

**THE IMPACT OF ENGLISH LANGUAGE PROFICIENCY
ON ACADEMIC PERFORMANCE WITH THE
MEDIATING EFFECT OF CHOICE OF LEARNING
APPROACHES: THE CASE OF A MANAGEMENT
FACULTY OF A SRI LANKAN UNIVERSITY**

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Abstract

The purpose of this paper is to examine the impact of English language proficiency (*ELP*) on *academic performance* with the mediating effect of the choice of learning approaches of students. The study is based on the final year students of a management faculty of a Sri Lankan university. In the study, *ELP* was measured using the grades for both G.C.E. Advanced Level General English Examination and Business Communication Examination of the first year, first semester at degree level. The choice of learning approaches was divided into two as the Surface Learning Approach (*SLA*) and the Deep Learning Approach (*DLA*), which were measured by 20 indicators of the revised two-factor study process questionnaire (R-SPQ-2F). The *academic performance* was measured using the GPA of students. The relationships among these variables were examined using the Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis. The study found that most students prefer *SLA* than *DLA* in their academic studies at the university. Further, the study showed a significant positive relationship between the *ELP* and *academic performance* with a partial mediation effect of choice of learning approach on this relationship. The findings of the study are useful for university administrators and academics in educational reforms and the undergraduates to understand the impact of *ELP* on their learning approach and *academic performance*.

Keywords: Academic Performance, Choice of Learning Approaches, English Language Proficiency (*ELP*)

1 INTRODUCTION

Over the past few decades, many studies and discussions have been conducted in relation to the higher education of students. Studies carried out in the last two decades highlight that the environment of the higher education system has changed over the period. According to the changing environment, students had to develop proper skills to achieve success in their academic studies. It is depicted that the development of generic skills such as communication skills, language proficiency, and self-learning skills have become a vital factor, which determines the academic success of the students. Further, Watty (2007) finds that English Language Proficiency (*ELP*) significantly affects the development of other generic skills as a key factor and in turn, the *academic performance* of the undergraduates.

Today, the English language is one critical requirement in higher education as a medium of instruction. Ryan and Stratilas (2012) indicate that English has become a vital tool of communication within the context of globalized higher education. Benzie (2010) states that many countries use English as the main instruction medium in higher education in universities. Empirical studies imply that there is a significant positive relationship between *ELP* and *academic performance* (Abdirahman, Abubakar & Abukar 2013; Ghenghesh 2015; Racca & Lasaten 2016). In the Sri Lankan context, it is imperative to identify the relationship between *ELP* and the *academic performance* of undergraduates, where English has become the central medium of instruction in university education.

Extant literature depicts that *ELP* affects the choice of learning approaches of the students and in turn, their *academic performance*. Marton and Säljö (1976) show that there are two approaches in the learning framework, namely, Surface Learning Approach (*SLA*) and Deep Learning Approach (*DLA*). According to Biggs (1987), *SLA* mainly suggests a narrow aim of passing only the mandatory assessments to obtain academic satisfaction. In comparison, the objective of the *DLA* is to engage in expressive learning. Bobe and Cooper (2017) found that *ELP* significantly affects the choice of learning approaches of students

and via that the academic satisfaction of students based on native students' and international students' samples in a developed country context - Australia. The study by Bobe and Cooper (2017) shows that the academic satisfaction of students who follow *DLA* is better than the students who follow *SLA*.

The study of Bobe and Cooper (2017) is closely related to Sri Lankan higher education context because there is a conversion in the medium of instruction at the university undergraduate education. When considering the education system at the school level in Sri Lanka, most of the students do the G.C.E Advanced Level (A/L) Examination in the mother tongue (Sinhala or Tamil medium) and only a small percentage of the students do A/L in English medium every year due to the lack of facilities for English medium education in schools.^{1,2} Thereafter, the students engage in their university-level education in most disciplines including management in the English medium. Prior studies have found that differences between the medium of school instruction and the medium of university education in Sri Lanka, largely determine the composition of soft skills among management undergraduates in non-English-speaking countries such as Sri Lanka (Gunarathne, Senaratne & Herath 2021). Therefore, it is found in the aforementioned study that many students face problems in adapting to English medium instruction at universities. Accordingly, the choice of learning approach of Sri Lankan university students can be determined based on *ELP* and in turn, could impact their *academic performance* as well. Hence, this study aims to examine the aforesaid issue in the context of Sri Lanka focusing on university-level management education by extending the arguments of Bobe and Cooper's (2017) study to a developing country context. Accordingly, this study addresses two main objectives: first, to examine the relationship between *ELP* and *academic performance*; second, to examine the

¹ G.C.E Advanced Level (A/L) Examination is the examination which is used to select students to universities in Sri Lanka.

² In Sri Lanka, a small percentage of commerce stream students have done A/L in English medium which is approximately 10% from the commerce stream in 2019.

mediating effect of the choice of learning approaches of the students on the relationship between *ELP* and *academic performance*.

These objectives are examined based on the final year students of the largest and most pioneering management faculty in Sri Lanka. It attracts the students with the highest z-score in the A/L Examination in the commerce stream. Further, these students represent all districts in the country with diversity in terms of competence in the English language at the entry level to the university.

This study contributes to theory in several ways. Firstly, it replicates the essence of the study- Bobe and Cooper (2017) in a developing country context– Sri Lanka. Secondly, it has made several methodological extensions to Bobe and Cooper's study. The current study considers the *ELP* of students at the entry level to the university (i.e. through grade obtained for the G.C.E. Advanced Level General English Examination) and after the entry (i.e. through grade obtained for the Business Communication Examination in Year I, Semester I) compared to Bobe and Cooper (2017), which has categorized students as first language learners of English language (i.e., Native students: students who are studying in English being native speakers of English) and second language learners of English language (i.e., International students: students who are studying in English being non-English native speakers) to measure *ELP*. Further, Bobe and Cooper (2017) considered students' satisfaction as the dependent variable and it has been measured by one dichotomous question (i.e., questions that make respondents answer with a "yes" or "no") while in this study, *academic performance* is considered as the dependent variable and measured within unique values assigned to stage-wise GPA.

