: Facility, Extracurricular activities, Student Support, Syllabus and Course Availability. The factors and categories are developed based on the aspect of the authors group, the previous researches mentioned in Literature Review and the situation in which students pay interest. The survey is conducted online through Google Form.

Students are asked to evaluate each category of each factor on a Likert Scale of 5 degrees. These scales range from a group of categories - least to most - asking people to indicate how

much they agree or disagree, approve or disapprove. The authors group developed a Likert Scale for code from 1 to 5 representing the level of satisfaction Very dissatisfied – Dissatisfied – Neutral – Satisfied – Very satisfied respectively.

Academic Performance is evaluated based on Student' Grade Point Average (GPA), which is the main point that each and every student owns themselves. Student's cumulative GPA (a measure of academic performance) was obtained using an open- ended question requesting their GPA at the time they completed the questionnaire on a scale ranging from 0 to 4. The GPA was self reported. Moreover, for discriminant analysis, student's academic performance was categorized as high GPA achiever group with GPA 3.2 and above, 2.5 - 3.19 as medium, whereas those with GPA below 2.5 were categorized as low GPA group. The code representing students' GPA varies from 1-4 for each group: 3.6 – 4.0, 3.2 – 3.59, 2.5 – 3.19 and < 2.5 respectively.

3.3. Sampling Size and Sampling Method

- Identify the Target population

Target population refers to the group of individuals or objects to which researchers are interested in generalizing the findings. In the survey, the population is all of the students studying in Foreign Trade University in Hanoi.

- Select a sampling frame:

The sampling frame includes all formal university students who are studying full time in Hanoi Foreign Trade University.

- Specify the sampling technique

Sampling will be done through non-probability techniques. Non-probability sampling is a method of selecting units from a population using a subjective method. Non-probability sampling techniques are a conducive and practical method for researchers deploying surveys in the real world. Getting responses using non-probability sampling is faster and more cost-effective than probability sampling. The respondents respond quickly as compared to people randomly selected as they have a high motivation level to participate.

A number of 151 responses were collected from freshmen, sophomore, junior and senior students of different majors of Foreign Trade University. According to the survey, approximately 68% of students are female, more than 45% are junior students, and nearly 15% of the students major in Business Administration.

3.4. Data Analysis Technique

The purpose of the data analysis step is to figure out the relationship between the student satisfaction and academic performance, and find out which elements contribute the most to the model. The dependent variable would be GPA, and the rest of student satisfaction data would be the independent variables.

Tools for Data Analysis include Python and Stata. The procedure of finding out the results of the survey consists of 3 steps. First, with each of 5 big factors, we take the average score of all the small categories belonging to it, called "Group Average Satisfaction Score". Then, we build a logistic regression model by Decision Tree Classifier in Python to analyze the relationship

between the student satisfaction and academic performance, then get the features important score to list out the most significant factor(s) contributing to the whole model. Feature importance refers to a class of techniques for assigning scores to input features to a predictive model that indicates the relative importance of each feature when making a prediction. And finally, we dig into the two factors having the strongest influence on overall student GPA to identify which small categories have meaning for student academic performance by building an order logistic regression in Stata. Ordered Logistic Regression (also called the logit model or cumulative link model) is a sub-type of logistic regression where the Y-category is ordered, which is used when the dependent variable has a meaningful order, and more than two categories (or levels). In this research, the dependent variable “GPA” has 4 levels sorted in descending order.

4. Results

4.1. Demographic Respondents

A number of 151 responses were collected from freshmen, sophomore, junior and senior students of different majors. Below is table 3 summarising key demographic characteristics of students used in the survey.

According to the table, approximately 68% of students are female, while more than 31% of them are male. Nearly half of the targeted students are junior students with the particular number being 45.03%. The survey is not participated by many senior students, only 7.95% of all the respondents are senior. And the major with the greatest number of students is Business Administration. Nearly 15% of the students major in Business Administration. Regarding the students’ academic performance, it is represented by GPA. From the 4 categories in GPA, almost 47% of the participants have their GPA to be at the Good level (3.2 - 3.59), which is a good sign. Only 5.30% of all respondents have their GPA below 2.5.

