FACTORS INFLUENCING ACADEMIC ACHIEVEMENT AMONG BUSINESS ADMINISTRATION STUDENTS OF PUBLIC HIGHER LEARNING INSTITUTIONS (PHLIS)

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Abstract

PHLIs provide education that will maximize individual potential especially in disseminating knowledge that will enable graduates to perform their job effectively. However, not much research that studies factors influencing academic achievement of Business Administration students especially in Malaysian context have been undertaken. This research can provide a perspective on how to look into academic and social contexts and the effect of individual differences towards students' academic aspect. Astin's Input-Environment-Output (I-E-O) model is adapted to explain relationships between academic achievement and students input and learning environments. The model allows analysis of each component's contribution on academic achievement. Involvement theory which posits that students' development is related to the quantity and quality of their involvement in various academic and social activities are explored in the research. Inferential statistics involve are t-test, ANOVA and stepwise multiple regression. Regression analysis shows that input factors are the major contributor for academic achievement. Academic is achievement also show significant differences when compared based on PHLIs, gender, race and students' entry qualification. Finally, the researcher highlights implication of the findings towards students, academicians and administrators of PHLIs.

Introduction

PHLI carries the responsibility of producing human resource towards enhancing the development and progress of a country. It offers courses and programs that initiate and enhances excellence among the students. Hence, it is most important to ensure that the graduates of PHLI's fulfill the expectations of the market especially in terms of the knowledge acquired. As stated in Abdul Halim et al. (1991), the objective of tertiary education is not only to prepare

students with knowledge of substance of their field but most importantly is to enhance autonomous and innovative interest of their field in fulfilling the demands of the society.

Background of Study

In the present business environment, economic institutions and business managers have to act spontaneously and effectively. Sufficient knowledge in all aspects of business is vital to ensure that problems and crises are handled effectively. Henceforth, it is essential to ascertain that the right human resources are carefully selected to implement and carry out the responsibilities to achieve the aims of the organizations. Employers are critical towards the employees' attributions and contributions towards their business due to the increasing competition caused by globalization and knowledge-based economy (Faridah 2000). In addition, employers question the quality of business management graduates because many lack the quality needed for the challenging business environment and take a long time before they can contribute to organizations.

There are not many researches on students' involvement and effort, and that shows its impact to academic achievement especially in Malaysian context. Studies that attempt to assess factors that contribute to the mastery of knowledge and skills are also hard to find (Noor Azizi et al. 2001; Mohd Salleh et al. 1997). In short, this study will identify factors that influence academic achievement of Business Management students based on their cumulative grade point average (CGPA). The CGPA will also be compared based on institution, gender, race and entry qualification.

Research Questions

i) What are the input and environment factors that influence the academic achievement (CGPA) of Business Administration students and how significant is the influence?

ii) Are there significant differences in min scores of students' academic achievement (CGPA) in relation to PHLI, gender, race and students entry qualification?

I-E-O Model

The researcher adapted Astin's (1993, 1998) Input-Environment-Output (I-

E-O) model to describe the relationship between input and educational environment with educational outcome. Astin stated that development is strongly related to students' educational environment as well as the academic programs. The relationship can explain involvement theory which is evaluated using I-E-O model. According to the theory, a program will have the intended effect if the student is assured to put enough effort to establish learning and development.

In their review of various researches, Pascarella and Terenzini (1991) conclude that learning can be influenced by factors such as gender, ethnic, academic ability, career aspiration and parents' occupation. Academic preparation is also associated with students' involvement at higher learning institution (Abbott 1988). Involvement contributes to academic achievement differently for students of different races (Kuh, Hu & Vesper 2000). Chau (2001) reported that family background such as social status and parents' occupation and income explains learning more than educational setting. On the other hand, the quality of effort in teaching and learning, interaction with friends, co-curriculum activities, writing and good grades in Science can predict learning outcomes more than demographic variables (Konrad 2002). In addition, active and collaborative learning explain achievement in both, male and female students (Kuh, Pace & Vesper 1997).