When considering the practical significance of the study, it is useful for university administrators and academics in educational reforms to understand the impact of *ELP* on the learning approach and *academic performance* of students.

The remaining sections of the study are structured to discuss the extant literature, the research methodology, the analysis, and the discussion and conclusion of the research.

2 LITERATURE REVIEW

This section mainly emphasizes key areas such as the importance of English language proficiency to learning and the importance of the choice of learning approaches to the learning framework. Moving forward from the existing literature, the research gap of the study was identified.

2.1 English Language Proficiency (ELP) and Learning

Several studies related to the *academic performance* of students have pointed out the value of the English language in the context of globalized higher education because it is used as a medium of instruction in higher education in most instances. Ryan and Stratilas (2012) indicated that English has become an essential tool of communication when it comes to globalized higher education. Benzie (2010) stated that the English language has become the most common instruction medium in higher education.

Based on previous studies conducted in relation to higher education identified that students faced many disadvantages in globalized higher education due to having a lack of *ELP*. Racca and Lasaten (2016) stated that students' performance in schools, universities, or other educational institutes could diminish due to a lack of *ELP*. Lebcir, Wells and Bond (2008) stated that international students highly depend on the ability of lecturers to structure the study material and elaborate due to having a lack of *ELP*. Therefore, self-learning opportunities for the students can be limited due to the lack of *ELP*. Further, Benzie (2010) stated that *ELP* act as a barrier within higher education, and most international students are unable to achieve the target level of *academic performance* due to the lack of *ELP*. Hence, it can be stated that *ELP* is critical in higher education. These arguments reveal that *ELP* significantly affects the *academic performance* of the students.

Based on studies conducted in relation to *ELP* and the *academic performance* of the students indicate that *ELP* and *academic performance* are related. Research findings of a study conducted in the Philippines indicated that *ELP* and *academic performance* have a significant positive relationship (Racca & Lasaten 2016). Further, Ghenghesh (2015) confirms that there is a significant positive relationship between *ELP*, and *academic performance* (GPA) based on the management students in a British University in Egypt. Results of a study conducted based on students in Nigerian secondary schools indicate that there is a significant positive relationship between *ELP* and the academic success of the students (Fakeye & Ogunsiji 2009). Accordingly, it is depicted that a high level of *ELP* leads to higher *academic performance* as well as a low level of *ELP* leads to poor *academic performance*, and ultimately it leads to reduce academic standards of universities. Hence, *ELP* affects the *academic performance* of students and in turn, academic standards of the universities.

Benzie (2010) stated that *ELP* of the international (overseas) students were not developed in the higher education experience, and it will have a significant impact on the academic standards of the universities. Watty (2007) stated that there is a connection between *ELP* of the students and standards of management education based on a sample of overseas students learning in Australian universities. In addition, Bretag (2007) demonstrated that poor *ELP* of the students affects the academic standards in Australian universities, and it gives extra pressure on instructors to pass fee-paying students to retain their standard performance of the university.

Furthermore, some studies indicated that not only *ELP* but also the participation of the students in education (choice of learning approaches) are the key factors of *academic performance*. Accordingly, Murray (2013) stated that *ELP* and widening participation of the students are key elements to achieving *academic performance* and there is an intersection that exists between *ELP* and widening participation, which decides the *academic performance* of students.

2.2 Choice of Learning Approaches to the Learning Framework

There are two main approaches to learning, namely, Surface Learning Approach (*SLA*) and Deep Learning Approach (*DLA*) (Marton & Säljö 1976). As per *SLA*, the primary motive of students is to avoid failing assessments and it proposes rote learning, which leads towards a narrow target of only passing the expected assessments and getting academic satisfaction. In comparison, the purpose of the *DLA* is to involve in meaningful learning. As per *DLA*, students are fundamentally interested in the subject matter and try to maximize learning outcomes (Biggs 1987). As per Biggs, Kember and Leung (2001), learning approaches can be further divided into as motivate and strategy and described as follows (Table 1).

Table 1: Summary of surface and deep learning approaches

	SLA	DLA
Motivate	Fear of failure	Intrinsic interest
Strategy	Narrow target	Maximize meaning

Source: Adapted from Biggs, Kember and Leung (2001)

According to Table 1, *SLA* involves too little attempt in passing exams because of fear of failing exams (surface motivate) and narrow target of learning (surface strategy). On the other hand, deep motivate suggests interest to educate deeply such as trying to find more information about topics and deep strategy suggests improvement of understanding of topics by applying own ideas and conclusions (maximize meaning).

According to previous studies, there are trends following the learning approaches of students. Kember (2004) demonstrate that most management undergraduates follow *SLA* due to heavy workload and there is a complex relationship between *SLA* and workload based on a sample of management undergraduates in Hong Kong. Booth, Luckett and Mladenovic (1999) reported that most management students follow *SLA* relatively higher than *DLA* based on a sample of management undergraduates in Australia. The results of extant literature have also indicated that *ELP* affects the choice of learning approaches of the students. Murray

and Hicks (2016) stated that second language learners of English have difficulty understanding lectures and textbooks, and they would be more likely to adopt *SLA*. Hence, it implies that students with a lack of *ELP* prefer to follow *SLA* which elaborates the negative relationship between *ELP* and *SLA*.

Further, the literature indicated that there is a relationship between choice of learning approaches and *academic performance*. Booth, Luckett and Mladenovic (1999) indicate that there is an adverse relationship between *SLA* and academic satisfaction. Kember (2004) stated that *SLA* leads to lower *academic performance*. Further, Eley (1992) demonstrated that there is a positive relationship between *DLA* and the *academic performance* of the students. Accordingly, it can be identified that *ELP* affects the choice of learning approaches of the students and in turn, the *academic performance* of the students.