Table 1. Demographic Summary (Observations = 151)

Gender	Frequency	Percentage
Female	103	68.21%
Male	48	31.79%
Class Level	Frequency	Percentage
Freshmen	29	19.21%
Junior	68	45.03%
Senior	12	7.95%
Sophomore	42	27.81%
GPA	Frequency	Percentage
3.6 - 4.0	43	28.48%
3.2 - 3.59	70	46.36%

2.5 – 3.19	30	19.87%
< 2.5	8	5.30%

Major	Frequency	Percentage
Accounting - Auditing	10	6.62%
Business Administration	22	14.57%
Business Linguistics	10	6.62%
Economics/Business Law	17	11.26%
Finance and Banking	20	13.25%
International Business	19	12.58%
International Business Economics	23	15.23%
International Economics	8	5.30%
Marketing	7	4.64%
Other	15	9.93%

Source: Pivot Table Analyse in Excel

4.2. Findings of Student Satisfaction

Student Satisfaction Average Score is calculated to take the mean score of each big factor. The bigger the score is, the more satisfied respondents are. As shown in table 2 below, it can be seen that students were most satisfied with extracurricular activities with the score of 4.54. Besides, facility is the most dissatisfactory variable with the score 3.97. The three variables “Student Support”, “Syllabus” and “Course Availability” have the average satisfaction score nearly the same with the scores varying from 4.00 to 4.09. Overall, students tend to have a satisfactory feeling rather than dissatisfaction. All scores are above the middle point 3.5 satisfaction level and the Mean Satisfaction Score of all 5 factors is 4.12/5. Regarding standard deviation of the 5 big factors, it can be seen that “Student Support” variable has the most spreading data to the mean score with the standard deviation of .82, while “Syllabus” and “Facility” variables have the data focusing more on the mean score with the standard deviation of around .77. The standard deviation of the 5 factors has the difference, but the distance of standard deviation does not widely vary.

Table 2. *Group Average Satisfaction Score*

Factor	Average Satisfaction Score	Standard Deviation
Facility	3.97	.78
Extracurricular	4.54	.80

Student Support	4.09	.82
Syllabus	4.02	.77
Course Availability	4.00	.79
Mean Score	4.12	

Source: Calculation by Excel

Facility

“Facility” is the factor that has the lowest average score in the whole model. Analyzing six small categories in variable “Facility”, it can be seen that students have satisfied the most with the quality of classroom (the mean score is 4.26), while the parking areas receive the lowest score for satisfaction (the mean score is 3.39). The difference between the best and the worst score here is .87. The standard deviation between categories does not vary greatly. Overall, students have the tendency of satisfaction rather than dissatisfaction. However, the number “3” standing for status “Neutral” is also the median of the data. Because of that, students seem not to be sure about their choice, which is not a good sign. Table 3 below shows the detailed results of the survey conducted.

Table 3. *Satisfaction Score for Facility*

Category	Average Score	Median	SD
Quality of classroom	4.26	3	1.01
Parking Areas	3.39	3	1.14
Canteen	3.79	3	1.01
Functional room	4.09	3	0.90
Library	4.19	3	1.00
Overall campus	4.11	4	1.13
Mean Score	3.97		

Source: Calculation by Excel

Extracurricular activities

Variable “Extracurricular activities” has the highest overall mean score of satisfaction among 5 factors, with student satisfaction score being highest in “Activities of club, student federation” (4.63), and being lowest in “Sport Events” (4.32). The distance of score can be considered insignificant. All the mean scores in this factor are higher than those of the “Facility” factor. It can be explained in the way students have chosen the score for the factor, which the median is 4 (Satisfied). The standard deviation is also lower than that of the “Facility” factor. In this factor, no category has a satisfaction score below 4.3. All data is shown in Table 4 below.

