Impact of Varying Entry Behaviour on Students' Academic and Psychological Outcomes in Higher Education: The Case of PPC and FPC Students at Debub University

Demewoz Admasu[1] Mehadi Abdo[2] and Tesfaye Semela[3]

Abstract: The aim of the study is to investigate the impact of varying curricular experiences on the psychological well-being and academic achievement of students of higher education in the Ethiopian context. The target population was first-year students who were admitted to the Debub University possessing different entry behaviours. The first group includes those admitted in 2003/4 academic year after two years of pre-university preparatory programs in secondary schools based on the results of the University Entrance Examinations (UEE) (or the PPC group) and the other batch was admitted in 2002/03 based on the ESLCE results (the FPC group). A representative sample was drawn from four randomly selected faculties and colleges affiliated to the Debub University. Data was interpreted using bivariate and multivariate statistical analyses. The results show that PPC and FPC students differed to statistically significant extent in academic self-concept and academic achievement in favour of the latter. However, no variation was found in perceiving the way how their instructors treat them in class. Generally, achievement at the university was significantly predicted ($p<.05$) by academic self-concept (ASC), perceived instructors treatment (PTT), entry behaviour, and gender. Moreover, majority of the students from PPC group expressed dissatisfaction over their merger with their FPC counterparts ($\chi^2=48.2$, df =1, $p<.0001$). Implications of the findings for planning instruction in HEIs are discussed.

Introduction

The newly introduced educational reform has brought two groups of students with the same course requirements to the Ethiopia Higher Education Institutions (EHEIs). These groups vary in terms of their secondary school curriculum experiences. One group of students enrolled in the 2002/03 academic year was those admitted under the previous four-to-five year undergraduate degree program. The other group of students has admitted under the new arrangement having

[1] Lecturer, Dept. of Education, Kotebe College of Teacher Education
[2] Lecturer in Curriculum and Instruction, Dept. of Pedagogical Sciences, Faculty of Teacher Education, Debub University
[3] Assistant Professor, Dept. of Rural Development and Family Science, Debub University

undergone a two-year pre-university preparatory program and expecting a three to four years university education including those admitted to medical schools having a revised five-year MD curriculum.

At Debub University, as it is the case in similar institutions of higher learning, the two groups were taught together despite their varying curricular experiences. The first group of students is commonly classified as: First-year after completing pre-university preparatory program (PPC* for short), while the second group is designated as first-year after completing the freshman program (FPC* for short). In spite of this fundamental variation in entry characteristics, the two groups were taught and assessed on the same footing.

This paper posit that the equal treatment of these groups of students having varying curricular experiences should have affected their academic achievement, their psychological well-being as well as their academic self-concept. Instructing these groups together seem to overlook the basic difference in their previous experiences and it ruled out the fundamental step in planning any instructional program. It can be argued, therefore, that merging the two groups of students having differing educational background in the same classroom on the assumption that the pre-university program would compensate the freshman program was inappropriate. This should not be interpreted to mean that the PPC group is not fit to be educated in higher education institutions. If rather means the FPC group had the advantage over PPC group due to the one year stay on campus and the fact that the average Grade Point Average (GPA) for admission was significantly lower for the PPC category [GPA of 2.00 and 101 on University Entrance Examination (UEE)]. When attending classes together, students of the PPC group would be at an apparent disadvantage because of the novelty of the material to be learned since it was not actually the same for both categories of students.

* PPC – Preparatory Program Complete.
* FPC – Freshman Program Complete.

On the basis of the above argument, the present study attempts to examine the impact of possessing varying curricular experiences (i.e. entry behaviour) on students' academic and psychological outcomes in the context of a tertiary education institution. This helps to devise strategies to deliver quality higher education in the future based on the experiences of the past.

Objectives

The following were objectives of the study:

- Examining whether or not the existing University Entrance Examination (UEE) predicts success at Debub University.
- Investigating the degree to which variations in entry behaviour (PPC vs. FPC) produced real differences in academic achievement at the university as measured by a two-semester cumulative Grade Point Averages (CGPA).
- Uncovering the extent to which entry behaviour influences students' psychological well being i.e. in terms of self-concept of ability and their perceived instructors' expectations about their academic abilities.
- Examining whether or not gender differences exist in academic self-concept, perceived teachers' treatment, and academic achievement?