In this study, input is divided into two groups. The first group is the demographic criteria such gender, race and socio-economic status. The second group consists of pre-college educational attainment and highest qualification prior to joining the Bachelor of Business Administration (BBA) program. The environment include academic and social aspects such as academic facilities, course content, teaching and learning, interaction with lecturers, interaction with peers, academic effort, co-curriculum activities and instrumental tactics. The variable output consists of educational achievement via the CGPA.

Methodology

Questionnaires are distributed to final year BBA students of PHLIs. A 5-point Likert scale system is used to assess the environment factors. Scale 1 represents "Very unsatisfactory" or "Very disagree" conditions whereas scale 5 represents "Very satisfactory" or "Very agree" conditions. A total of 538 questionnaires are accepted for analyses.

Independent and Dependent Variables

The independent variables are divided into two blocks. Variables in the first block are gender, grades in Bahasa Melayu, English, Mathematics, Science as well as Business Subject at the Malaysian Certificate of Education level, entry qualification, parents' occupation and occupational aspiration. Variables in the second block are academic facilities, course content, teaching and learning, interactions with lecturers, interaction with friends, co-curriculum, academic effort and instrumental tactics. The dependent variable is CGPA.

Descriptive and Inferential Statistics

Descriptive statistics such as frequency count, mean score and standard deviation (SD) are used to explain the data. Environmental factors are described based on the level of satisfaction and agreement as reported from feedbacks. The interpretation of the level of satisfaction and agreement is based on the interpretation of mean scores using the Nunnally formula (1978). The inferential statistical method of measurements that are incorporate in the study include the test t-test, analysis of variance (ANOVA) and stepwise multiple regression.

Respondents' Profile

Table 1 Respondents' Distribution

CATEGORY		**PHLI I**	**PHLI II**	**PHLI III**	**PHLI IV**	**TOTAL**
GENDER	MALE	21	31	17	37	106
	FEMALE	107	112	79	134	432
RACE	MALAY	33	115	41	99	288
	CHINESE	80	13	46	63	202
	INDIAN	10	3	6	5	24
	OTHER	5	12	3	4	24
ENTRY QUALIFICATION	SPM	2	-	-	-	2
	STPM	97	23	53	101	274
	MATRIC	22	106	31	63	222
	DIPLOMA	7	14	12	7	40
FATHER'S OCCUPATION	LOW SEES	92	95	59	119	365
	MEDIUM SEES	27	37	28	41	133
	HIGH SEES	9	11	9	11	40
MOTHER'S OCCUPATION	LOW SEES	113	124	78	151	466
	MEDIUM SEES	13	16	15	17	61
	HIGH SEES	2	3	3	3	11

Table 1 illustrates distribution of respondents. For the purpose of further analysis, the Indian category is combined with other races. In addition, the SPM category is combined with the STPM category. Based on mothers' occupation, the high SES category and the middle SES category are grouped together due to the small number of respondents in these categories.

Questions 1

The stepwise multiple regression analysis is carried out to identify the relationship and contribution of the independent variables (input and environment factors) towards the dependent variable (output factor). Seven independent variables correlate and contribute significantly ($p<0.05$) towards CGPA (Table 2). Input variables such as race, Mathematics, English, Science and Business Subject contribute 47.0%, 5.6%, 1.1% and 0.7% towards CGPA respectively. In addition, independent variables such as instrumental tactics and interaction with friends contribute 0.7% and 0.4% respectively. The result clearly shows that input factors contribute 56.5% whereas the environment factors contribute 1.1% in explaining CGPA. The multiple correlations between CGPA and the significant independent variables are at 0.759. the R value of 57.6% reflects the contribution of all the independent variables selected. Analysis of variance (ANOVA) is $F(7,530) = 103.022$, $p<0.05$.