Table 4. Satisfaction Score for Extracurricular activities

Category	Average Score	Median	SD
Activities of club, student federation	4.63	4	0.96
Events with professional, academic, career-oriented purpose	4.59	4	1.01
Entertainment Events	4.61	4	0.99
Voluntary Events	4.57	4	0.97
Sports Events	4.32	4	0.94
Competitions	4.52	4	0.96
Mean Score	4.54		

Source: Calculation by Excel

Student Support

“Student Support” is the second potential factor with an overall average score is 4.09, contributed most by the support from the teacher (4.49) and least by the support of Department of Training Administration (3.88). The gap here is quite significant (.61). Overall, the answer from respondents does not spread out from the mean score as much. Numbers regarding to “Student support” are described below in Table 5.

Table 5. Satisfaction Score for Student Support

Category	Average Score	Median	SD
Teacher	4.49	4	0.90
Department of Training Administration	3.88	4	1.09
Department of Communications and External Relations	4.04	3	0.95
Department of Student Affairs	3.93	3	0.99
Student Support Centre	4.09	3	0.97
Mean Score	4.09		

Source: Calculation by Excel

Syllabus

Factor “Syllabus” has the smallest difference in the level of satisfaction between categories within: .21 from the best category “Allocation of General Subjects and Major Subjects” (4.14) and the worst category “Allocation for theoretical and practical lessons”. It can be deemed that students also have a neutral tendency when it comes to satisfaction of the syllabus. Table 6 below

contains the information of Satisfaction Score for Syllabus.

Table 6. Satisfaction Score for Syllabus

Category	Average Score	Median	SD
Allocation for theoretical and practical lessons	3.93	3	0.94
Allocation of General Subjects and Major Subjects	4.14	3	0.96
Lesson Duration	4.03	3	0.97
Subject Practical Application	3.99	3	0.85
Mean Score	4.02		

Source: Calculation by Excel

Course Availability

“Course Availability” has 5 small categories to be considered. In this factor, students are satisfied the most with “Subject Arrangements for each Semester” (4.16), and they feel dissatisfied the most with “Study Schedule and Final Exam Schedule” (3.83). The gap here is .33. Although not having any outstanding category, the scores in “Course Availability” are not too low with small standard deviation. The mean, median and standard deviation are all shown in table 7 below.

Table 7. Satisfaction Score for Course Availability

Category	Average Score	Median	SD
Subject Arrangements for each Semester	4.16	4	0.94
Quantity of Class per Subject	3.93	4	1.02
Quantity of Student per Class	4.14	3	0.96
Study Schedule and Final Exam Schedule	3.83	3	0.96
Classroom Arrangement	3.93	3	1.02
Mean Score	4.00		

Source: Calculation by Excel

4.3. Findings of Relationship between Student Satisfaction and Academic Performance

Feature Importance Score of 5 Student Satisfaction Factors

A logistic regression is built to figure out the relationship between student satisfaction and academic performance, with GPA is the dependent variable, and the rest variables are all independent variables to the GPA.

The Decision Tree Classifier shows the results of the model to assess the predictive ability of the mean satisfaction scores for the 5 main factors of student satisfaction and the dependent variable Student GPA. The feature importance score was based on the model coefficient and feature weight to evaluate the significance of each independent variable in the complex logistic regression. The result of step 2 is shown below in Table 8.

Table 8. *Result of Feature Important Score in Decision Tree Classifier Regression*

Features	Feature Importance Score
Syllabus	.264220
Course Availability	.232207
Facility	.203212
Extracurricular	.157143
Student Support	.143217

Source: Calculation by Python

It can be seen that the variable “Syllabus” is the most influential factor with the score of .26, followed by variable “Course Availability” with the score of .23; though these two factors have average satisfaction scores in the middle level (Table 1). It can not be concluded that the other three factors have no influence in the model. In the scope of the research, only the most 2 powerful factors are analysed. Therefore, these two variables “Course Availability” and “Syllabus” would be analysed further in step 3 in order to dig in the particular elements that have the most significant meaning.