Bobe and Cooper (2017) demonstrated that *ELP* is significantly related to the choice of learning approaches of students and in turn, to the academic satisfaction of students while categorizing native students as first language learners of English language and international students as second language learners of English language to measure *ELP* level. First language learners of English have more fluency in the English language than second language learners of English. As per the findings of Bobe and Cooper (2017), first language learners of English prefer *DLA* than second language learners of English. This shows that students with more fluency in the English language prefer *DLA* than other students. Further, second language learners of English (international students) prefer *SLA* than native students. This means students with low fluency in the English language prefer *SLA* over *DLA*. It revealed that *ELP* positively related to *DLA* and negatively related to *SLA*. Furthermore, the result of Bobe and Cooper (2017) study also shows that the academic satisfaction of students who follow *DLA* is greater than students who follow *SLA*. It revealed that *DLA* is positively related to academic satisfaction and *SLA* is negatively related to academic satisfaction. Accordingly, Bobe and Cooper (2017) concluded that the choice of learning approach acts as a mediating factor in the relationship between *ELP* and *academic performance*.

Bobe and Cooper (2017) examined the effect of *ELP* on academic satisfaction with the mediating effect of the choice of learning approaches in the developed country. Compared to developed countries, there is a research gap owing to the lack of similar studies in the context of developing countries. Therefore, this study focuses on the issue of the impact of *ELP* on *academic performance* with the mediating effect of the choice of learning approach related to the higher education of the management field in the Sri Lankan context (as a developing country).

3 RESEARCH METHODOLOGY

This section outlines the research approach, population and study sample, conceptual framework, hypotheses, operationalization of variables, data collection methods and analytical strategies.

3.1 Research Approach

A positivism paradigm was used to identify the relationship between *ELP* and *academic performance* with the mediating effect of choice of learning approach through quantified variables.

3.2 Population and Study Sample

The final year undergraduates of the Faculty of Management Studies and Commerce (FMSC) of the University of Sri Jayewardenepura were used as the population of the study. FMSC was selected in the study as it is the pioneering and most sought-after management faculty in the Sri Lankan university system. The reason for selecting final year students is that they are at the final stage of their academic programme, and it helps to provide a holistic picture of the *academic performance* than other years. The questionnaire was sent to approximately 250 students as per the convenience of the researcher and the possibility of reaching the respondents through social media platforms. Finally, 168 questionnaires were received. Therefore, the sample of the study represents 168 observations of the final year students (which amounts to approximately 67% of the number of students that had received the questionnaire of the study). The sample of the study covered all 12 departments of the Faculty and Table 2 below indicates the department-wise profile of the sample.

Table 2: Sample size and department wise representation

Department	Frequency	Percent
Accounting	44	26.2
Finance	19	11.3
Business Administration	33	19.6
Business Economics	11	6.5
Marketing Management	13	7.7
Human Resource Management	11	6.5
Decision Sciences	10	6.0
Entrepreneurship	3	1.8
Commerce	8	4.8
Estate Management and Valuation	7	4.2
Information Technology	3	1.8
Public Administration	6	3.6
Total	168	100.0

Source: Author Constructed

3.3 Conceptual Framework

The conceptual diagram has been developed in line with Bobe and Cooper (2017) based on the 3P model of students' learning, which was demonstrated by Biggs (1991): Presage; Process; Product. According to Biggs (1991), the presage factors refer to characteristics of students; process factors refer to learning approaches to accomplish their tasks and product factors refer to overall satisfaction/ outcome of the students. As per the Biggs 3P model, language proficiency, which is used as an instruction medium (Presage) affects the choice of learning approaches (Process) and, in turn, overall satisfaction/*academic performance* of the students (Product). In this study, *ELP* is considered as a presage factor, choice of learning approaches considered as a process factor, and *academic performance* considered as a product factor. Further, the choice of learning approaches is divided into two approaches namely, *DLA* and *SLA*. Each learning approach is further divided into subscales as deep motivate, deep strategy, surface motivate and surface strategy in line with Biggs et al. (2001). Figure 1 below indicates the conceptual framework of the study.

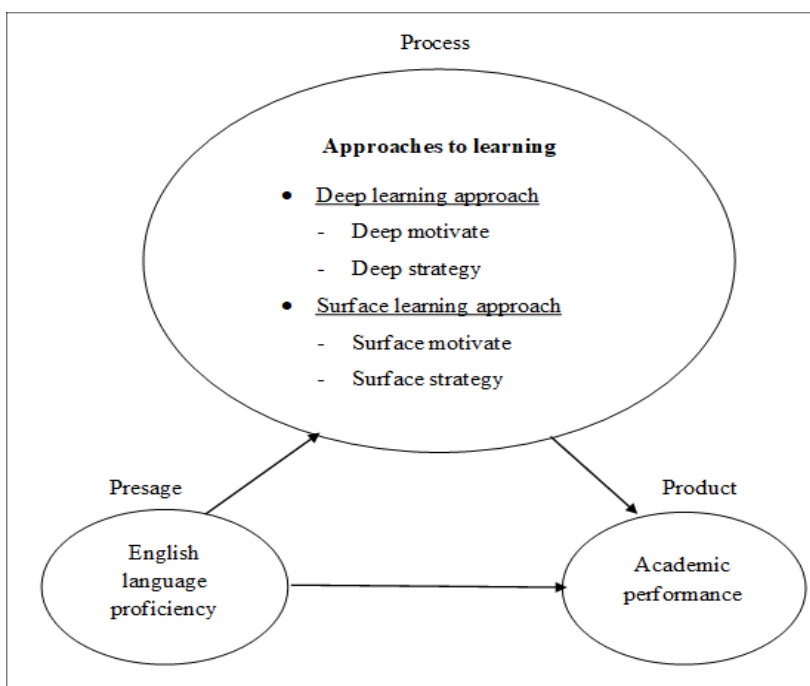


Figure 1: Conceptual Framework

Source: Author Constructed

3.4 Hypotheses

Based on the findings of extant research studies and the conceptual framework of the study, the following hypotheses are developed for this study.

H₁: There is a positive relationship between *ELP* and *academic performance*.

H₂: There is a mediating effect of choice of learning approaches on the relationship between *ELP* and *academic performance*.

3.5 Operationalization

Table 3 indicates the operationalization of the key variables of the study.