Review of Related Literature

In this section, an attempt is made provide a theoretical and empirical backdrop to the present study. Accordingly, relevant studies have been adequately reviewed to establish the link among the study variables. In particular, research results that assessed the existence of a systematic relationship between students' characteristics with the level of academic achievement, teacher expectations, and academic self-concept are dwelt upon.

Instructors' Expectation and Academic Achievement

There is sufficient evidence to suggest that teachers' classroom behaviour and expectations about students' performance directly predict subsequent academic achievement (Cooper, 1979; Copper, Findley and Good, 1982; Carr and Kurtz-Costes, 1994). On the other hand, teachers do not behave in quite the same way across situations and across varying individuals or groups of students. Likewise, young people, are found to accurately perceive instructors' perception of themselves and other students (Weinstein, 1985; Weinstein, Marshall, Sharp and Botkin, 1987). Accordingly, college students experience varying levels of expectation of their instructors. The perceptions of varying levels of expectation from their instructors, in turn, influence their academic self-concept (Burns, 1982).

Thus, the proposed study attempts to find out to what extent college students' perceive their teachers expectation about their ability as a result of the function of their entry behaviour. Furthermore, it endeavours to uncover the extent to which college instructors' expectations of their students mediate the relationship between entry behaviour and achievement in college.

Academic Self-Concept: Conceptualisation and the Link with Academic Achievement

To start with, it is appropriate to provide a conceptual clarification about the psychological construct called *self-concept*. Self-concept is generally defined as an evaluated called of perceptions, beliefs and attributes that one has about himself or herself. More precisely, Hattie (1992:32) defines self-concepts as "knowledge and appraisals about aspects of self considered salient by the knower". According to Burns (1982), self-concept as a set attitude about the self is composed of two elements: *self-image* and *self-evaluation.* Hence, self-concept combines: (a) *self-image* – what the student sees when she/he looks at himself/herself, (b) *affective intensity evaluation* – how strongly the person feels about these various facets, and whether the

person has favourable/unfavourable attitudes of that image, and (c) *behavioural possibilities* – what a person is likely to do in response to his/her evaluation of himself or herself (Burns, 1982: 3)

Self-concept is one of the oldest and most important psychological constructs in the social/behavioural sciences (Marsh, 1990). The enhancement of self-concept and the benefits of feeling positively about oneself on choice, planning, persistence, and subsequent accomplishments transcend traditional discipline and cultural barriers. Maximizing self-concept is, therefore, recognized as both a critical goal and a means through which other important outcomes are achieved not only in educational settings, but also in diverse disciplines including child development, sport/exercise, health, social services, psychology, and management.

In their model of effective schools, Bookover and Lesszotte (1979) concluded that maximizing academic self-concept, self-reliance, and academic achievement should be the major goals of school systems. Endorsing this idea, renowned researchers in the area argue (Marsh, 1990; Marsh, Köller, and Baumert, 2001) that educational policy statements throughout the world list the development of positive self-concept as one of the most important goals of education. Therefore, studying academic self-concept is an important educational outcome that deserves consideration in educational psychology research. This is because, though self-concept begins to be formed from childhood, it continues to develop and start to solidify in adolescence. Hence, since college students are in this critical age, their academic performance may be affected by background characteristics such as varying entry behaviour or differing learning environment.

Self-concept, particularly in academic self-concept, as a general psychological construct is important in educational settings, found to be a reliable predictor of academic success or failure (Köller and Baumert, 2001; Lüdtke, *et al*., 2002; Marsh 1990; Marsh *et. al,* 2001). Specifically, an appraisal of academic competence made by students in the form of self-reports or self-concept has been shown to be

associated with important educational outcomes such as academic motivation and achievement. Byrne as cited in Byrne, Worth and Gavin (1996) having reviewed self-concept published until the early 1980s, concluded that there exists a positive correlation in areas of academic achievement and corresponding academic self-concept components. Subsequent studies also confirmed the existence of these relationships. Quite recently, studies found out a significant relationship between mathematics self-concept and mathematics achievement (Lüdtke, *et al.,* 2002; Köller, Shnabel, and Baumert, 2000; Köller and Baumert, 2001). Therefore, self-concept is considered to be an important variable in current research particularly in the field of educational psychology which has been used to explain and predict students' achievement and college major choice (Köller and Baumert, 2001; Lüdtke, *et al*., 2002; Marsh, 1990; 1991).