Empirical Findings of the most affected factors to the relationship of Student Satisfaction and Academic Performance

Regarding the variable “Syllabus”, it describes student satisfaction with 4 small elements: Allocation for theoretical and practical lessons, Allocation of General Subjects and Major Subjects, Lesson Duration and Subject Practical Application explaining the big factor. An order logistic regression was built in Stata. Ordered Logistic Regression (also called the logit model or cumulative link model) is a sub-type of logistic regression where the Y-category is ordered, which is used when the dependent variable has a meaningful order, and more than two categories (or levels). In this research, the dependent variable “GPA” has 4 levels sorted in descending order. The model would interpret the relationship between each variable with the dependent variable in order to conclude whether the independent variables have meaning in the model.

The order logistic regression gives the result as below. Model has the likelihood ratio chi-square of 22.22 and Prob > chi2 equals .0002 meaning that at the 5% significance level the outcome can be explainable and the model is significant. Particularly, among 4 elements, “Allocation of General Subjects and Major Subjects” appeared to be the strongest predictors with the most powerful coefficient of -.58 and were significant predictors of student satisfaction at $p < .05$. The negative sign of coefficient shows that the more satisfied students get about allocation

of general subjects and major subjects, the better performance they have. Table 9 below shows the result of the first ordered ordinal regression model.

Table 9. *Ordered Ordinal Regression Model Result between Student Satisfaction about Syllabus and Academic Performance*

```
Iteration 0:  log likelihood = -179.81153
Iteration 1:  log likelihood = -168.90363
Iteration 2:  log likelihood = -168.69972
Iteration 3:  log likelihood = -168.69929
Iteration 4:  log likelihood = -168.69929
```

```
Ordered logistic regression      Number of obs   =      151
                                LR chi2(4)            =      22.22
                                Prob > chi2            =      0.0002
Log likelihood = -168.69929      Pseudo R2        =      0.0618
```

	GPA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Allocationfortheoreticalandp		-.0925502	.2553921	-0.36	0.717	-.5931094	.4080091
AllocationforGeneralandMajor		-.5821664	.2737441	-2.13	0.033	-1.118695	-.0456378
LessonDuration		.0468957	.1969012	0.24	0.812	-.3390235	.4328149
SubjectPracticalApplication		-.2956113	.2513097	-1.18	0.239	-.7881694	.1969467
	/cut1	-4.18015	.79539			-5.739085	-2.621214
	/cut2	-1.949362	.7344768			-3.38891	-.5098136
	/cut3	.028844	.7518835			-1.444821	1.502509

Source: Calculation by Stata

Variable “Course Availability” includes 5 small elements: Subject Arrangements for each Semester, Quantity of Class per Subject, Quantity of Student per Class, Study Schedule and Final Exam Schedule, and Classroom Arrangement. The ordered ordinal regression model shows the result of the relationship between the Student Satisfaction about Course Availability and Academic Performance. At the 5% significance level, estimated coefficients are statistically significant if $p_value < 5\%$. Therefore, variables having statistical significance are Subject Arrangement (for each Semester) with score of .042 and Classroom Position Arrangement with $P>|z|$ equal 0.000. These two elements also have the best Coef. to describe the meaning of the model, equal to -.46 and -.95, respectively. Comparing these two variables, Classroom Arrangement seems to explain better due to more powerful coefficient and better p-value. The negative sign of coefficient shows that the more satisfied students get, the more efficient their performance they have. Overall, The model’s likelihood ratio chi-square of 31.07 with a p-value of .0000 tells us that our model as a whole is statistically significant, as compared to the null model with no predictors. Below is table 10 that shows the result of the second ordered ordinal regression model.

