

# Determinants of Undergraduate Students' Academic Performance: The Case of University of Sri Jayewardenepura, Sri Lanka

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**Abstract-** The primary objective of this study was to examine the factors affecting students' academic performance at undergraduate level. The research is conducted based on students of the Faculty of Management Studies and Commerce at the University of Sri Jayewardenepura which is one of the state universities in Sri Lanka. The Faculty of Management Studies and Commerce is one of the largest faculties in the university system and enrolls about 5,000 internal undergraduate students. The faculty offers 12 special degree programs, more than 250 course units covering the range of Management and Accounting related disciplines (Prospectus USJP, 2017). The sample consisted 191 graduate students who were completed their degree program in the year 2016 and 2015 (Academic year 2011/12 and 2010/11). Correlation analysis and multiple regression analysis were conducted as main analytical methods. The result of the correlation analysis showed that there was a positive correlation of past academic performance, proficiency in English, lecture attendance and time spent outside the university on academic performance and negative correlation between internship period and academic performance. The multiple regression analysis concluded that past academic performance, English proficiency, lecture attendance and time spent outside the university are significant factors when evaluating the academic performance. The study analyzed hypothesis test in order to determine whether there is a significant difference exist between intern students' and non-intern students' academic performance. The independent sample T-test was used to test the hypothesis and result found that there is no significant difference exists between interns' and no-interns' academic performance. Study concluded that better understanding of factors affects the performance of students in any given course is must in the process of improving students' academic performance.

**Index Terms-** Academic Performance, Career Achievement, Internship, Undergraduate Students

## I. INTRODUCTION

Education plays a pivotal role in the progress and development of a country. Hence, government invest significant amount on higher education. And most of the developing countries are increasing their university students' enrollment year by year. Sri Lanka as a developing country also increasing the university student enrollment compared with previous years. In the year 1990 new admission on university education was 1,752 and in 2016 it has been increased to 29,083 students and Sri Lanka expenditure on university education as a percentage of government expenditure, which during the 1990s remained 1.16 had been increased to 2.09 by 2016 (Sri Lanka University Statistics, 2016)

But there is a doubt whether government investment on higher education and its output in terms of student's achievement are equal. When there is a huge gap between government expenditure and academic performance signals fallen standard of education. Despite the increasing trend of student enrollment, the number of students graduating by completing their degree shows decreasing trend. It means that there is a failure to achieve good performance compared with government investment which is negatively impact on student's future and to the progress of the country. Therefore, it is important to identify the factors affecting students' academic performance in order to get anticipated outcome.

There are many researches have been conducted to identify the factors affecting student's academic performance like gender, family background, student previous academic achievement, teacher student ratio, language proficiency, internship in local as well as international context but studies which were empirically examined the impact of above factors including student internship on academic performance in Sri Lankan context are not much adequate. The internship has become an integral part of the degree programs in universities over the past decades. With the internship experience, students are able to gain new perspectives about their academic activities because internship assists to demonstrate the relevance of what they learn in the classroom and applicability in the real world. Hence the impact of internship on academic performance also needs to address when evaluating graduate students' academic performance.

Therefore, the study primarily conducted to examine factors affecting student's academic performance at undergraduate level and try to give insight about the effect of those factors on student academic achievement. And study further extended to assess whether there is a significant difference exist between internship and non-internship students' academic performance in order to evaluate the productivity of undergraduate internship program in university academic curriculum.

## II. LITERATURE REVIEW

The study conducted by Cheung and Kan (2002) based on 168 students of business communications course in Hong Kong identified that females perform better than males and positive relationship of academic background and previous academic achievement with academic performance. The tutorial attendance and academic performance also showed a positive relationship and further, there is no relationship between semester course loads and academic performance. The study conducted at University of Technology Sydney by Hutcheson and Tse (2006) found there is a significant relationship between tutorial attendance and academic performance. The students who involved with more academic works within university have obtained higher average marks than others. Nonis and Hudson (2006) found that prior academic result of university students is significant variable when evaluating current academic performance.

