CAPTURING LIFETIME VALUE IN HIGHER EDUCATION

Is There a Relationship Between Student Satisfaction and Academic Performance?

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Abstract

Capturing a significant lifetime value in higher education is contingent to student satisfaction. Earlier research found a significant relationship between student satisfaction and the learning outcome (Fawaz & Samaha, 2021). This paper presents results of a preliminary descriptive study, exploring relationships between student satisfaction and, students' academic performance, measured in grade point average [GPA] and perceived attainment of learning outcomes. The study has not detected significant relationships between the noted variables across various programs of study, i.e., positive correlation between students' perceived achievement of learning outcomes and their overall GPA was not detected, nor were there correlations between satisfaction with the program of study and perceived achievement of learning outcomes across all programs of study investigated, nor was a pattern detected between academic success in terms of grades, and satisfaction with the program of study. These findings suggest that some of our preconceptions about sources of academic success and academic content, and their relationship, need to be investigated further.

Key words: lifetime value, student satisfaction, academic performance

1. Introduction

As numerous generations of students in marketing courses were taught from Philip Kotler's textbooks on marketing: the final step in the marketing process is capturing value from customers in return (Kotler & Armstrong, 2018). One of the key concepts in the process of managing capturing value from customers is the customer lifetime value. The customer lifetime value is an estimate of the value of all purchases a customer will make over their lifetime.

Although higher education is a specific product which after completion is rarely sought after again, the customer lifetime value is an important concept, in particular for market oriented higher education institutions [HEIs]. Customer lifetime patronage in higher education systems can be viewed from many different angles. Some of them include enrolling the next level degree program from the same institution, enrolling at different life-long-learning programs, giving back to the alma mater, for example student mentoring, guest lectures or donations, offering job opportunities to students and graduates etc. One additional form of alumni support is a positive word-of-mouth about their experience at the HEI and readiness to recommend their HEI to potential students, as well as fellow alumni for potential job opportunities.

For any of those support forms to occur the key is that students need to gain a positive experience during their studies. Student satisfaction is a complex, multilayered and much researched concept (Letcher & Neves, 2010; Rahman et al., 2021), so to no surprise, there is no single adopted model of student satisfaction. Also, since students as consumers change with time, so do the detriments of their satisfaction. Future oriented HEIs are looking to find ways to keep offering an excellent service and to stay in tune with student satisfaction, its elements and high satisfaction levels (Narad & Abdulah, 2016).

A variety of research studies revealed a significant relationship between student satisfaction and the learning outcome (Fawaz & Samaha, 2021). As a preparation of a longitudinal study, this study focused on exploring the relationship between students' academic performance and their satisfaction with their higher education experience. The context of the study is a Croatian higher education institution, in which students pay tuition for their studies. Growing market competition and challenging demographic circumstances in Croatia and the region make exploring this topic relevant.

Aim of this study is to investigate the relationship between students' academic performance, viewed as students' perceived achievement of student or program learning goals [PLOs] and their overall (cumulative) grade point average [GPA] and their satisfaction with studies at the end of their undergraduate studies.

The paper continues with a description of the theoretical framework and hypothesis development.

2. Theoretical framework and hypothesis development

Observing the higher education from a market perspective, higher education institutions are competing on the service market. In this context, students can be considered as customers paying for the educational service.

Moreover, looking at the type of service that the higher education is, students are not the passive observers, but they actively participate in shaping the service and impact its delivery (Haverila et al., 2021). So, even though that students influence the service that they as customers receive, ensuring the service quality resides on the service providers, the HEIs. Providing an excellent quality service is a path to happy customers (Alzamel, 2014; Narad & Abdulah, 2016).

According to ServQual model (Parasuraman et al., 1985, 1988; Zeithaml, 1993, 1996), service satisfaction occurs when perceived service or performance meets or exceeds the customers' expectations and dissatisfaction occurs when the gap between performance and expectations is negative. From the student satisfaction perspective, students are satisfied if educational service quality meets or exceeds their expectations. From the HEI perspective, this translates into quality of service needing to exceed expectation, as merely meeting expectations is not enough to ensure sustainable business operations for a market participant, in particular one on a competitive market.

In order to sustain operations, many HEIs are actively measuring and monitoring student satisfaction and using the results to further improve their educational service quality (Letcher & Neves, 2010; Muhsin et al., 2019). This is evidence of a good practice, as student satisfaction is considered a vital precondition for prosperity and future success of HEIs (Narad & Abdulah, 2016).