Table 10. *Ordered Ordinal Regression Model Result between Student Satisfaction about Course Availability and Academic Performance*

```
Iteration 0:  log likelihood = -179.81153
Iteration 1:  log likelihood = -164.72556
Iteration 2:  log likelihood = -164.27685
Iteration 3:  log likelihood = -164.27517
Iteration 4:  log likelihood = -164.27517
```

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Ordered logistic regression      Number of obs   =      151
                                LR chi2(5)            =      31.07
                                Prob > chi2            =      0.0000
```

5. Implications and Conclusion

5.1. Implications

The results of this study point toward key implications for institutional policy. It is to emphasise the importance of differentiating the effects of various aspects of satisfaction across types of students to optimise the value of student satisfaction assessment. Raw data collection can be effectively divided and sorted based on the student level of education and field of study. The requirements for each category and selective student groups can acquire various needs on syllabus modifications, facilities, student services, student support, or even finance. By tailor the decision making process based on these various considerations can lead to more powerful and complete implementation of the study.

In addition to these policy implications of our findings, there are implications for practice that can affect student satisfaction and persistence. Our findings have implications for practice that can affect student happiness and persistence in addition to these policy implications. Practices in the first year should be carefully constructed to show a concern for students' welfare and to introduce students to the community possibilities of the university as well as their major. These institutional responses should be tailored by class level. Creating learning communities for first-year students, placing instructors in first-year classes who engage students in the learning process and connect with them on a personal level, and providing opportunities for students to get involved in organisations and activities are all ways that institutions can foster a sense of community beginning in the first year.

The campus environment is still crucial for student retention in the second year, but instruction quality and advising become more essential than they were in the first year. Practices in the sophomore year should support students in focusing on their future, especially when they are working with advisors to help them establish educational and career goals. Sophomores are more likely to feel like they belong on campus and are more likely to be satisfied with both instruction and advising when advisors and instructors are able to assist students relate what they are learning to the future they foresee for themselves. Through such actions, the institution may be positioned as the place where a student's idealised future can come true.

The trajectory started in earlier educational stages can be continued during practices in the junior year. Students specifically need teacher assistance during their junior year to turn their sophomore vision into reality in time for graduation. Academic success is a prerequisite for success in one's chosen major; students are almost twice as likely to continue their studies into their senior year if their junior year GPA is better. Academic success is closely related to instructor and advisor satisfaction, so institutional practices that intentionally link juniors to faculty through research partnerships, mentoring, advising, and making themselves available outside of class for academic discussions have the greatest potential to affect persistence from the junior to the senior year.

5.2. Conclusion

The main objectives of the study were to find out the role of satisfaction on students' academic performance, to investigate the relationship between satisfaction and academic performance as well as the other factors that contribute to academic performance. The results of this study show that specific measures of student satisfaction, as measured by scale scores on the Student Satisfaction Survey, significantly contribute to the explanation of variation in students' academic performances, in addition to the explanation provided by the students' demographic characteristics and the characteristics of the field they attend. In conclusion, the study found that satisfaction promotes and enhances the students' academic achievements as well as student-school engagement. The detailed contribution of distinct factors can be described as follows.