Warren (2002) explained students who were not employed intensively spend more time on academic related activities and extra-curricular activities. Mushtaq and Khan (2012) have examined factors affect to students' academic performance based on 175 students, and they found that communication skills, learning facilities and proper guidance positively affect to students' academic performance and family stress negatively affects to academic performance. They further explained the students' effective communication and competence in English language contributes to higher academic achievement.

Noble (2006) mentioned that students' academic accomplishment is affected by background characteristics of the family such as family income, parents' education level and guidance from parents. The academic environment is significant to student academic performance and there is a positive relationship between father's education level and child's academic level. Gang Li et al. (2010) conducted a quantitative research based on questionnaire survey among 435 students in School of Management at the University of Surrey. They found English proficiency, social communication and perceived impact of learning success of family are significant factors when determining academic performance. The family income, parents' education, lecture attendance, sex and teacher-student ratio were acted as main characters when assessing student performance according to the Raychauduri et al. (2010) findings.

Tessema et al. (2014) examined the effect of student employment on GPA using 5223 respondents in Midwestern public university between 2001 and 2009. Research concluded there is a significant negative but very small impact between working hours and academic performance. When students work more hours, their academic performance come lower. Non-working students and students who work fewer hours per week devote more time on their studies. Research further stated that student employment has both short term and long term benefits and to be competitive in today's labor market, the internship is critical. Threshold Model explained by Cheng (1995) suggested that positive outcomes increase when students work below the threshold number of and above that limit, increase the negative outcomes. The threshold hours of work do not precisely define, and this model predicts nonlinear effect of work hours on outcome.

Koehler's (1974) study looked at the overall GPA of students prior the internship and compared it to their overall GPA at the graduation. He determined that Pennsylvania State University students, that both accounting and general grades enhanced with following an internship. English and Koeppen et al. (1993) concluded on their research that students who undertook internship perform better than non-interns in the semesters following an internship in both their accounting and non-accounting courses. Reddy & Moores (2006) explained that interns have improved their final year marks by 3.2% compared with non-interns and out of total, 14% have improved their degree class with the internship experience based on the students of human psychology degree over a six year period.

Rawlings, White, & Stephens (2005) concluded in their study conducted based on students of information system degree that there is a high probability to achieve first and second upper degree for students who undertook internship than non-interns. Thilakerathne and Madurapperuma, (2014) conducted a study to determine whether internship experience impact to improve GPA for students in accounting degree of the University of Kelaniya. They found statistically significant academic performance of internship students. Better result may in turn result in a higher degree class and better employment prospects. They further found in their research that Z-score of students is not a significant variable when analyzing the current academic performance of graduate students in Sri Lankan context.

Knouse et al. (1999) conducted a research to identify the relationship between college internship, college performance and subsequent career opportunity. The data were collected from 1,117 students and study revealed that those who had internships attained a significantly higher GPA upon graduation than those who did not have an internship even both parties entered into the college with same potential. Students who undertook internship showed somewhat younger than non-interns and there was no significant difference in sex when considering the academic performance of interns.

Zoysa and Rudkin (2007) found positive relationship between hours worked and academic performance of overall sample based on their study of accounting students in Australia. There is a positive relationship between paid employment and academic performance of local students and negative relationship between these two variables for international students. They further explained that students did not give optimal engagement for university education because of the work pressure.

Andrew Lee Hock Cheong et al. (2014) conducted a research with the use of four purposively selected Malaysian private university students who had undergone three months internship program in the Klang Valley. The study concluded internship provides thorough

understanding about the academic activities than they learned under the academic curriculum. They further explained university and host companies should have a well-structured internship program to enhance the learning experience.

Barke et al. (2000) concluded that non-working students show 1.7 percent higher GPA than working students. Humphrey's (2006) also evidenced that working students show a significantly lower end-year average GPA. Lindsay and Paton-Saltzberg (1994) explained working students showed a failure rate of average three times than non-working students and working students obtained poor results and poor degree class. The study conducted by Curtis and Shani (2002) to find the impact of working students on their academic performance, found that employment while studying reduces the lecture attendance, poor grades on exams and higher negative consequences on their health.