Table 3: Operationalization of variables

Variable Name	Measurement
Independent Variable	
English language proficiency (<i>ELP</i>)	<ul style="list-style-type: none">• Assigned unique values for the grade obtained for G.C.E Advanced Level General English Examination• Assigned unique values for the grade obtained for the Business Communication Examination in the first year, first semester (Refer to Note 1)
Mediating Variable	
Approaches to learning	<ul style="list-style-type: none">• Used 20 indicators (questions) (R-SPQ-2F) relevant to four sub-scales as deep motive, deep strategy, surface motive and surface strategy• The main deep learning approach (<i>DLA</i>) and surface learning approach (<i>SLA</i>) scales were measured using 10 corresponding indicators per approach (Refer to Note 2)
Dependent Variable	
<i>Academic performance</i>	<ul style="list-style-type: none">• Assigned unique values for the overall GPA obtained by final year students, stage wise (Refer to Note 3)

Note 1: Within this study, *ELP* was measured by two indicators, namely, the grade obtained for General English subject at the G.C.E Advanced Level Examination and the grade obtained for Business Communication subject at the University. Normally, grade results have a range of values and are considered categorical variables. Therefore, the following unique values were assigned to the *ELP* for the analysis.

Unique values assigned to the grade obtained for the General English subject
A=5, B=4, C=3, S=2, and F=1

Unique values assigned to the grade obtained for the Business Communication subject
A+=12, A=11, A-=10, B+=9, B=8, B-=7, C+=6, C=5, C-=4, D=3, D-=2, and E=1

Note 2: Within this study, 20 indicators were used to measure the choice of learning approach of the students (Table 4) based on the Revised Study Process Questionnaire (R-SPQ-2F) developed by Biggs, Kember and Leung (2001). Below indicate the indicators of choice of learning approaches which are short named based on the R-SPQ-2F questionnaire.

Table 4: Indicators of choice of learning approaches

No.	Indicator	No.	Indicator
1.	DeepPer_Satis	11.	Memo_Key_Sections
2.	Own_Conclusions	12.	Restrict_Study
3.	Little_Work	13.	Work_Hard
4.	OnlyStudy_Course_Outlines	14.	Find_Inters_Topics
5.	Feel_Interesting	15.	Glance_Through_Topics
6.	Spend_Extra_Time	16.	NotExpect_Studing_Materials
7.	Minim_Work	17.	Want_Answering
8.	Learn_Memorizing	18.	Looking_Suggest_Readings
9.	Times_Exciting	19.	Nopoint_Learning_Material
10	Test_Impor_Topics	20.	Remem_Answers_LikelyQuest

Accordingly, a collection of 5 questions was used to measure each sub-scale as deep motivate, deep strategy, surface motivate and surface strategy in line with Biggs, Kember and Leung (2001). Indicators that are used to measure each sub-scale can be described indicator number wise as follows:

Deep motivate = 1 + 5 + 9 + 13 + 17 Surface motivate = 3 + 7 + 11 + 15 + 19
Deep strategy = 2 + 6 + 10 + 14 + 18 Surface strategy = 4 + 8 + 12 + 16 + 20

A collection of 10 indicators was used to measure the main *DLA* and *SLA*. Indicators that are used to measure *DLA* and *SLA* can be described indicator number wise as follows:

$DLA = 1 + 2 + 5 + 6 + 9 + 10 + 13 + 14 + 17 + 18 =$ (Deep motivate + Deep strategy)
 $SLA = 3 + 4 + 7 + 8 + 11 + 12 + 15 + 16 + 19 + 20 =$ (surface motivate + surface strategy)

Note 3: Within this study, the overall GPA of the students were obtained as stage-wise namely, first-class stage, second class – upper stage, second class – lower stage, and general stage to measure the *academic performance* of students. Hence, overall GPA is considered as a categorical variable within this study and the following unique values were assigned to the overall GPA.

First class=4, Second class – upper stage=3, Second class – lower stage=2, General stage=1

3.6 Data Collection Methods

In this study, a two-part survey instrument was created as a Google Form to collect data. The data collecting instrument was developed similarly in line with the two-part survey instrument, which is used in Bobe and Cooper (2017) with some modifications for 20 questions of R-SPQ-2F for ease of understanding of the respondents. The data collecting instrument consisted of two parts. i.e., Part 1 consisted of 20 questions of the revised study process questionnaire (R-SPQ-2F) that related to *DLA* and *SLA*, and Part 2 consisted of questions related to the demographic and learning experience. In this section, the following demographic data were obtained: index number, gender, and department. Further, the grades obtained for the General English subject at the G.C.E Advanced Level Examination and Business Communication subject of the first year, first semester at the University, and the overall GPA at the University were obtained as the learning experience of the students. There were no validity issues as to the data collecting instrument because a similar type of data collecting instrument was used in Bobe and Cooper (2017).

3.7 Data Analysis Strategies

The study used descriptive statistics, correlation analysis and partial least squares structural equation modelling (PLS-SEM) analysis as data analysis methods. Descriptive statistics were used to describe the characteristics of the sample. The mean comparison of sub-scales and main learning approaches was performed under descriptive statistics to identify students' preferences of learning approaches. The Pearson correlation analysis was used to identify the correlation between *ELP* and *academic performance* through the IBM Statistical Package of Social Sciences (SPSS) software. The partial least squares structural equation modelling (PLS-SEM) was performed to identify the relationship between *ELP* and *academic performance* with the mediating effect of choice of learning approaches through the SmartPLS3 software developed by Ringle, Wende and Becker (2015).

3.7.1 Partial Least Squares Structural Equation Modeling (PLS-SEM)

Within the PLS-SEM, a path model was used to identify the relationship between each variable. Sarstedt, Ringle and Hair (2021) stated that PLS-SEM is a method that estimates relationships among constructs/ latent variables of complex path models. Hair, Ringle and Sarstedt (2013) suggested PLS-SEM analysis as the best method that can be used to analysis of categorical data. According to Hair, Ringle and Sarstedt (2013), many researchers utilize PLS-SEM analyses when the path models are subject to mediation effects. In this study, analysis was done by using categorical data with identifying the mediating effect of choice of learning approach on the relationship between *ELP* and *academic performance*. Hence, PLS-SEM analysis is deemed most suitable for this study.