The key determinants of student satisfaction include: a) syllabus; and b) course availability. Students want an academic schedule that is well allocated and arranged based on their academic capabilities and personal workload. This arrangement also includes the consideration of the priority of general majors completion before the extension of major subjects and other lectures. Moreover, in one allocated period of time students prefer the balance of mathematics and literature and thesis-based subjects. The results also show that the university staff also need to arrange the course availability in accordance with the large number of students' requests each semester. The fundamental and prerequisite courses should be arranged and prioritised for selective groups of students each year as this can be affected to their further planned studying journey in following semesters.

Making the college experience enjoyable is also important and should not be overlooked. This refers to the Extracurricular activities and School facilities. While extracurricular activities promote students' personal interests and promote student engagement with improved soft skills, school facilities promote studying efficiency and better their experiences at campus. Students spend four to five years or longer pursuing a college degree. The level of overall satisfaction with their college experience is enhanced if they can enjoy this experience. Enjoying their time in the classroom, or enjoying various social activities on campus, should lead to a higher level of student satisfaction, thus academic performances.

6. Suggestion and Recommendation

The results of this study have strong recruitment and retention implications for a number of departments and student service units across campus. Beyond working collaboratively to ensure a positive experience for all students, it would be strategic, for instance, for an institution's admissions office to work closely with their support units and alumni relations offices in identifying ways to include current international students, registered student organisations, and alums in their recruitment efforts overseas.

In this context, it is important that institutions capitalise on their existing campus support services and resources as they create strategic and collaborative engagement opportunities, both in and out of the classroom. Staff from student affairs, residence life and housing, dining services, the orientation office, career services, counselling centres, transportation services, academic departments, etc., must work together to support the positive experiences of students as well as the educational mission of the institution as a global community.

The academic setting, in the form of in-class teaching, studies, and facilities, must remain central to international students' university experience. This includes the academic and pedagogic quality of teaching, expertise of faculty and academic staff, physical infrastructure of classrooms and labs, technology, academic support services, and the social climate within the learning environment. From a marketing and recruitment perspective, administrators must be aware of the impact that learning might have on the propensity to recommend their institution to others and, in turn, be intentional at showcasing relevant academic experiences, achievements, stories, and rankings to prospective students.

With the increasing number of international students in classrooms, faculty and academic staff must also be encouraged to design courses that are conducive for learners across cultures and from different systems of education. This might include adjusting teaching and communication methods to facilitate the academic relationship between international students and faculty. There could also be an implication for how universities recruit, train, and retain qualified faculty and teaching assistants that can promote the quality of learning and academic success. Institutions must look at career planning and development for international students not only as a subsidiary support service but also with a focus on having it integrated into the curricular and classroom experience.

References

- Aldemir, C. and Gulcan, Y. (2004), "Students Satisfaction in Higher Education: A Turkish Case", *Higher Education Management and Policy*, 16(2), 109-122.
- Awang, M. M. (2012). An exploration of strategies used by Malaysian secondary teachers for promoting positive behavior, professionals and pupils' perspectives. Doctoral Dissertation. Nethergate, Dundee: University of Dundee.
- Belanger, F., & Jordan, D. H. (2000). *Evaluation and implementation of distance learning: Technologies, Tools, and Tech-niques*. Hershey, PA: Idea Group Publishing.
- Brown, R. (n.d.). Extracurricular activity: How does participation encourage positive youth development? (Fact Sheet 99-32). Retrieved November 15, 2008, from: www.unce.unr.edu/publications/files/cy/other/fs9932.pdf