On top of the apparent predictive relationship between academic self-concept and achievement, students' school/classroom environment (for example, school environments with highly competitive class of students or with less competitive/low or achieving students) affect the development of students' academic self-concept differently. The section that follows discusses how the environment of learning (in this case, differing frames of reference) in relation to students' composition in their level of academic abilities affects academic self-concept and in turn academic performance.

The Impact of Differing Frames of Reference on Academic Self-Concept: *The Big-Fish-Little-Pond-Effect* and *Reflected Glory Effect*

Marsh (1990, 1991) has made a remarkable contribution by providing scientific explanation regarding the impact of students' perception of the classroom context in the development of their academic self-concept. Accordingly, he came up with two important phenomena whereby academic self-concept could be affected. They are: "*The big-fish-little pond effect*" (BFLP) and "*Reflected glory effect*". The metaphor BFLP describes the phenomena that two students who are

in the same academic performance levels but attending in different classrooms or schools with varying performance levels tend to have differing self-perception of their own abilities. In other words, the student (*a big fish*) in a school/class with a weak performance (*a little pond*) tends to have a higher self-perception of her/his abilities as compared to the student (*little fish*) in a school / class with a strong level of performance (*big pond)*. On the other hand, the impact of a *reflected glory effect* demonstrate that when students who have developed a positive self concept of their ability due to low level or average academic performance of their group gradually show a decline in their self concept when they discover the context has become highly competitive as they join college where there are more able students than themselves (Marsh, 1990).

Hypotheses

On the bases of the theoretical, empirical, and substantive observations discussed above, the following assumptions are formulated:

- In this study, we argue that PPC and FPC students had different frames of reference. FPC students have developed a frame of reference consistent with the ability level of freshman students during the first year of their university experiences. Similarly, PPC students did the same during the preparatory program. Thus, since the two groups had been exposed to varying educational environment whereby they developed differential sense of academic competence consistent with the ability level of a given group. Because of the fact that the cut-off-point for admission to the university was different for the two groups, it can be argued that average ability level of the two groups was different at the point of entry. The students' knowledge about the lowered GPA points for PPC group in relation to the FPC (GPA of 3.2 and above) group differentially affects their academic self-concept. Thus, an average achiever from FPC group is a '*big-fish*' among low ability class; correspondingly he/she would have an elevated academic self-

concept than an average achieving student from the PPC category.

- It is hypothesized further that, since the average admission requirement for the PPC category was significantly lower than that their FPC counterparts, it is expected that the latter would on average out-perform the former. In addition, since instructors' expectation of success depends on previous academic performance, the average FPC student would receive higher expectation of success than the average PPC student.

Research Methodology

Sample

The sample was drawn from randomly selected faculties and colleges (namely, Faculty of Teacher-Education, Faculty of Natural Sciences, Faculty of Technology, and Faculty of Public Health) of Debub University. The target population was all second year students who were admitted to the university possessing different entry behaviours. The first group includes all the PPC students who were admitted in the 2003/4 academic year after two years of pre-university preparatory programs in secondary schools and passed the University Entrance Examinations (UEE) after scoring, a GPA of 2.00 and above (1.80 GPA for girls) in the Ethiopian General School Leaving Certificate Examination (EGSLCE). The second category includes those who underwent a one-year freshman program (the FPC group) after successfully passing The Ethiopian School Leaving Certificate Examination (ESLCE).

The study participants were selected based on a multi-stage probability sampling procedure based on the location of the colleges and faculties. In step one, Awassa and Dilla were selected using a simple random sampling technique. In step two, overall, 325 students were randomly selected to participate in the survey. To ensure the

proportional representation of all faculties/colleges and departments within the University, a stratified random sampling procedure was used. However, relatively high non-response rate was seen among participants of the public health faculty. Finally, 254 respondents returned duly filled questionnaire. The response rate was 78.2% which is acceptable in educational research (Wiersma, 1995).

The distribution of the actual participants were as follows: 95 (37.4%) Dilla College of Teacher Education, 66 (28.0%) Faculty of Natural Sciences, 78 (30.8%) Faculty of Technology, and 14 (5.5%) College of Health Sciences.

Instruments of Data Collection

Data was collected using quantitative procedures. It was based on information obtained from students' performance records, academic self-concept, students' perception of teacher expectation about students' performance, and a questionnaire was used to collect students' socio-demographic characteristics.