According to Hair et al. (2014), the outer model and the inner model of the analysis must be determined correctly when applying PLS-SEM. The outer model represents a relationship between indicators and latent variables. There are two types of outer models namely, the formative measurement model and the reflective measurement model. Reflective indicators consist set of possible indicators that are related to latent variables (Diamantopoulos & Winklhofer 2001). In this study, a reflective measurement model was used to perform the analysis because indicators of this study only represent possible indicators to measure latent variables. Wong (2013) stated that causality direction is going away from latent variables to indicators in the reflective measurement model. Figure 2 below indicates the path model of the study that shows arrows are going away from latent variables to indicators.

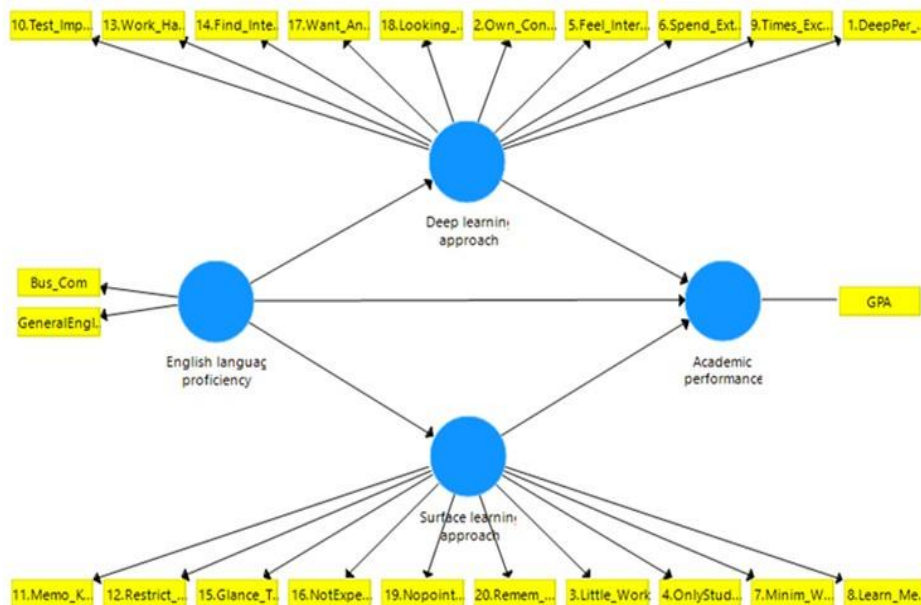


Figure 2: Path Model

Source: Author Constructed

The inner model represents a relationship between each latent variable. Latent variables can be categorized into two variables as exogenous and endogenous variables. Independent variables are considered as exogenous variables and dependent variables are often considered as endogenous variables because endogenous variables are explained by other variables. Within this study, *ELP* is considered as an exogenous variable and *academic performance* is considered as an endogenous variable. According to the path model of the study, the choice of learning approach has been divided into two as *DLA* and *SLA*, which are considered as two mediating latent variables. Since *SLA* and *DLA* are two contradictory approaches, the mediating effect has been identified separately (Figure 2: Path Model). Accordingly, the total mediating effect of the choice of learning approach has been identified by *SLA* and *DLA*. Hence, the relationship between *ELP* and each learning approach, and the relationship between each learning approach and *academic performance* as well as the overall mediating effect of the choice of learning approaches are identified within the PLS-SEM.

In the PLS-SEM, mainly outer model evaluation, inner model evaluation and mediation analysis were performed to get the results of the study. As per outer model evaluation, internal consistency reliability, convergent validity and discriminant validity tests were performed to evaluate the reflective measurement model adhering to Hair et al. (2014). Further, coefficient of determination (R^2), cross-validated redundancy (Q^2), effect size and path coefficient tests were carried out to evaluate the inner model of the study. Path coefficient values were used to achieve Objective 1. The mediation analysis procedure which was introduced by Zhao, Lynch and Chen (2010) has been used to identify mediating effect of the choice of learning approach under the mediation analysis to achieve Objective 2.

4 ANALYSIS

The outcomes of descriptive statistics, correlation analysis and PLS-SEM analysis are outlined in this section.

4.1 Descriptive Statistics

Table 5 below indicates the mean values, which were obtained for subscales of choice of learning approaches.

Table 5: Mean values of subscales of learning approaches

Sub-scale	Mean	Min	Max	Standard Deviation
Deep motivate	2.724	1	5	1.224
Deep strategy	2.838	1	5	1.298
Surface motivate	2.932	1	5	1.266
Surface strategy	3.056	1	5	1.247

Source: Author Constructed

Accordingly, mean values obtained from main learning approaches can be mentioned as; $DLA=2.781$, $SLA=2.994$. As per the mean comparison, it can be stated that most of the students prefer SLA than DLA in their academic studies at the university.

4.2 Correlation Analysis

Table 6 shows the correlation between the grades obtained for the General English subject at the GCE A/L Examination and Business Communication subject at the first year of the Degree Program with the overall GPA of the students.

Table 6: Correlation values

	General English	Business Communication
Overall GPA of Pearson	.641**	.700**
the student Correlation		
Sig. (2-tailed)	.000	.000

Source: Author Constructed

The Pearson Correlation (r) value between the grade obtained for General English and overall GPA was shown as 0.641 ($p < 0.01$), which is at 1% significance. It designates that there is a strong positive correlation between General English and overall GPA. Further, the Pearson Correlation (r) value between grade obtained for Business communication and overall GPA was shown as 0.7 ($p < 0.01$) which is at 1% significance. It indicates there is a strong positive correlation between Business Communication and GPA. Accordingly, correlation results of both indicators of *ELP* show there is a strong positive correlation between *ELP* and *academic performance*.

4.3 PLS-SEM Analysis

Findings regarding PLS-SEM were obtained within the PLS algorithm report, bootstrapping report, and blindfolding report by using SmartPLS3, which are presented next.

4.3.1 Outer Model Evaluation

Internal Consistency Reliability

Wong (2013) stated that Cronbach's alpha values of 0.7 or higher are acceptable for internal consistency reliability and composite reliability values of 0.7 or higher are much preferred/ acceptable to measure internal consistency reliability (Table 7).