- Demaray, M. K., Malecki, C. K., Davidson, L. M., Hodgson, K. K., & Rebus, P. J. (2005). The relationship between social support and student adjustment: A longitudinal analysis. *Psychology in the Schools*, 42(7), 691-706.
- Denson, N., & Zhang, S. (2010). The impact of student experiences with diversity on developing graduate at-tributes. *Studies in Higher Education*, 35(5), 529–543.
- DeShields Jr., O. W., Kara, A. and Kaynak, E. (2005), "Determinants of business student satisfaction and retention in higher education: applying Herzberg's two factor theory", *International Journal of Educational Management*, 19(2), 28-139.
- Dhaqane Master of MBA, Open University, Malaysia, Lecture, M. K. (2016). Satisfaction of Students and Academic Performance in Benadir University. *Satisfaction of Students and Academic Performance in Benadir University*, 7(24), 2222 –288X.

- Eccles, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues*, 59(4), 865-889.
- Gilboy, M. B., Heinerichs, S., & Pazzaglia, G. (2015). Enhancing student engagement using the flipped class-room. *Journal of Nutrition Education and Behavior*, 47(1), 109- 114.
- Gilman, R. (2004). Structured extracurricular activities among adolescent findings and implications for school psychologists. *Psychology in the Schools*, 41(1), n.p.
- HASSANBEIGI, A. & ASKARI, J. (2010) A study of the most important risk factors of motivational deficiencies in university students. *Procedia - Social and Behavioral Sciences*.
- Hepplestone, S., Holden, G., Irwin, B., Parkin, H. J., & Thorpe, L. (2011). Using technology to encourage student engagement with feedback: A literature review. *Research in Learning Technology*, 19(2), 117-127.
- Karlin, R. A., Rosen, L. S., and Epstein, Y. M. (1979). Three into Two doesn't go: A Follow-up on the Effects of Overcrowded Dormitory Rooms. *Personality and Social Psychology Bulletin*, 5(3), 391-395.
- KÄRNÄ, S., JULIN, P. & NENONEN, S. (2013) User satisfaction on a university campus by students and staff. *Intelligent Buildings International*, 5, 69 -82.
- LEWIS, M. (2000) Where children learn: Facilities conditions and student test performance in Milwaukee public schools. Scottsdale, Council of Educational Facility Planners International.
- Mai, L. (2005), "A Comparative Study between UK and US: The Student Satisfaction in Higher Education and its Influential Factors, *Journal of Marketing Management*, 21, 859-878.
- Martirosyan, N., Saxon, D., & Wanjohi, R. (2014). Student Satisfaction and Academic Performance in Armenian Higher Education. *American International Journal of Contemporary Research*.
- Mayo, D. T., Helms, M. M., and Codjoe, H. M. (2004), "Reasons to remain in college: a comparison of high school and college students", *The International Journal of Educational Management*, 18(6), 360-367.
- Mushtaq, I., & Nawaz Khan, S. (2012). Factors Affecting Students' Academic Performance. *Global Journal of Management and Business Research*.
- Najib, N.U.M., Yusuf, N. and Abidin, N.Z. (2011a), "Student residential satisfaction in research universities", *Journal of Facilities Management*, Vol. 9 No. 3, pp. 200-212. Najib, N.U.M., Yusuf, N. and Osman, Z. (2011b), "Measuring satisfaction with student housing facilities", *American Journal of Engineering and Applied Sciences*, Vol. 4 No. 1, pp. 52-60.
- Navarro, M. M., Iglesias, P. M. and Torres, R. P. (2005), "A New Management Element for Universities: Satisfaction with the offered courses", *International Journal of Educational Management*, 19(6), 505-526.

- NGUYEN, N. & LEBLANC, G. (2001) Image and reputation of higher education institutions in students retention decisions. *International Journal of Educational Management*, 15, 303-311.
- Ozben, S. (2013). Social skills, life satisfaction, and loneliness in Turkish university students. *Social Behavior and Personality: An International Journal*, 41(2), 203-213.
- Palacio, A. B., Menesses, G. D., and Perez Perez, P. J. (2002), "The configuration of the university image and its relationship with the satisfaction of students", *Journal of Educational Administration*, 40(5), 486-505.
- PRICE, I., MATZDORF, F., SMITH, L. & AGAHI, H. (2003) The impact of facilities on student choice of university. *Facilities*, 21, 212.
- Tadese, M., Yeshaneh, A. & Mulu, G.B. Determinants of good academic performance among university students in Ethiopia: a cross-sectional study. *BMC Med Educ* 22, 395 (2022).
- TANNER, C. K. (2009) Effects of school design on student outcomes. *Journal of Educational Administration*, 47, 381-399
- Yu, Y. and Dean, A. (2001), "The contribution of emotional satisfaction to consumer loyalty", *International Journal of Service Industry Management*, 12(3), 234 -250.