Table 2: Regression Analysis for Factors Influencing CGPA

Factors (X)	B	Beta (β)	R2 Change	t	sig. t
Race	.479	.490	.470	13.971	.000
Mathematics	.050	.209	.056	6.087	.000
English Language	.036	.158	.021	4.958	.000
Science	.023	.095	.011	2.954	.003
Business Subject	.108	.094	.007	3.115	.002
Instrumental Tactics	-.075	-.101	.007	-3.239	.001
Interaction with Friend	.064	.065	.004	2.244	.025
Multiple correlation	.759	df = 7		F = 103.022	
R square (R2) = .576	Adjusted R square (R2) = .571			sig F = .000	

Question 2

Ho^1 There is no significant difference in mean scores of CGPA based on PHLI.

Levene test is carried out to ensure assumption of homogeneity of variance (Green & Salkind 2003; Tabachnick & Fidell 1996) is met. Levene test is significant which means the variances involved are different. Hence, Dunnett's C test which takes into account the variation of variances is done to evaluate differences of mean scores. One-way ANOVA test (Table 3) is significant, $F(3,534) = 38.581$, $p<0.01$. This proves that there are significant differences in academic achievement among the PHLIs involved. Dunnett's C test (Table 4) shows differences between PHLI I and PHLI II (mean difference .511), PHLI I and PHLI IV (mean difference .293), PHLI II and PHLI III (mean difference -.455), PHLI II dan PHLI IV (mean difference -.218), and PHLI III and PHLI IV (mean difference .237). Students of PHLI I score higher CGPA compare to those from PHLI II and PHLI IV. Students of PHLI III and PHLI IV score higher CGPA compare to their counterpart at PHLI II. Lastly, students from PHLI III score higher CGPA compare to those from PHLI IV.

Table 3 One-Way ANOVA for CGPA based on PHLI

Independent Variable	d.f.	F	sig.
CGPA	3	38.581	.000**

** significant at confidence level of 0.01

Table 4 Post Hoc Dunnett's Test for CGPA Based on PHLI

Group	PHLI I	PHLI II	PHLI III	PHLI IV
n	128	143	96	171
Mean	3.143	2.633	3.087	2.850
s.d	.492	.360	.388	.460
PHLI I		*		*
PHLI II	*		*	*
PHLI III		*		*
PHLI IV	*	*	*	

* significant at confidence level of 0.05

HO[2] There is no significant difference in mean scores of CGPA based on gender.

T-test (Table 5) is carried out to differentiate the CGPA among the male and female students. The score of male students' CGPA is 2.820 whereas the female students 2.925. The t-test is significant and this shows that there is a significant difference between the two scores with values of t (536) = -2.049, $p<0.05$. Hence, female students' academic achievement is better than their male counterpart.

Table 5 T-Test of Students' CGPA Based on Gender

Independent Variable	Gender	n	mean	s.d.	d.f.	t	sig.
CGPA		106	2.820	.499	536	-2.049	.041*
	F	432	2.925	.467			

*significant at confidence level of 0.05

HO[3] There is no significant difference in min scores of CGPA based on race.

Levene test is not significant which means the variances involved are about the same. Hence, the Tukey-HSD test is carried out to evaluate the min score difference. The one way ANOVA test is significant, F (2,535) = 246.866, p<0.01 (Table 6). This shows that there are significant differences in CGPA based on race. A post hoc Tukey-HSD (Table 7) shows significant differences (p<0.05) between the Malay and the Chinese students (mean difference -.696), Malay and Indian and other races (mean difference -.168) and Chinese and Indian students (mean difference .528). Both the Chinese and Indian students score higher CGPA compare to the Malay students. In addition, the Chinese students score higher CGP compare to the Indian students.

Table 6 One-Way ANOVA for CGPA Based on Race

Independent Variable	d.f.	F	
CGPA	2	246.866	.000**

** significant at confidence level of 0.01

Table 7 Post-Hoc Tukey HSD for CGPA Based on Race

Group	MALAY	CHINESE	INDIAN
n	288	202	48
Mean	2.628	3.324	2.796
s.d	.351	.338	.314
MALAY		*	*
CHINESE	*		*
INDIAN	*	*	

* significant at confidence level of 0.05

HO4 There is no significant difference in min scores of CGPA based on students' entry qualification.