Performance Records: High school completion results: The Ethiopian General School Leaving Certificate Examination (EGSLCE), and UEE scores for PPC category and scores on the Ethiopian School Leaving Certificate Examination (ESLCE) for FPC category. The criterion variables were a two-semester cumulative grade point average at Debub University (DU-CGPA) in the 2003/04 academic year.

Academic Self-Concept (ASC): A five-item measure of academic self-concept was adapted and translated into Amharic to assess students' self-assessment of their academic competence to succeed in college and university setting. A sample item of the measure include: "Given my ability, I don't' think that I would be able to complete my university education". The respondents rated the items on a five-point Likert-type "Agree-Disagree" scale. The internal consistency reliability of the ASC measure was found to be high (Cronbach alpha =0 .79)

Perceived Teacher Treatment (PTT): Students' perception of their instructors' expectation of their ability and probability of success in college was assessed based on a Likert-type "agree-disagree" scale that was developed by the investigators based on the conceptual framework and empirical evidence available in the existing literature (Cooper, 1979; Copper, Findley and Good, 1982; Brophy and Good, 1970; Tesfaye, 1997a). Sample item include: "Most of my instructors often expect me to score high grades". The internal consistency reliability for the 10-item measure was high (Cronbach alpha = .62).

Method of Data Analysis

The methods of data analysis used in this study comprised univariate, bivariate and multivariate statistical procedures. Specifically, descriptive statistics zero-order correlation, Chi-square test, F-test, and Moderated Hierarchical Multiple Regression Analyses were employed. Data entry and analyses was performed using SPSSWIN version 11.

Results

Descriptive Analysis

The following table shows the distribution of the study participants across selected demographic characteristics. The data show that four of the colleges/faculties of Debub University were fairly represented from among a total of 8 colleges and faculties. However, the proportion of participants was low due to high rate of non-response.

Table 1: Socio-Demographic Characteristics of Participants

Variables		N	%
Gender	Male	200	78.7
	Female	54	21.3
Age	20 or less	82	32.3
	21-25	165	65.0
	26-30	5	2.0
	Over 31	2	0.8
Marital status	Unmarried	241	94.9
	Married	13	5.1
Region	Addis Ababa	53	20.9
	Amhara	53	20.9
	Benishangule	3	1.2
	Diredawa	2	0.8
	Oromiya	79	31.2
	Harari	2	0.8
	SNNPAR	21	8.3
	Tigray	41	16.1
Faculty	DCTE	95	37.4
	FNS	66	26.0
	FT	78	30.8
	CHS	14	5.5
Residence	Rural	24	9.1
	Urban	230	90.9
	Overall	**254**	**100**

DCTE: Dilla College of Teacher Education
FNS: Faculty of Natural Sciences
FT: Faculty of Technology
CHS: College of Health Sciences

As depicted in Table 1, the study participants' were described by age, gender, region, and place of residence. Accordingly, males were well above three-quarter of the total sample (male = 78.7% and female = 21.3%). Seen in terms of age, about 97.0% of the study participants were less than 25 old. Nonetheless, the proportion of those reported to be married was only 5.1%.

The distribution across regions further reveals the under-representation of Benishangule which accounted for only 1.2% of the total participants, whereas, Amhara and Addis Ababa were represented by an equal proportion (20.9%). In terms of place of residence the overwhelming majority (90.9%) were from urban areas which reveal the minimal share of students with a rural background (8.1%). This is a rough indication of the disparity in participation at tertiary level disfavoring less developed regions and the rural young population since negligible segment of the eligible rural youth and disadvantaged regions are included in the randomly selected sample.

Career Choice

Among the most frequent reasons for the low performance of Debub University students' has been the fact that they have joined the institution against their choice or interest. The following table depicts the proportion of students who joined a given department with or without their choice.

Table 2: Did you choose the field that you are now attending at DU?