In measuring student satisfaction, many studies focus on several aspects, while there are only a few that are comprehensive (i.e., Haverila et al., 2021). Another dimension that induced the difference in researchers' opinions is whether student satisfaction should be about the educational process or the process outcome (Letcher & Neves, 2010). Rapert at al. (2004) found that quantitative student satisfaction surveys are helpful in evaluating the service quality, but that they are not informative enough to allow a full insight to the HEI offering. Additionally, Rapert at al. (2004) distinguished between assessing the process quality attributes and actual product or functionality quality. They confirmed that for a more comprehensive insight into student satisfaction and input to the decision-making process at HEIs, analysis of functional quality is also needed. The next question that presents itself is how to measure the functional quality or the service outcome. Actual results or outcome are rarely used, mostly due to poor data availability, so perceived results or outcomes are used more frequently (i.e., Vaculíková, 2018; Gopal et al., 2021). In order to expand the knowledge in this area, authors in this study test the relationship between student satisfaction, and service outcomes, measured by both perceived and actual results, using perceived achievement of program learning outcomes (Hein, 2019) and students' cumulative undergraduate GPA (York, Gibson & Rankin, 2015; Hein et al., 2019; Dokuka, Valeeva & Yudkevich, 2020; Wang et al., 2022).

In this study, actual student satisfaction was measured as satisfaction with the overall study experience in an undergraduate program, as well as academic experience that is comprised of theoretical knowledge and practical skills gained (Letcher & Neves, 2010). Haverila et al. (2021) indicated that the HEIs' task is to provide students with competencies and skills, hence supporting testing the satisfaction in knowledge and skills.

The European Higher Education Area uses expected competences as foundation for curriculum building and establishing its targeted learning outcomes. Operational components of the curriculum are targeted program learning outcomes, associated courses and course learning outcomes. Meeting course learning outcomes is assessed through the evaluation of student work in different course activities. Assessing PLOs too is a part of a comprehensive program assessment procedure, whose ultimate goal is to ensure the continuous improvement.

Assessing students PLOs throughout their studies has limited value, for example to track progress on achieving the PLOs through the curriculum. Its full significance comes through if assessed at the end of the studies, upon program completion – graduation. This resulted in a practice to check student satisfaction through senior exit surveys, which can include assessment on achieving PLOs too. Various tests could be employed. A simple one is to ask graduates how well they have mastered their program of study knowledge and skills – evaluate their perceived achievement of learning outcomes (perceived results or outcomes). As suggested by Haverila et al. (2021), it is needed to include program goals into student satisfaction surveys. Hence, relationship between student satisfaction and perceived achievement of LOs was explored in this study.

As an actual educational service result, academic performance indicator or outcome, a cumulative undergraduate GPA (Aitken, 1982; York, Gibson & Rankin, 2015; Hein et al., 2019; Dokuka, Valeeva & Yudkevich, 2020; Wang et al., 2022). was used in this study. According to Aitken (1982), GPA was the most important variable in determining student satisfaction. Subsequently, the overall GPA was used in this study as the second academic performance measure.

Resulting from the analysis, three hypotheses were constructed:

H1: There is a positive correlation between students' perceived achievement of learning outcomes and their overall GPA.

H2: Higher satisfaction with the program of study is associated with a higher level of learning outcomes achievement perception.

H3: Students with higher GPAs will report higher levels of satisfaction with their study programs.

3. Method

This preliminary descriptive study was conducted in preparation for a longitudinal study investigating the relationship between students' perceived achievement of learning outcomes, their satisfaction with the program of study, and their overall (cumulative) GPA at the close of their undergraduate studies.

3.1. Instrument and Participants

Questionnaire was distributed to a population of graduating seniors in three different study programs in a private college, as an exit survey examining their level of satisfaction with the program of study, college services offered by extant departments, perceived achievement of program level learning outcomes, and cumulative GPA at the time of graduation. The data was collected in Spring of 2023. Cumulative GPA was confirmed through the college database for each participant.

In terms of program of study, 49.7% of participants (*N*=75) were from a business operations-oriented program, 31.1% of participants (*N*=47) were from an information technologies-oriented program and 29 participants (19.2%) were from a management-oriented program of study.

Each set of participants were instructed to answer questions regarding their program level learning outcomes, and items associated to demographics, satisfaction with the program of study, services provided, and cumulative GPA were the same across all groups.

The analysis included 151 valid questionnaires. While names and personal data of the participants was collected, it was not used in analysis, nor is it to be utilized in further studies of the results.

4. Results

4.1. Descriptives

4.1.1. Satisfaction with the program of study

In terms of satisfaction with their respective programs of study, graduating students reported overall high levels of overall satisfaction with their experience (M=4.36, SD=.78), with only two students (1.3%) reporting being very unsatisfied with their overall experience. Results per program of study are presented in Table 1.