Table 7: Cronbach alpha values and composite reliability values

Construct	Cronbach's Alpha	Composite Reliability
<i>Academic performance</i>	1.000	1.000
<i>DLA</i>	0.957	0.963
<i>ELP</i>	0.870	0.939
<i>SLA</i>	0.956	0.962

Source: Author Constructed

Table 7 above indicated Cronbach's alpha and composite reliability values of latent variables obtained from the construct reliability and validity section in the PLS algorithm report. According to Table 6, all Cronbach's alpha values and composite reliability values are greater than 0.7. Therefore, it can be stated that there is no reliability issue in the outer model of the study.

Convergent Validity

Hair et al. (2014) stated that convergent validity criteria are fulfilled when the Average Variance Extracted (AVE) values of each construct are 0.5 or higher. According to the construct reliability and validity section in PLS algorithm report, AVE values of all constructs are greater than 0.5 as; *Academic performance* = 1.000, *DLA* = 0.720, *ELP* = 0.885, *SLA* = 0.717. Therefore, it can be stated that there is no convergent validity issue in the outer model based on AVE values.

Hair et al. (2014) further stated that convergent validity criteria are fulfilled when outer loadings values are 0.7 or higher. As per the outer loadings section in the PLS algorithm report, all the outer loading values are greater than 0.7. Hence, it can be stated that there is no convergent validity issue in the outer model based on outer loading values. These results revealed that there is no convergent validity issue in the outer model of the study.

Discriminant Validity

Hair et al. (2014) stated that discriminant validity can be measured by Fornell and Larcker (1981) criterion and cross-loadings values of indicators. Wong (2013) stated that the square root AVE value of each construct should be greater than the

correlation among other constructs to fulfil discriminant validity under the Fornell and Larcker criterion. Table 8 below indicates the Fornell and Larcker criterion which is presented in the discriminant validity section of the PLS algorithm report.

Table 8: Fornell and Larcker criterion

Construct	Academic performance	DLA	ELP	SLA
<i>Academic performance</i>	1.000 (Single item construct)			
<i>DLA</i>	0.642	0.849		
<i>ELP</i>	0.715	0.299	0.940	
<i>SLA</i>	-0.740	-0.783	-	0.847
			0.456	

Source: Author Constructed

According to Table 8, the square roots of AVE values (bolded values) are greater than the correlation among all other constructs. Hence, it can be stated that there is no discriminant validity issue in the outer model based on Fornell and Larcker criterion.

Further, Henseler, Ringle and Sarstedt (2015) preferred to Heterotrait-Monotrait (HTMT) ratio lower than 0.9 to examine discriminant validity. As per HTMT ratios of variables presented in the discriminant validity section in the PLS algorithm report, all HTMT ratios are lower than 0.9. Therefore, it can be stated that there is no discriminant validity issue in the outer model based on HTMT ratios. These results revealed that there is no discriminant validity issue in the outer model of the study.

4.3.2 Inner Model Evaluation

Coefficient of Determination (R²)

As per Hair et al. (2014), R² is a measure of predictive accuracy of the inner model that provides the combined effect of an exogenous variable to endogenous variables, and it represents values between 0 to 1. According to Hair et al. (2011), R² values of 0.75, 0.5 and 0.25 are acceptable describing respectively as

substantial, moderate, and weak levels of predictive accuracy. Chin (1998) articulated that R^2 values of 0.67, 0.33 and 0.19 are acceptable describing respectively as substantial, moderate, and weak levels of predictive accuracy. According to R^2 values of constructs obtained from the R square section in the PLS algorithm report, *academic performance* shows a substantial level of predictive accuracy with an R^2 value of 0.749. Further, *SLA* shows a weak level of predictive accuracy with a R^2 value of 0.208.

Cross-Validated Redundancy (Q^2)

Hair et al. (2014) stated that Q^2 is a measure of predictive relevance of the inner model and Q^2 values greater than 0 are preferred for each endogenous construct. Thus, the blindfolding report was obtained by selecting omission distance as 5 to identify Q^2 values of endogenous constructs. Q^2 values which presented in construct cross-validated redundancy section in blindfolding report can be mentioned as; *Academic performance* = 0.729, *DLA* = 0.061, *SLA* = 0.145. Hence, it can be stated that the entire inner model has predictive relevance within each endogenous construct because all Q^2 values are greater than 0.

Effect Size (f^2)

Cohen 1988 (cited in Hair et al. 2014) stated that f^2 is a measure of the effect of each exogenous construct on endogenous construct and it can be determined that 0.02, 0.15 and 0.35 represent small, medium, and large effects, respectively. As per the f^2 values presented in the f square section in the PLS algorithm report, *ELP* largely affects *academic performance* as 0.761. Further, *ELP* affects *SLA* as a medium effect (0.262) and affects *DLA* as a small effect (0.098). Furthermore, *DLA* and *SLA* affect *academic performance* with small effects respectively as 0.086 and 0.143.

Path Coefficients

Path coefficient values represent the relationship between latent variables and path coefficient values are ranged from -1 to +1. Minus (-) path coefficient values show a negative relationship and

plus (+) path coefficient values show a positive relationship (Hair et al. 2014). The bootstrapping report was obtained to identify the significance level of the relationships (p-values). Table 9 below indicates the path coefficient values and p-values of each relationship.

Table 9: Path coefficient values and p-values

	Original Sample (O)	p- values
<i>ELP -> Academic performance</i>	0.494	0.000
<i>ELP -> DLA</i>	0.299	0.000
<i>DLA -> Academic performance</i>	0.237	0.004
<i>ELP -> SLA</i>	-0.456	0.000
<i>SLA -> Academic performance</i>	-0.329	0.000

Source: Author Constructed

According to Table 9, the original sample (O) shows the path coefficient values that indicate the relationship between each latent variable. Path coefficient value of *ELP -> Academic performance* (direct effect) shows as 0.494 ($p < 0.01$) which is at 1% significance. It denotes a significant positive relationship between *ELP* and *academic performance*. Therefore, this finding supports hypothesis H₁, i.e., there is a positive relationship between *ELP* and *academic performance*. Accordingly, the first objective of the study was accomplished by the findings of the study.