Responses	**PPC**	**FPC**	**Total**	$\chi 2$
Yes	112 (80.0)	63 (63.0)	175 (72.9%	
No	28 (20.0)	37 (37.0)	65 (27.1%)	8.52**
Total	**140**	**100**	**240**	

*p < 0. 01; *df* = 1, numbers in parenthesis are column percentages

Asked whether students have joined their respective streams as per their choices, 80.0% of the respondents from the PPC group said that they have chosen the department and only the remaining 20.0 % said that they did not. On the other hand, the picture seems a little different in case of FPC i.e. lesser proportion from FPC confirmed that they

have joined a field of their own choosing. As a result, the analyses showed significant differences between PPC and FPC ($\chi 2$ = 8.5, df =1; p < .01)

Table 3: Importance of the Induction Tutorial (PPC students)

Response	N	%
Very Important	17	11.9
Important	53	37.1
Undecided	40	28.0
Not important	18	12.6
Not at all important	15	10.4
Total	**143**	**100**

Asking PPC students about the importance of arranging a two-week tutorial program, the following results were obtained: Of the total 143 PPC students who responded to the item, 17 (11.9%) and 53 (37.1) said it was "very important", and "important" respectively, while 33 (23.0%) said it was not important. The remaining 40 (28.0%) respondents were, however, in undecided situation whereby they could not be definite about the importance or non-importance of the induction program. Taken together, however, it can be discerned that the majority 70 (49.0%) believed that the tutorial was important for their subsequent studies.

Table 4: Does the merger of PPC and FPC Affect your Performance?

Responses	PPC	FPC	Total	$\chi 2$
Yes	127 (75.6)	41(24.4)	168(73.7)	
No	15(23.6)	45(76.3)	60(27.3)	48.2**
Total	**142(62.3)**	**86 (37.7)**	**228(100)**	

** p < 0.0001, *df* = 1

Significant differences were obtained between PPC and FPC ($\chi 2$ = 48.2, *df* = 1; p < 0.0001) over the issue of merging the two groups.

Most PPC students (75.6%) said their merger with the FPC group negatively affected their grades while the FPC group did not see the merger as a problem.

Correlation

In order to find a bivariate relationship among the study variables and screen those that may have a stronger predictive relationship of success at university, a bivariate correlation analyses were run (see: Table 5). The results show that DU-CGPA was significantly correlated with all predictors except with “Age“and “Career Choice”. Significant correlation was observed with Gender ($r = -0.22$, $p < 0.05$), Residence ($r = 0.13$, $p < 0.05$), Program ($r = 0.46$, $p < 0.01$), National Examination (NE) ($r = 0.48$, $p < 0.01$) College Entrance Examination (UEE) ($r = 0.40$, $p < 0.01$), Academic Self-Concept (ASC) ($r = 0.42$, $p < 0.01$), and Perceived Teachers’ Treatment (PTT) ($r = 0.24$, $p < 0.05$) .

This shows that College Entrance Examination (UEE) and ESLCE and EGSLCE both being national examinations for completion of the Ethiopian general education in the old and new education system were respectively found to significantly predict success at the university. In addition, academic self-concept (ASC) and perceptions of teachers’ treatment (PTT) were found to be significant predictors of achievement at Debub University.

Table 5: Inter-correlation matrix of selected study variables

Variables	1	2	3	4	5	6	7	8	9	10
Age	-	-.15*	.09	.29**	-.04	-.33**	.07	-.04	-.02	.09
Gender		-	-.09	.06	.25**	-.24**	.02	-.19**	-.04	-.22*
Residence			-	.14*	-.07	-.13	-.04	-.07	.04	.13*
Program				-	-.48**	-.07	.20**	.23**	.10	.46**
NE					-	-.58***	.05	-.30**	-.13*	.48**
UEE							-24**	.40**	.17	.40**
Career Choice							-	-.06	-.08	..00
ASC								-	.42**	. 42**
PTT									-	.24*
DU-cGPA										-

* p< .05; ** p < .01; *** p < .001

Note: Data coding was made as follows: **Gender**: female = 1, male = 0; **Residence** urban =1; otherwise=0; **Career choice** = joined with own choice = 1; otherwise = 0;

ASC = Academic Self-Concept Score; PTT = Perceived Teachers' Treatment Score.

PPC and FPC: Differences in Achievement and Academic Self-Concept

One of the major objectives of the present study was to examine whether differences exist in academic achievement and academic self concept between PPC and FPC groups. Table 6 summarizes the results of the t-test computed.