Warinda (2013) concluded that most of the internship students do not meet their internship expectations. All interns did not get same level of skills and it varied according to the location they get internship experience. They have recommended that university should identify the areas which need to lead their students to get more exposure of learning and career expectations.

Giacomino (1990) evaluated the internship experience of students based on three-semester post internship period. He found no significant impact of internship on academic performance. He hypothesized the reason for this as, since most of the interns receive permanent employment from internship providers at the end, students have less motivation on academic performance enhancement. Knechel and Snowball (1987) studied academic performance, measured by GPA, to assess the impacts of accounting internships using pairs of non-interns and interns based on GPA and number of credit hours of course work finished prior to the internships of University of Florida. They found no significant difference between interns and non-interns in GPA after completing an internship. They further noted that students who got an auditing internship significantly outperform than those who had not participated in internships. Light (2001) interviewed undergraduate students and found no relationship between grade point and work explaining that students who work more time period show little or no effect on final GPA.

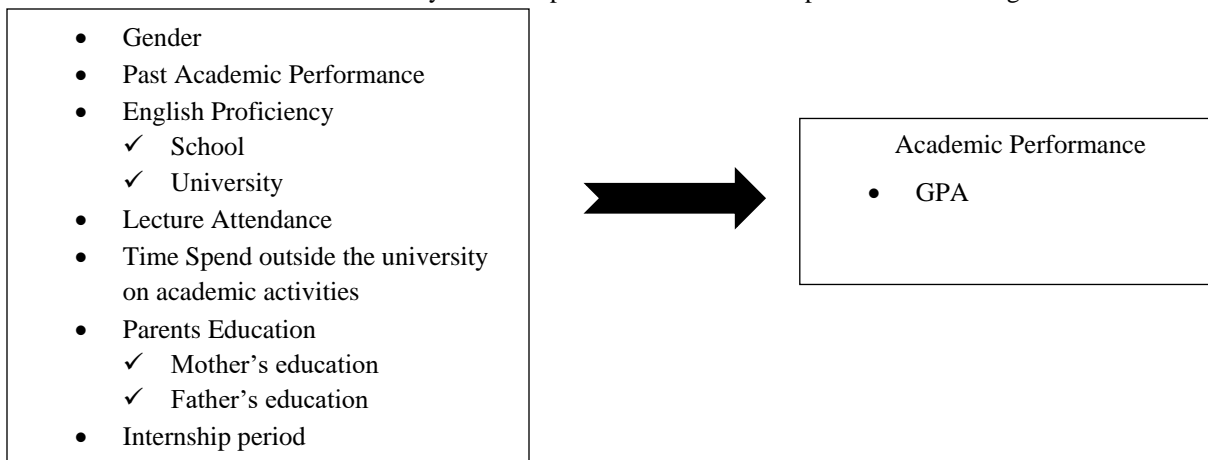
Mendis and Arachchige (2015) performed a research to identify the impact of internship programs on the academic performance of state university students of Sri Lanka through structured questionnaire. According to their findings most of the students show less deviation in GPA compared with prior and after the internship. They found that internship offers greater help to develop skills and competencies of graduates and lead to give better academic performance. Students' time management skills also help to achieve high performance. They further stated that internship assists to develop communication skills, coordination skills and time management skills and undergraduates were able to form an upright personality and better insight about themselves. Lalanie and Withanawasam conducted a research to identify the impact of internship on academic performance and future employability. According to findings internship is not a significant variable in determining academic performance. Lecture attendance and family index are identified as significant factors when explaining the academic performance. They have further stated that internship is highly correlated with future employability of undergraduates and those who have internship spend less time to reach a higher level job position. Ehrenberg and Sherman (1987) found in their research that there is no strong evidence to prove that work hours during the academic year reduce GPA.

The factors which were taken as independent and dependent variables to conduct the study mainly decided based on above literatures.