Table 1. Reported levels of satisfaction per study program

	Reported level of satisfaction		
Program of study	N (missing)	M	SD
Business operations-oriented	74 (1)	4.46	.73
Management-oriented	29 (0)	4.41	.78
Information technologies-oriented	45 (2)	4.16	.85

Students' satisfaction with the theoretical knowledge and practical skills/abilities acquired in their undergraduate programs are reported in Table 2. and Table 3.

Table 2. Reported levels of satisfaction with theoretical knowledge acquired in the study program.

	Reported level of satisfaction		
Program of study	N (missing)	M	SD
Business operations-oriented	75	4.45	.62
Management-oriented	29	4.52	.63

Information technologies-oriented	46 (1)	4.02	1

Table 3. Reported levels of satisfaction with practical skills/abilities acquired in the study program.

	Reported level of satisfaction		
Program of study	*N (missing)*	*M*	*SD*
Business operations-oriented	73 (2)	4.40	.68
Management-oriented	27 (2)	4.44	.64
Information technologies-oriented	47	4.19	.90

4.1.2. Perceived achievement of learning outcomes per program of study

Perceived achievement of the learning outcomes per programs of study are presented in Table 4., Table 5., and Table 6.

Table 4. Perceived achievement of learning outcomes for business operations-oriented program

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO 7
75N Valid	75	75	75	75	75	75	75
Missing	0	0	0	0	0	0	0
Mean	4.43	4.45	4.31	4.29	4.40	4.51	4.37
Std. Deviation	.661	.722	.753	.818	.771	.623	.749
r_s							
PLO1	1						
PLO2	.619**	1					
PLO3	.725**	.809**	1				
PLO4	.509**	.607**	.680**	1			
PLO5	.486**	.609**	.648**	.727**	1		
PLO6	.671**	.622**	.642**	.626**	.686**	1	
PLO7	.709**	.684**	.814**	.799**	.701**	.759**	1

Note. ** Correlation is significant at 0.01 level.

Table 5. Perceived achievement of learning outcomes for management-oriented program

	PLO 1	PLO2	PLO3	PLO4	PLO5	PL06	PLO 7	PLO8
N Valid	29	29	29	29	29	29	29	29
Missing	0	0	0	0	0	0	0	0
Mean	4.52	4.03	4.34	4.59	4.10	4.24	4.62	4.28
Std. Deviation	.738	.823	.769	.568	.860	.689	.494	.841
r_s								
PLO1	1							
PLO2	.600**	1						
PLO3	.583**	.644**	1					
PLO4	.291	.366	.363.	1				
PLO5	.554**	.535**	697**	.250.	1			
PLO6	.462**	.459*	.651**	.324	679**	1		
PLO7	.313	.391*	470**	.430*	.503**	.410*	1	
PLO8	.374*	.632**	606**	.482**	.517**	.409*	.564**	1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

Table 6. Perceived achievement of learning outcomes for information technologies program

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO 6	PLO7	PLO 8	PLO 9	PLO10	PLO11	PLO12
N Valid	29	31	26	26	31	29	27	27	29	31	29	31
Missing	18	16	21	21	16	18	20	20	18	16	18	16
Mean	3.72	3.74	3.69	3.69	3.68	3.59	3.70	3.70	3.52	3.65	3.59	3.65
Std. Deviation	.455	.445	.471	.471	.475	.501	.465	.465	.509	.486	.501	.486
r_s												
PLO1	1											
PLO2	.807**	1										
PLO3	.790**	.632**	1									
PLO4	.795**	.632**	.707**	1								
PLO5	.519**	.566**	.625**	.816**	1							
PLO6	.573**	.411*	.665**	.843**	.840**	1						
PLO7	.794**	.713**	.810**	.598**	.509*	.458*	1					
PLO8	.767**	.906**	.786**	.589**	.468*	.438*	.790**	1				

PLO9	.559**	.707**	.624**	.559**	.553**	.438*	.354	.649**	1		
PLO10	.639**	.665**	.649**	.548**	.604**	.592**	.582**	.665**	.632**	1	
PLO11	.564**	.714**	.449*	.464*	.490*	.359	.618**	.657**	.603**	.693**	1
PLO12	.485*	.537**	.510*	.607**	.730**	.659**	.438*	.498*	.659**	.919**	.669** 1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

4.1.3. Students' grade point average

Averages for cumulative GPA per program are presented in Table 7.