Table 6: Means, SDs, and t-test results computed for DU-GPA and ASC

Variables	Group	N	Mean	SD	t
DU-GPA	PPC	144	2.65	1.15	-.8.15***
	FPC	106	3.78	1.00	
ASC[a]	PPC	144	19.30	4.03	-3.69**
	FPC	103	21.10	3.46	

[a] Maximum possible score for ASC measure was 25

** p < 0.01; ***p < 0.001

The data reveal that FPC students were superior in academic achievement as well as academic self-concept. On average, an FPC student (Mean = 3.78, SD= 1.15) outperformed his/her PPC (Mean = 2.65; SD = 1.00) counterpart. A similar scenario is apparent when one looks into academic self-concept scores. An average PPC student reported to have a lower self-concept compared to an FPC student. Nonetheless, the average ASC score of PPC students was above the average (Mean = 19.3; SD = 4.03). However, it was markedly low compared with their FPC counterparts (Mean = 21.1; SD = 3.46).

Gender Differences: Teachers' Treatment, Academic Self-Concept and Achievement

It was documented that gender differences disfavoring female students were found with respect to academic self-concept (Tesfaye, 2004) and perceived teachers' treatment (Tesfaye, 1997). The present study also addressed to what extent females and males differ in their academic performance (taking their CGPA at the university as a dependent variable) perceiving their instructors' treatment and their self-concept of academic ability.

Table 7: Means, SDs, and t-test Results Computed for DU-GPA and ASC by Gender

Variables	Group	N	Mean	SD	t
DU-CGPA[a]	Male	197	2.73	1.21	-.3.49**
	Female	54	3.78	1.71	
PTT	Male	194	34.67	5.22	0.55(*ns*)
	Female	53	34.21	6.06	
ASC	Male	194	20.46	3.81	-3.12**
	Female	54	18.63	3.88	

** $p < 0.001$;

[a] DU-CGPA was based on rating the category: Excellent: 3.5 and above = 5; Very good: 3.00 - 3.49 = 4; Good: 2.5 – 2.99 = 3; Pass: 2.00-2.49 = 2; and Fail: below 1.99

As can be seen from Table 7, males outperformed females in academic self-concept ($t = -3.12$, $p < 0.001$) and academic achievement ($t= -3.49$, $p <0.001$); while no difference that achieved a statistical significance ($t = 0.55$; *ns*) was found in perceiving how their instructors treat them.

Regression Analyses

In order to reveal those factors that are significant in determining the two groups' performance at the university, a multiple regression analyses were run in three steps.

As shown in Table 8 below, *Step I* portrays the regression coefficients of demographic variables – Gender, age, and residence. Apparently, all are found to be significant predictors of academic achievement (in this case DU-CGPA). Male students achieve higher than females (because the regression coefficient is negative for gender variable: $\beta = -0.200$, $p < 0.01$). Students who attended high school in urban areas outperformed their rural ($\beta = 0.129$, $p < 0.05$) counterparts, and older students scored higher than younger ($\beta = 0.021$, $p < 0.05$) ones (the maximum age being 31). The overall contribution of these variables that built the equation in *Step I* was statistically significant ($R^2 = 0.06$, $p < .01$). In this regard, gender has significantly but inversely predicted achievement at university. This is because; female students scored lower than males. Similarly, students with rural backgrounds are generally underachievers.

Table 8: Hierarchical Multiple Regression with CGPA as a Dependent Variable

Variables	*Step I*		*Step II*		*Step III*	
	B	**β**	**B**	**B**	**B**	**β**
Gender	-0.59	-0.20**	-0.55	-0.19**	-0.47	-0.16**
Residence	0.38	0.13*	0.025	0.09	0.22	0.08
Age	0.05	0.02*	-0.019	-0.08	-0.13	-0.05
NE[a]			-0.028	-0.24***	-0.21	-0.18**
Program[b]			0.092	0.37***	0.85	0.35***
ASC					0.06	0.17**
PTT					0.02	0.10*
R^2		0.06		0.33		0.38
adj. R^2		0.05		0.32		0.36
R^2 Change		0.06*		0.27**		0.05**
Df		3		2		2

* p < 0.05; ** p< 0.01; *** p < 0.001

[a] NE = National Examination- represents the Ethiopian School Leaving Certificate Examination (ESLCE) in the case of the FPC group; while in the case of the PPC it refers to the Ethiopian General School Leaving Certificate Examination (EGSLCE)

[b] Program – represents the variations indicating the two groups: One underwent the pre-university preparatory program (PPC) and the other group the freshman program (FPC).