### III. METHODOLOGY

The study collected data from students who were in the degree program in academic year 2011/2012 and 2010/2011 in the Faculty of Management Studies and Commerce of University of Sri Jayewardenepura in Sri Lanka. The structured questionnaire was used to gather primary data. Study used two groups as control group and experimental group and data were collected from both groups: those who did undertake an internship and those who did not undertake an internship. The total population is about 2000 students and data were collected from 191 respondents using purposive sampling technique. The sample consist 111 male students and 80 female students and 159 students who have engaged with an internship program and 32 students who have not engaged with an internship program.

Based on the variables used in the study the conceptual framework developed in the following manner.



The correlation analysis conducted to identify the relationship between independent and dependent variables. For the consistency of the research, correlation and regression analysis done using data gathered from students who had engaged with internship program. Following model was developed and regression analysis done in order to identify the major determinants for students' academic performance.

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + U_i$$

Where:

Y = Overall final GPA (used as the measure of academic performance) X4 = English proficiency in university

$\alpha$  = constant

X5 = Lecture attendance

$\beta$  = coefficient

X6 = Time spend outside the university on academic activities

X1 = Gender

X7 = Mother's education

X2 = Z-score (Z-score value at the G.C.E. A/L)

X8 = Father's education

X3 = English proficiency in school

X9 = Internship period

U<sub>i</sub> = Random term

Furthermore, following hypothesizes ware formulated and analyzed to identify whether there is a significant difference exist between interns and non-interns when evaluating the overall final GPA. Hypothesis test is conducted using independent sample T-test.

H<sub>0</sub>: There is no significant difference of academic performance between interns and non-interns.

H<sub>1</sub>: There is a significant difference of academic performance between interns and non-interns.

Reject H<sub>0</sub> if  $p < .05$

#### IV. DATA ANALYSIS

##### Correlation analysis

The correlation analysis conducted to identify the relationship between independent and dependent variables.

Variable	Correlation with graduate GPA	
GPA	Pearson Corre.	1
	Sig.	
Gender	Pearson Corre.	-.046
	Sig.	.563
Z-score	Pearson Corre.	.250
	Sig.	.001
English proficiency in school	Pearson Corre.	.637
	Sig.	.000
English proficiency in university	Pearson Corre.	.585
	Sig.	.000
Lecture Attendance	Pearson Corre.	.247
	Sig.	.002
Time spend outside the university on studies	Pearson Corre.	.441
	Sig.	

	Sig.	.000
Mother's education	Pearson Corre.	.063
	Sig.	.428
Father's education	Pearson Corre.	-.006
	Sig.	.942
Internship period	Pearson Corre.	-.243
	Sig.	.002

The correlation matrix showed positive significant relationship of Z-score, English competency, lecture attendance, time spend outside of university on academic activities with GPA ( $p < .05$ ) and positive but insignificant relationship between mother's education and GPA. It showed negative significant relationship between internship period and GPA and negative insignificant relationship of gender and father's education on GPA.

### Regression Analysis

The regression analysis conducted in order to find the major determinants which affect to the academic performance of graduate students.

R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	Durbin-Watson
0.767	0.588	0.563	0.494	23.651	0.000	2.115

The adjusted R2 value implies the extent to which dependent variable is explained by independent variables. The current study showed 56% variance of dependent variable is explained by independent variables. The F value showed 23.651 which implies the overall significance of the model at 1% significance level ( $p = 0.000$ ).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.544	.411		-1.322	.188
Gender	.074	.085	.048	.871	.385
Z-Score	.092	.060	.094	1.542	.125
English proficiency in school	.332	.064	.463	5.175	.000
English proficiency in university	.234	.097	.211	2.409	.017
Lecture Attendance	.204	.058	.223	3.524	.001
Time spend outside the university on studies	.195	.074	.160	2.626	.010
Mother's education	.035	.062	.031	.569	.570
Father's education	-.013	.061	-.012	-.222	.825
Internship period	-.066	.048	-.087	-1.383	.169

When consider about the individual variables, the result showed positive impact of English competency, lecture attendance, time spend outside of university on academic activities on overall GPA at 0.05 percent significant level ( $p < 0.05$ ). Analysis showed positive but insignificant impact of gender, Z-score and mother's education on GPA. There is a negative insignificant impact between father's education and GPA and between Training period and GPA.