Path coefficient value of *ELP -> DLA* shows as 0.299 ($p < 0.01$) which is at 1% significance. It represents a significant positive relationship between *ELP* and *DLA*. Path coefficient value of *DLA -> Academic performance* shows as 0.237 ($p < 0.01$) which is at 1% significance. It represents a significant positive relationship between *DLA* and *academic performance*. Therefore, it can be stated that *ELP* is positively related to the *DLA* and in turn, positively related to *academic performance*.

Path coefficient value of *ELP -> SLA* shows as -0.456 ($p < 0.01$) which is at 1% significance. It represents a significant negative

relationship between *ELP* and *SLA*. Path coefficient value of *SLA* -> *Academic performance* shows as -0.329 ($p < 0.01$) which is at 1% significance. It represents a significant negative relationship between *SLA* and *academic performance*. Therefore, it can be stated that *ELP* is negatively related to the *SLA* and in turn, negatively related to *academic performance*.

4.4 Mediation Analysis

Zhao, Lynch and Chen (2010) (cited in Nitzl, Roldan and Cepeda 2016) suggested Figure 3 which is on the procedure to identify mediation effect within the PLS-SEM model.

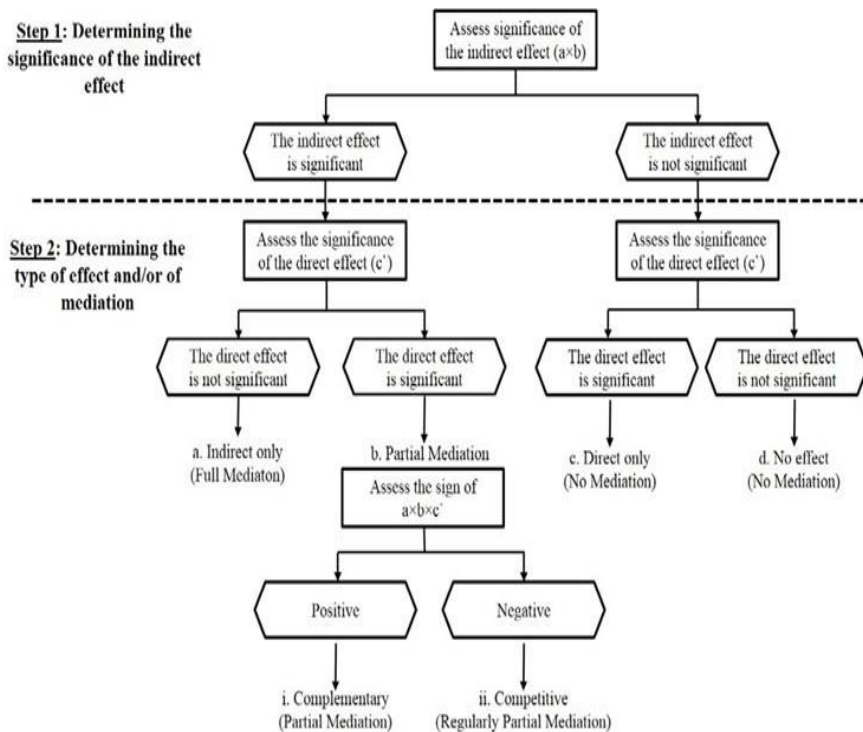


Figure 3: Mediation analysis procedure

Source: Zhao, Lynch and Chen (2010) (cited in Nitzl, Roldan and Cepeda 2016)

In this study, two mediate variables were used, (i.e.: *DLA* and *SLA*), which represent the overall mediating effect of the choice

of learning approach. When using two or more (multiple) mediating variables, it causes serial mediation effect. Nitzl, Roldan and Cepeda (2016) suggest the Mediation analysis procedure with multiple variables (see Figure 3). Accordingly, Figure 4 indicates the serial mediation model of study in line with Nitzl, Roldan and Cepeda (2016) study.

According to Figure 4, $a_1 * b_1$ was considered an indirect effect via *DLA*, and $a_2 * b_2$ was considered as indirect effect via *SLA*. Both indirect effects can be considered as a total indirect effect via the choice of learning approach as *DLA* and *SLA* are only two categories of choice of learning approach. Further, c' considered the direct effect between *ELP* and *academic performance*. Accordingly, the total effect of this model was calculated in line with Nitzl, Roldan and Cepeda (2016) as follows.

The direct effect (c') + the indirect effect ($a_1*b_1 + a_2*b_2$) = the total effect

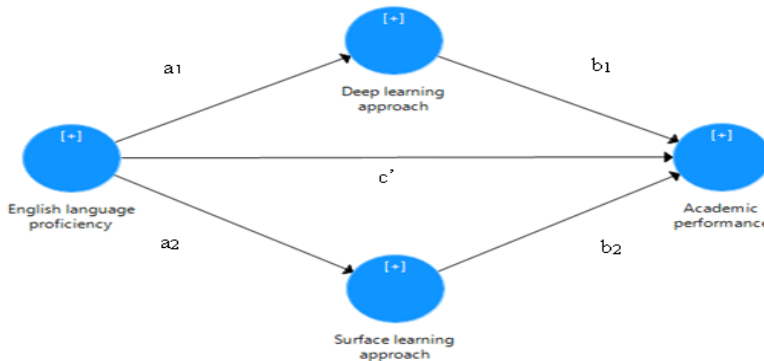


Figure 4: Serial mediation model

As per Figure 3, firstly indirect effect of the model should be determined. Indirect effects of each learning approach and total indirect effect of choice of learning approaches (mediating variable) indicate as follows (Table 10).