Table 7. GPA per study program

	Cumulative GPA		
Program of study	*N (missing)*	*M*	*SD*
Business operations-oriented	73 (2)	3.07	.52
Management-oriented	28 (1)	3.08	.56
Information technologies-oriented	43 (4)	3.26	.50

4.2. Hypotheses testing

4.2.1. Correlation between students' perceived achievement of learning outcomes and their overall GPA [H1]

Correlations between perceived achievement of learning outcomes and students' cumulative GPA investigated in the present study are presented in Tables 8, 9 and 10.

Table 8. Correlations between perceived achievement of learning outcomes and cumulative GPA for business operations-oriented program

	GPA	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO 7
r_s								
GPA	1							
PLO1	.085	1						
PLO2	.046	.619**	1					
PLO3	.051	.725**	.809**	1				
PLO4	.013	.509**	.607**	.680**	1			
PLO5	.112	.486**	.609**	.648**	.727**	1		

PLO6.096.671**.622**.642**.626**.686**1

PLO7.085.709**.684**.814**.799**.701**.759**1

Note. ** Correlation is significant at 0.01 level.

Table 9. Correlations between perceived achievement of learning outcomes and cumulative GPA for management-oriented program

	GPA	PLO 1	PLO2	PLO3	PLO4	PLO5	PL06	PLO 7	PLO8
r_s									
GPA	1								
PLO1	-.071	1							
PLO2	.150	.600**	1						
PLO3	.115	.583**	.644**	1					
PLO4	.293	.291	.366	.363.	1				
PLO5	-.178	.554**	.535**	697**	.250.	1			
PLO6	-.136	.462**	.459*	.651**	.324	679**	1		
PLO7	.226	.313	.391*	470**	.430*	.503**	.410*	1	
PLO8	.215	.374*	.632**	606**	.482**	.517**	.409*	.564**	1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

Table 6. Correlations between perceived achievement of learning outcomes and cumulative GPA for information technologies program

	GPA	PLO1	PLO2	PLO3	PLO4	PLO5	PLO 6	PLO7	PLO 8	PLO 9	PLO10	PLO11	PLO12
r_s													
GPA	1												
PLO1	.216	1											
PLO2	.125	.807**	1										
PLO3	.285	.790**	.632**	1									
PLO4	.192	.795**	.632**	.707**	1								
PLO5	.027	.519**	.566**	.625**	.816**	1							
PLO6	.281	.573**	.411*	.665**	.843**	.840**	1						
PLO7	.402*	.794**	.713**	.810**	.598**	.509*	.458*	1					
PLO8	.389	.767**	.906**	.786**	.589**	.468*	.438*	.790**	1				
PLO9	.154	.559**	.707**	.624**	.559**	.553**	.438*	.354	.649**	1			
PLO10	.246	.639**	.665**	.649**	.548**	.604**	.592**	.582**	.665**	.632**	1		

PLO11.103 .564**.714**.449* .464* .490* .359 .618**.657**.603**.693** 1

PLO12.285 .485* .537**.510* .607**.730**.659**.438* .498* .659**.919**.669** 1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

In the present study no significant correlations (positive or negative) were detected between perceived achievement of learning outcomes and cumulative GPA, short of a moderate relationship between perceived achievement on PLO 7 and cumulative GPA attained by students enrolled in information technologies related programs (r_s=.402, p=.047), thus H1 was not supported in the present study. Further follow up assessment may include looking into the nature and student ratings of courses mapped onto PLO7 attainment, to investigate potential differentiating factors for that program learning outcome.

4.2.2. Satisfaction with the program of study and perceived achievement of learning outcomes [H2]

Correlations between perceived achievement of learning outcomes and students' satisfaction [SAT] with the programs of study are presented in Tables 11, 12 and 13.

Table 11. Correlations between perceived achievement of learning outcomes and satisfaction with the program of study for business operations-oriented program

	SAT	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO 7
r_s								
SAT	1							
PLO1	.600**	1						
PLO2	.525**	.619**	1					
PLO3	.599**	.725**	.809**	1				
PLO4	.410**	.509**	.607**	.680**	1			
PLO5	.496**	.486**	.609**	.648**	.727**	1		
PLO6	.627**	.671**	.622**	.642**	.626**	.686**	1	
PLO7	.663**	.709**	.684**	.814**	.799**	.701**	.759**	1

Note. ** Correlation is significant at 0.01 level.