In *Step II*, achievement in national examinations [ESLCE for FPC group and EGSLCE for PPC group] and type of program [Preparatory (PPC) vs. Freshman (FPC)] were found to be good predictors of success at tertiary level. Specifically, the regression coefficients indicated that national examination (β = 0.24, p < 0.001) and type of program (β = 0.37, p <0.001) were found to be significant predictors. In other words, high scores either in ESLCE or EGSLCE were associated with high GPA at the university. Regarding program variable, on the average, FPC group achieved higher than their PPC counterparts.

The inclusion of the above two variables in *Step II* substantially boosted the magnitude of explained variance to 33.3% with additional

contribution of 27.0 % (R^2 Change = 0.27, $p < 0.001$) of the added variables.

In *Step III*, psychological variables, specifically academic self concept (ASC) and perceived teacher treatment (PTT) scores were added to the equation. Both variables were found to have meaningfully predicted achievement (ASC: $\beta = 0.17$, $p < 0.01$; PTT: $\beta = 0.10$, $p < 0.01$). The increase in the overall prediction can also be rated as significant (R^2 Change = 0.046, $p < 0.01$).

On the other hand, the entry of the NE and Program variables had a diminishing effect on the strength of Age and Residence. A closer look at Table 8 reveals that Age and Residence have lost their statistical significance in Step II. This may be due to the moderating effect of previous achievement in the National Examinations (NE) depicting that a student with high scores in ESLCE or EGSLCE would not be affected by his/her rural background to achieve high at university. A similar argument applies to the diminished effect of Age on university achievement. However, the effect of Gender variable was found to retain its strength despite the mediating effect of academic-self-concept (ASC) and perceived teachers' treatment (PTT). This is partly because female students, on average scored significantly lower than their male counterparts (Table 7). Therefore, the effect of gender persisted despite the effect of motivational variables such as academic self-concept.

In short, student gender, scores in national examination (ESLCE or EGSLCE GPA), academic self-concept (ASC) were found to reliably predict success at Debub University. In other words, female students more than males, low achievers in national examination, students having low academic self-concept and students who perceived unfavorable perception of teachers' classroom treatment (or behavior) achieve lower than those who perceived favorable treatment.

Conclusion

On the basis of the results presented in part three, significant findings have emerged. These include: (1) the effect of entry behavior i.e. difference between PPC and FPC students in academic self-concept (ASC), and academic achievement (as measured by their CGPAs at Debub University), the usefulness of the induction tutorial, and attitudes about the merger of the PPC and FPC groups for instruction and evaluation. (2) Gender effects on academic achievement, academic self-concept, and perception of instructors' treatment.

The Impact of Variations in Entry Behavior

The present study found important results that can be attributed to variations in students' entry behavior. These include differences in achievement and academic self-concept. With regard to achievement differences which were based on a cumulative grade point average of the first and second semester scores in the 2003/04 academic year on average, the students from the FPC category achieved significantly higher than their PPC counterparts. Similarly, PPC students generally rated themselves as having low academic self-concept as compared to the FPC students. This is consistent with the recent psychological literature in a sense that low academic self-concept goes with low academic achievement or performance (Marsh, 1990). However, one important empirical finding in self-concept research is described as: "Big-fish-little-pond effect". A metaphor represents the phenomena that students who scored above average in low ability group or class normally report high academic self-concept. On the other hand, a student who achieve low in high ability classroom but still better than the one who scored high in low ability class normally report low academic self-concept than the student who actually scored lower than did his/her counterparts in the high group. This difference in academic self-concept between these two individuals is caused by the context in which they attended the courses. Linking this notion with the study context, it should be noted that the FPC students as a group have high ESLCE GPA than do the

PPC group– the minimal GPA being 3.4 for boys and 3.2 for girls in the FPC group.