Table 10: Total indirect effect and p-values

	Original Sample (O)	p-values
<i>ELP</i> -> <i>DLA</i> -> <i>Academic performance</i>	0.071	0.024
<i>ELP</i> -> <i>SLA</i> -> <i>Academic performance</i>	0.150	0.001
<i>ELP</i> -> <i>Academic performance</i>	0.221	0.000

Source: Author Constructed

According to Table 10, total indirect effect of *ELP* -> *Academic performance* shows as 0.221 ($p < 0.05$) which is at 5% significance including both indirect effects of *ELP*-> *DLA* -> *Academic performance* and *ELP*-> *SLA* -> *Academic performance*. Therefore, it satisfied criteria 01 of step 1 in Figure 3 as having a significant indirect effect within mediating variable.

According to path coefficients, the direct effect of *ELP* -> *Academic performance* shows as 0.494 ($p < 0.01$) which is at 1% significance in Table 8. Hence, it satisfied criteria 02 of step 2 in Figure 3 as having a significant direct effect between independent and dependent variables. Accordingly, the results of this study indicate a significant partial mediation effect of choice of learning approaches on the relationship between *ELP* and *academic performance* as per Figure 3. Therefore, this finding supports hypothesis H_2 , i.e., there is a mediating effect of choice of learning approaches on the relationship between *ELP* and *academic performance*. Accordingly, the second objective of the study was accomplished by the findings of the study.

Further, Klarner et al. (2013) used VAF values to identify the degree of partial mediation effect as a percentage. VAF values are calculated as total indirect effect divided by total effect. In this study, VAF values are used to calculate the partial mediation effect as a percentage, and it shows as 31%. Accordingly, it can be stated that there is a 31% of partial mediation effect by choice of learning approaches on the relationship between *ELP* and *academic performance* by the sample based on final year management undergraduates of the University of Sri Jayewardenepura.

5 DISCUSSION AND CONCLUSION

5.1 Discussion

5.1.1 Relationship between ELP and academic performance

The first objective of this study is to examine the relationship between *ELP* and *academic performance*. The findings of previous studies show a significant positive relationship between the *ELP* and *academic performance* based on the Pearson Correlation value (Ghenghesh 2015, Fakeye & Ogunsiji 2009). This study also finds a significant positive relationship between *ELP* and *academic performance* based on path coefficient values. ($ELP \rightarrow Academic\ performance = 0.494$ ($p=0.00$)). Nevertheless, the findings of the study extend the findings of previous studies because it uses path coefficient values through PLS-SEM analysis. This can be identified as a novelty of this study.

5.1.2 Relationship between ELP and academic performance with the mediating effect of choice of learning approaches

This study replicates the idea of Bobe and Cooper (2017) with some modifications relating to Sri Lankan university education. Accordingly, as the second objective, the study examines the mediating effect of the choice of learning approaches of the students on the relationship between *ELP* and *academic performance*. Comparing mean values of overall *DLA* of First language learners of English and second language learners of English, Bobe and Cooper (2017) have demonstrated that the students with higher *ELP* prefer *DLA* (Mean 3.38 vs 3.29). Similarly, the current study finds a significant positive relationship between *ELP* and *DLA* ($ELP \rightarrow DLA = 0.299$ ($p < 0.01$)).

Comparing mean values of overall *SLA*, Bobe and Cooper (2017) demonstrate that students with low *ELP* prefer *SLA* (Mean 3.38 vs 3.29). Similarly, the current study finds a significant negative relationship between *ELP* and *SLA* ($ELP \rightarrow SLA = -0.456$ ($p < 0.01$)). Accordingly, the current study confirms the results of Bobe and Cooper (2017) as to the direct relationship between *ELP* and the learning approach in a developing country context.

As per Bobe and Cooper (2017), the academic satisfaction of students, who follow *DLA* is better than those who follow *SLA* (DLA - academic satisfaction = 0.38 ($p < 0.01$), SLA - academic satisfaction = -0.28 ($p < 0.05$)). Hence, Bobe and Cooper (2017) said that there is a significant positive relationship between *DLA* and academic satisfaction, and a significant negative relationship between *SLA* and academic satisfaction. Findings of the current study indicate significant positive relationship between *DLA* and *academic performance* (GPA) ($DLA \rightarrow Academic\ performance = 0.237$ ($p < 0.01$)), and significant negative relationship between *SLA* and *academic performance* (GPA) ($SLA \rightarrow Academic\ performance = -0.329$ ($p < 0.01$)). The study extends the findings of Bobe and Cooper (2017) as it considered *academic performance* (GPA) as a dependent variable instead of academic satisfaction used in Bobe and Cooper (2017) study.

Also, the mediating effect of choice of learning approaches had not been quantified within Bobe and Cooper (2017) study. However, the current study quantifies the choice of learning approach and finds a partial mediation effect of choice of learning approaches on the relationship between *ELP* and *academic performance*. Hence, this can also be identified as a novelty.

5.2 Conclusions of the study

The results of the study indicate that *ELP* and *academic performance* are positively related. Accordingly, hypothesis H_1 , (there is a positive relationship between *ELP* and *academic performance*) was supported.

The mediation analysis shows a partial mediation effect by choice of learning approach on the relationship between the *ELP* and *academic performance*. Thus, hypothesis H_2 , (there is a mediating effect of choice of learning approaches on the relationship between *ELP* and *academic performance*) was supported. Hence, it can be concluded that there is a significant positive relationship exists between the *ELP* and *academic performance* with a partial mediation effect of choice of learning approaches. Therefore, the findings of the studies, Ghenghesh (2015) and Bobe and Cooper (2017) are extended by the results of this study.

The findings of the study draw insights for university administrators by emphasizing the effect of learning approach preferences in reaching a higher level of students' performance. Hence, these findings can be used in designing education policies and curricula in undergraduate degree programs. In addition, the findings of this study lead academics to develop pedagogical methods and learning material to improve the *ELP* of students. Further, the findings of this study act as a motivation factor and provide direction for undergraduates to improve *ELP* to achieve a higher level of *academic performance* as their choice of learning approach is impacted by their level of *ELP*.

5.3 Limitations and Recommendations for Future Research

The scope of the study is restricted to the final year management students at one Sri Lankan university. Further, the study used only management undergraduates of the University of Sri Jayewardenepura and therefore, it is recommended to extend the study to cover the students of other faculties of Sri Lankan universities and used the probabilistic method which provides a significant representation of all the districts of the country.

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