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)

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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

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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.
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 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 Stratis (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

<table>
<thead>
<tr>
<th>SLA</th>
<th>DLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivate</td>
<td>SLA</td>
</tr>
<tr>
<td>Strategy</td>
<td>DLA</td>
</tr>
<tr>
<td>Source: Adapted from Biggs, Kember and Leung (2001)</td>
<td></td>
</tr>
</tbody>
</table>

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 counties, 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

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

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.

![Conceptual Framework](image)

**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**
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variable</strong></td>
<td></td>
</tr>
</tbody>
</table>
| English language proficiency (*ELP*) | • 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 | • 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 (*DLA*) and surface learning approach (*SLA*) scales were measured using 10 corresponding indicators per approach (Refer to Note 2) |
| **Dependent Variable** | |
| Academic performance | • 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**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicator</th>
<th>No.</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DeepPer_Satis</td>
<td>11</td>
<td>Memo_KeySections</td>
</tr>
<tr>
<td>2</td>
<td>Own_Conclusions</td>
<td>12</td>
<td>Restrict_Study</td>
</tr>
<tr>
<td>3</td>
<td>Little_Work</td>
<td>13</td>
<td>Work_Hard</td>
</tr>
<tr>
<td>4</td>
<td>OnlyStudy_Course_Outlines</td>
<td>14</td>
<td>Find_Inters_Topic</td>
</tr>
<tr>
<td>5</td>
<td>Feel_Interesting</td>
<td>15</td>
<td>Glance_Through_Topic</td>
</tr>
<tr>
<td>6</td>
<td>Spend_EXTRA_Time</td>
<td>16</td>
<td>NotExpect_Studing_Material</td>
</tr>
<tr>
<td>7</td>
<td>Minim_Work</td>
<td>17</td>
<td>Want_Answering</td>
</tr>
<tr>
<td>8</td>
<td>Learn_Memorizing</td>
<td>18</td>
<td>Looking_Suggest_Reading</td>
</tr>
<tr>
<td>9</td>
<td>Times_Exciting</td>
<td>19</td>
<td>Nopoint_Learning_Material</td>
</tr>
<tr>
<td>10</td>
<td>Test_Import_Topics</td>
<td>20</td>
<td>Remem_Answers_LikelyQuest</td>
</tr>
</tbody>
</table>

Accordingly, a collection of 5 questions was used to measure each sub-scale as deep motive, 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 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.

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>
<thead>
<tr>
<th>Sub-scale</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep motivate</td>
<td>2.724</td>
<td>1</td>
<td>5</td>
<td>1.224</td>
</tr>
<tr>
<td>Deep strategy</td>
<td>2.838</td>
<td>1</td>
<td>5</td>
<td>1.298</td>
</tr>
<tr>
<td>Surface motivate</td>
<td>2.932</td>
<td>1</td>
<td>5</td>
<td>1.266</td>
</tr>
<tr>
<td>Surface strategy</td>
<td>3.056</td>
<td>1</td>
<td>5</td>
<td>1.247</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Overall GPA of the student</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General English</td>
<td>.641**</td>
<td>.000</td>
</tr>
<tr>
<td>Business Communication</td>
<td>.700**</td>
<td>.000</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic performance</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>DLA</td>
<td>0.957</td>
<td>0.963</td>
</tr>
<tr>
<td>ELP</td>
<td>0.870</td>
<td>0.939</td>
</tr>
<tr>
<td>SLA</td>
<td>0.956</td>
<td>0.962</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Construct</th>
<th>Academic performance</th>
<th>DLA</th>
<th>ELP</th>
<th>SLA</th>
</tr>
</thead>
</table>

Table 8: Fornell and Larcker criterion

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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 ($R^2$)

As per Hair et al. (2014), $R^2$ 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), $R^2$ 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

<table>
<thead>
<tr>
<th>Academic performance (Single item construct)</th>
<th>1.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLA</td>
<td>0.642</td>
</tr>
<tr>
<td>ELP</td>
<td>0.715</td>
</tr>
<tr>
<td>SLA</td>
<td>-0.740</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DLA</th>
<th>0.849</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELP</td>
<td>0.940</td>
</tr>
<tr>
<td>SLA</td>
<td>0.847</td>
</tr>
</tbody>
</table>

Source: Author Constructed
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

<table>
<thead>
<tr>
<th>Path Coefficient</th>
<th>Original Sample (O)</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELP -&gt; Academic performance</td>
<td>0.494</td>
<td>0.000</td>
</tr>
<tr>
<td>ELP -&gt; DLA</td>
<td>0.299</td>
<td>0.000</td>
</tr>
<tr>
<td>DLA -&gt; Academic performance</td>
<td>0.237</td>
<td>0.004</td>
</tr>
<tr>
<td>ELP -&gt; SLA</td>
<td>-0.456</td>
<td>0.000</td>
</tr>
<tr>
<td>SLA -&gt; Academic performance</td>
<td>-0.329</td>
<td>0.000</td>
</tr>
</tbody>
</table>

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.
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, $a_1 \times b_1$ was considered an indirect effect via DLA, and $a_2 \times b_2$ 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 ($a_1 \times b_1 + a_2 \times b_2$) = the total effect
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).

![Serial mediation model](image-url)

**Figure 4: Serial mediation model**

According to Table 10, total indirect effect of \( ELP \rightarrow Academic \) performance shows as 0.221 (\( p<0.05 \)) which is at 5% significance including both indirect effects of \( ELP \rightarrow DLA \rightarrow Academic \) performance and \( ELP \rightarrow SLA \rightarrow Academic \) 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 \( ELP \rightarrow Academic \) 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* -> *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* -> *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* -> *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*-> *Academic performance* = 0.237 (p<0.01)), and significant negative relationship between *SLA* and *academic performance* (GPA) (*SLA* -> *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 H₁, (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 H₂, (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 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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