On the contrary, in 2003/04 the minimum admission criteria for PPC group to join HEIs was 101 out of 500 in National University Entrance Examination (UEE). Therefore, it is hard to argue that these groups were drawn from the same population of students to begin with. The superiority of the FPC in the group average by itself boosts their academic self-concept simply due to the '*big fish-little-pond'* phenomena (Marsh, 1990). Moreover, to the disadvantage of the PPC group, students in the FPC category have spent one year at the university and they are familiar with routines of the university system. Thus, due to the direct effect of academic self-concept on academic achievement (not to mention the fact that additional experiences as a freshman student), the merger of these groups with different entry behavior was not appropriate and proved to have adversely affected the PPC group's academic self-image and achievement at the university. This has been clearly revealed by the PPC students' reaction about the merger of the two groups, the majority rating it as wrong (76.5%). Of course, most PPC students valued the tutorial even though there was much to be desired in the way it should have been implemented. If the two-week induction tutorial could be effectively utilized to meet its desired objectives, it would have helped PPC students who came with varying experiences depending on the quality of high schools they have attended.

Contrary to the growing skeptism among university leaders regarding the treatment of PPC by instructors, it was reported that they were not differentially treated. In other words, no significant differences were observed between PPC and FPC groups in perceiving the way they were treated in class. However, the multivariate regression analyses revealed that achievement at Debub University was significantly affected by entry behavior (PPC vs. FPC), previous achievement in national examination (ESLCE and EGSLCE), academic self-concept, and perceived instructors' treatment.

The Effect of Gender

One of the major objectives of this study was revealing the effect of gender differences in academic achievement, academic self-concept, and perceived instructors' treatment. In addition, it wanted to reveal to the contribution of the gender variable in the overall multiple prediction of academic achievement at Debub University.

From the results of this study, it can be discerned that females are under-represented. This is in agreement with the findings of a recent study (Tesfaye, 2004) conducted on a similar population of female university students. The study showed that female participation rate at Debub University was low due to high female dismissal rate. The underlying causes of female under representation, among others, include the low academic self-concept that resulted in low achievement which in turn made college women more vulnerable to academic dismissal. This can be confirmed by the fact that female students as a group reported low academic self-concept and their average CGPA was significantly lower than male students. Consistent with this, similar studies in the Western culture reported that, compared to their male counterparts, females achieve low and report low in academic self-concept in specific domains. For example, recently, Marsh, Köller, and Baumert, (2001) found that females scored low math self-concept but high in verbal self-concept compared to male counterparts. In another study conducted among German high school students, it was found out that female students who reported low academic self-concept have had low achievement in mathematics, physics and chemistry. On the other hand, males scored significantly lower in language and verbal ability (OECD, 2000) compared to females.

But what makes the present study different is that the focus is not on domain-specific self-concept and achievement in specific areas, but rather underscores the difference in general academic self-concept and overall academic performance. Perhaps this may require further

scrutiny to identify the discipline(s) females have low or high academic self-concepts.

Regarding the ways of how their instructors treat them in class, females did not see low treatment that discourages success. This is an encouraging sign signifying the tendency that instructors were becoming aware of the impact they would possibly make due to their uncensored sexist languages and open negative remarks that unfavorably influence female success in higher education institutions.

Taken together, the following conclusions could be drawn from this study:

- There was a marked difference disfavouring PPC students in academic self-concept and academic performance. In fact, low academic self-concept to begin with, would result in low academic achievement. Thus, the apparent possibility is that on top of the induction tutorial, priority must be given to increase their academic-self-concept rather than giving too much content in a very short time. This perhaps may include how they should study to survive in higher education institutions. The induction period should be seen as a window of opportunity to familiarize PPC students with the changed environment.
- Since academic self-concept is a robust correlate of academic achievement, it undoubtedly influences the motivation of students to succeed in a competitive situation. Thus, building students' confidence at the point of entry is necessary to all kinds of students in HEIs. Particularly important is, however, to those with compromised background academic experiences (such as students coming from disadvantaged regions and underrepresented social groups) since they are victims of initial inequality.
- Similarly, compared to male counterparts, female students reported low academic self-concept. This seems to have eroded their confidence so as not to put extra-effort to

succeed. Apparently, the low performance of girls at Debub University as confirmed by their average DU-CGPA, seems to have resulted from their low academic-self-concept. It is desirable, therefore, to ponder on the problem of female attrition in the face of women under representation. To a certain extent, it can be argued that the affirmative action allows girls to join HEIs, but certainly, it is not the *panacea* to overcome gender inequality. Thus, it is desirable to investigate the causes of female attrition to see the bigger picture that would help to remedy the situation. One of the areas in addressing women under-representation due to lack of academic success, is to launch women confidence building programs that are not confined to university campuses but rather begin from primary school as the gender difference start to surface as early as that.

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