The Levene test for CGPA based on student's entry qualification is significant. This shows that there is variation among variances involved. Therefore, interpretation of mean scores differences is based on Dunnett's C (Green & Salkind 2003). The One-way ANOVA (Table 8) for CGPA based on entry qualification is significant, F (2,535) = 41.698, p<0.01. This fact shows that there are differences in CGPA among students based on entry qualification.

The post hoc Dunnett's C (Table 9) shows significant variation (p<0.05) between scores of students with STPM to those with matriculation qualification (min difference .362) and scores of students with matriculation qualification to those with Diploma (min difference -.273). Based on these min differences, it can be conclude that students with either STPM or Diploma qualification show better achievement at PHLI compared to those with Matriculation qualification.

Table 8 One-Way ANOVA for CGPA Based on Entry Qualification

Independent Variable	d.f.	F	sig.
CGPA	2	41.698	.000**

** significant at confidence level of 0.01

Table 9 Post-Hoc Dunnett's C for CGPA Based on Entry Qualification

Group	STPM	MATRIC	DIPLOMA
n	276	222	40
Mean	3.060	2.698	2.971
s.d	.503	.347	.470
STPM		*	
MATRIC	*		*
DIPLOMA		*	

* significant at confidence level of 0.05

Discussion of Findings
The Contribution of Input and Environment Factors Towards CGPA

Studies have shown that both the individual traits as well as environments influence the development of a student (Pascarella & Terenzini 1991; Astin 1988, 1993). In this study, input variables explain 56.5% variation in students'academic achievement. On the contrary, the variable environments explain only 1.1% variation. This is congruent with a study by Opp (1991) who identified that the input factors are the main contributors towards variation in NTE test achievement. In other studies, Watson (1994) and Donovan (1984) found that students' background factors are less influencial in comparison to the environment factors.

CGPA is found to be influenced by positive interaction with peers. Similarly, Kuh, Pace and Vesper (1997) found that active as well as cooperative learning influence male and female students' academic achievement. Henceforth, effort should be carried out to promote active teaching-earning environment between students and educators. This is because educators have direct contact with the students. To add, effort should be made to increase the quantity and quality of students-peers interaction as well as students-lectures interactions.

Implications

- Students should know about the input and surrounding factors that empirically influence their cognitive development. This will allow them to put in more quality and quantity effort towards these factors throughout their studies in the PHLI. In addition, better planning and preparation can be made to overcome their weaknesses.
- Satisfaction in all aspects of college experiences has positive correlations with achievement on various aspects. Academicians should provide more interpersonal opportunities and experiences for the students to enhance learning as well as students' involvement.
- University administrators should prepare programs to elevate students' motivation, provide opportunities for students, set up conducive teaching and learning environment,

promote effective teaching processes and offer academic guidance for students. University's policy and practice should be of those whereby learning atmosphere exists and students' responsibility as well as students' active involvement in activities is encouraged.

- Facilities such as tutorials, library and computer laboratories must be improved to ensure students will be able to maximize its usage to the optimum. Computer labs have to have access to variety of valuable information whether it is local or international news. Resources in the library have to updated and should consist of variations such as sufficient reference materials, journals as well as research reports.

Summary

This study has applied the I-E-O model to find out the influence of input and surroundings towards the development of Business Management student of PHLI from the aspect of academic achievement (CGPA). Input factors were found to have positive correlation with academic achievement (CGPA). Students' background such as race, grades in Mathematics, English, Science and Commerce play a crucial role towards students' choice of programs and the ability to follow these programs. The involvement of students in various activities in PHLI has yet to show signs of contribution towards students academic. However, activities that enhance interaction among students' peers contributed to academic anhancement even though not as strong as input factors.

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