Table 12. Correlations between perceived achievement of learning outcomes and satisfaction with the program of study for management-oriented program

	SAT	PLO 1	PLO2	PLO3	PLO4	PLO5	PL06	PLO 7	PLO8
r_s									
SAT	1								
PLO1	.331	1							
PLO2	.301	.600**	1						

PLO3	.400*	.583**	.644**	1					
PLO4	.077	.291	.366	.363.	1				
PLO5	.220	.554**	.535**	697**	.250.	1			
PLO6	.237	.462**	.459*	.651**	.324	679**	1		
PLO7	.346	.313	.391*	470**.	.430*	.503**	.410*	1	
PLO8	.246	.374*	.632**	606**	.482**	.517**	.409*	.564**	1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

Table 13. Correlations between perceived achievement of learning outcomes and satisfaction with the program of study for information technologies program

	SAT	PLO1	PLO2	PLO3	PLO4	PLO5	PLO 6	PLO7	PLO 8	PLO 9	PLO10	PLO11	PLO12
r_s													
SAT	1												
PLO1	.461*	1											
PLO2	.477**	.807**	1										
PLO3	.403*	.790**	.632**	1									
PLO4	.606**	.795**	.632**	.707**	1								
PLO5	.352	.519**	.566**	.625**	.816**	1							
PLO6	.435*	.573**	.411*	.665**	.843**	.840**	1						
PLO7	.451*	.794**	.713**	.810**	.598**	.509*	.458*	1					
PLO8	.350	.767**	.906**	.786**	.589**	.468*	.438*	.790**	1				
PLO9	.239	.559**	.707**	.624**	.559**	.553**	.438*	.354	.649**	1			
PLO10	.246	.639**	.665**	.649**	.548**	.604**	.592**	.582**	.665**	.632**	1		
PLO11	.378*	.564**	.714**	.449*	.464*	.490*	.359	.618**	.657**	.603**	.693**	1	
PLO12	.285	.485*	.537**	.510*	.607**	.730**	.659**	.438*	.498*	.659**	.919**	.669**	1

Note. ** Correlation is significant at 0.01 level; * Correlation is significant at 0.05 level.

The expected relationship between satisfaction with the program of study and program learning outcomes achievement, i.e., H2 in this study, was fully supported solely for one program of study included in this research, the business operations-oriented program (Table 11). In remaining programs of study, satisfaction with the overall program experience was positively correlated solely with some of the perceived achievement scores (Table 12 and Table 13).

Further research should investigate potential sources of the differences in these relationships in terms of mapping of the program learning outcomes, course evaluations, and academic disciplines of study.

4.2.3. GPA and satisfaction with programs of study [H3]

No significant correlations were detected between cumulative GPA and overall satisfaction with the program of study for all students (N=142; r_s=-.074, p=.381), for students in business operations-oriented program (N=74; rs=-.023, p=.851), management oriented program (N=29; r_s=-.082, p=.667), or information technology program (N=45; r_s=.194, p=.514) respectively.

Therefore, H3 was not supported in the present study.

5. Discussion and conclusion

High level of student satisfaction is a key precondition for sustainability of HEI operations. The present study investigated the relationship between students' academic performance and their satisfaction with their higher education experience.

The findings did not meet the preliminary assumptions and are comparable with Kaniuka and Wynne's (2019) findings. No significant correlations were detected between perceived achievement of learning outcomes and cumulative GPA.

The expected relationship between satisfaction with the program of study and program learning outcomes achievement, i.e., H2 in this study, was fully supported solely for the business operations-oriented program. In two remaining programs of study, satisfaction with the overall program experience was positively correlated solely with perceived achievement scores for only some program learning outcomes. It would be interesting to explore the potential sources of the differences in these relationships in terms of mapping of the program learning outcomes and course evaluations.

Testing relationship between student satisfaction and academic performance measured by the cumulative GPA also found no significant correlations, for any of three study programs. These results are contrary to Letcher and Neves (2010) and suggest that further investigation is needed to better understand the student satisfaction and academic performance mechanism.

The present study had several limitations which should be noted. One unknown variable in this study was students' awareness of their program learning outcomes throughout their studies. With a known level of awareness, the students' perceived program learning outcomes achievement might gain additional value. Additionally, data were collected from one generation of graduates from one HEI, which prevents generalization of findings, but suggests paths for future research.

This niche study provided insights to directions for the future research, including collecting data for more generations over time. An intriguing variable to include in analysis would be intended behavior (Haverila et al., 2021), as the core reason why HEI care about student satisfaction is to encourage their favorable behavior, which is in fact the actual step of capturing value from customers. Interesting dimension to the topic could come from including data on graduates' early career development. Exploring a relationship between students' high school GPA and their academic performance, as well as their satisfaction,

could add clarity to the behavior of students as customers. All the findings and presented suggestions are a valuable input in the construct of the planned bigger longitudinal study.

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