### Hypothesis test analysis

H0: There is no significant difference of academic performance between interns and non-interns.

H1: There is a significant difference of academic performance between interns and non-interns.

Reject H0 if  $p < .05$

The Independent sample t-test was used to hypothesis test analysis. Result showed that mean value of non-internship students (2.41) is higher than the mean value of internship students (2.21). But the result was insignificant ( $p=0.156$ ) at 5% significant level and the null hypothesis was not rejected.

Variable	Category	Mean	t	Sig.
Internship	No	2.41	1.425	0.156
	Yes	2.21		

## V. DISCUSSION AND CONCLUSION

The study conducted to identify the determinants of academic performance of students in the Faculty of Management Studies and Commerce at University of Sri Jayewardenepura.

The correlation analysis used to identify the existing relationships between selected independent variables and dependent variable. The result showed that there is a significant positive relationship between Z-score and GPA concluding students who had higher result at the Advanced Level perform better in the university also. The English proficiency showed a significant positive relationship with GPA which was measured under two circumstances; English proficiency in school and university concluding students who have greater fluency in English can perform better in the academic activities. The relationship with lecture attendance and GPA showed a significant positive relationship proving the importance of interactive learning. Time spent outside the university on academic activities and GPA significantly correlate in positive direction proving that spend more time outside the university on academic activities such as self-study, library usage, group assignments lead to get a highest score in final examination. The result showed that there is no significant relationship exists between gender and GPA and also parents' education and GPA. The relationship with internship period and academic performance was negatively correlated with each other. When students' training period is higher, lower the academic performance.

The multiple regression analysis was conducted in order to identify the significant variables among independent variables on the dependent variable. It implied that English competency, lecture attendance and time spent outside the university on academic activities are significant variables of the model.

According to Wardlow (1999), fluency in English is more important for the successful completion of the degree program when they follow their degree in English medium and when their mother tongue is not English. El-Shaarwi et al. (2006) found that English competency is one of the most significant factors on student academic performance. Mushtaq and Khan (2012) explained that students' effective communication and competence in English language contributes to higher academic achievement.

Hutcheson and Tse (2006) found in their research that there is a significant relationship exists between tutorial attendance and academic performance. Students who involved with more academic activities within university have obtained higher average marks. Cheung and Kan (2002) also proved this result by indicating that lecture attendance and tutorial attendance are highly beneficial for get a good GPA at the final examination.

Nonis & Hudson (2006) noted that the students' time spend outside of class gradually decreasing compared with previous years. Coleman (1959) explained in the zero sum model that when student's pursuit works outside the academic activities lead to reduce the time spent on academic activities which again reduce the academic performance.

According to the regression analysis, Gender, Z-score, mother's and father's education and internship period were not significant variables when assessing the determinants of the academic performance. Thilakerathne and Madurapperuma (2014) found that gender is not a significant variable on academic performance as well as Z-score also not a significant variable when evaluating the graduate's academic performance which conducted based on the local university context. Nonis and Hudson (2006) found that prior academic result of university students is significant variable when evaluating the current academic performance. According to Noble et al. (2006), students' academic accomplishment is affected by the background characteristics of the family such as family income, parents' education level and guidance from parents.

The hypothesis analysis was conducted to assess whether there is a significant mean difference exist between internship students and non-internship students on academic performance. The test result showed that there is no significant mean difference exist between interns and non-interns on GPA. According to Lalanie and Withanawasam, internship is not a significant variable on academic performance. Ehrenberg and Sherman (1987) also found in their research that there is no strong evidence to prove that internship lead to reduce GPA. But it is needed to have convenient lecture hours for students who undertake internship and need to maintain transparency and mutual understanding among all parties who involved with the internship program. Internship program needs to be

more practical and up-to-date according to the market requirement. By having good understanding about factors affecting academic performance, society will be able to get anticipated outcomes at the end of the higher education.

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