

Patterns of GPA in Higher Institutions of Ethiopia: Towards the Development of Standardized Quality Parameter

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Abstract

Cumulative Grade Point Average (CGPA) is one of the quality parameters routinely employed to set the students' performance in higher institutions. It has long been used as a yardstick in various competition types and enrolment at higher educational institutions. Recently, several institutions (Public and Private) had phenomenally mushroomed where a wide spectrum of grading schemes is expected. Variations in grading system could be reflected on the CGPA scored by graduates: either from similar departments of different institutions, or from different batches of the same institutions. The observed heterogeneity has induced scepticism from stakeholders on the efficacy and objectivity of CGPA, which eventually call for systematic standardization tool.

This study has attempted to (1) identify the patterns of grade inflation across institutions and through time; and (2) generate a standardization technique, which enables across-college and across-batch objectification. CGPA of sample graduates from business-oriented departments of Public and Private institutions were collected and interpreted. Besides, pertinent data were collected from college instructors and employing organization through structured questionnaire.

Results of the study showed that there is a trend of grade inflation (1) as one moves from the Public to Private owned institutions, (2) within different Public colleges, and (3) across years within Public-owned departments. In a bid to standardize the quality of graduates across institutions, this study developed a

Normalized Index (computed as $\frac{CGPA - ESLCE}{CGPA + ESLCE}$), which took into account CGPA and ESLCE (Ethiopian

School Leaving Certificate Examination) scores. An equation $ACGPA = CGPA \pm NI$ was derived to calculate the Adjusted CGPA. A Look up Table was prepared for all grading scenarios, which enables a user-friendly adjustment to the CGPA of college graduates. This study recommends that ACGPA should be fine-tuned to take into account other variables and needs to be validated on un-sampled institutions.

1. Introduction

CGPA (Cumulative Grade Point Average) is one of the major parameters employed to evaluate students across different performance categories (outstanding, medium, low) in higher institutions. It has long been used as a yardstick in competitions for securing new job, getting lack of parallelis in career, winning scholarship, enrolling at higher educational institutions at advanced standing and graduate levels, etc.

Nowadays, higher education in Ethiopia is undergoing an extraordinary transformation. Several Public and Private Institutions have phenomenally mushroomed in Ethiopia. This opportunity has brought a noteworthy diversity both in their location and field of specializations. The phenomenon undoubtedly exhibits a wide spectrum of grading system in the evaluation process. The variation in grading system could be reflected on CGPA attained by graduates, either from different batches of the same institution, or of the same department but graduated from different institutions.

Currently, it is widely believed by various individuals, institutions, and employers that sheer CGPA is skeptical for the intended objective. Numerous employers and educational institutions have begun to show hesitation on the CGPA inscribed on the transcript per se. For instance, the prominent business-oriented Public College, Addis Ababa Commercial College, recently upgraded all its departments from diploma to degree program with a limited enrolment capacity at an advanced standing level. Amazingly, several thousand applicants who had graduated from the various public and private institutions (more than 20 folds) submitted applications to the college. Due to the striking diversities of the applicants' CGPA, the college was obliged to adapt a screening device, which bestowed heavy weight to the GPA scored during ESLCE than the CGPA obtained during college studies. Such heterogeneity in the grading system is the major impetus that underpins the need to look for designing an acceptable mode of appraisal system across colleges and through batches. This vivid problem demands an alternative evaluation system/standard, which ultimately calls for scientific exploration.

The quality of students' outcome could be ensured by different methods. Some of them include double marking, assessment criteria, peer evaluation, external examination, benchmarking, employer survey, graduate survey, etc (Gittoes 2003 and Smith *et al* 1999). Despite the usefulness of these methods, the following drawbacks make them to be difficult, if not impossible, to execute it in the present Ethiopian condition:

- They are open to subjectivity (results could vary across space and time);

- They demand periodic monitoring scheme, which ultimately consumes budget, time and expertise; and
- The interpretation of their outcome is difficult due to its unfriendliness to users.

In general, a cursory review of local studies demonstrates that there is no available literature pertaining to the grade inflation issues in Ethiopia. However, there are some studies, which are marginally related. Graduate students of Addis Ababa University have mainly conducted such investigations.

Many of the existing studies assessed the association between scores of ESLCE and college performances (Fentaw 1991, Kebede 1991, Mekonen 1987, Melaku 1975). On the other hand, Daniel (1992) investigated the relationship between undergraduate GPA and Graduate School success. The study conducted by Eshetu (1998) is the exception where an academic performance of teacher and non-teacher stream science faculty graduates was conducted. He identified no significant difference between the two groups by the time the students graduated. In response to the foregoing problems and research gap, the following specific objectives were set in this study to:

- identify (if any) the patterns of grade inflation across departments of Public and Private institutes;
- identify (if any) patterns of grade inflation at departments of Public institutes through time (old vs. recent batches of similar departments); and
- generate a new standardization technique which enables cross-college and cross-batch objectification.

2. Research Methodology

Records (CGPA) of sample college graduates for the last three consecutive years (2004, 2003, and 2002) were collected both from Private [St. Mary's (SM) & Micro-Link Information Technology (MLIT)] and Public (AAC) colleges. The purpose of this sample is to compute the spatial patterns of grade inflation. The three business-oriented departments chosen for the study include Accounting (ACT), Marketing Management (MKT) and Secretarial Science and Office Management (SSOM). One sample section, on average consisting 40 students, was randomly selected for each department and for each stated academic year. This made a total data set of CGPAs from 1080 college graduates.

To assess the temporal pattern of grades, only AAC was considered. This was due to the availability of long track of data for private colleges. In this regard, the CGPA of graduates for the above-mentioned business-oriented sample departments were obtained for over a decade long, viz., 2003, 2002, 2001, 1997, 1995, and 1992.

To compute grade differentials of the current academic year, assessment was made for various colleges of Addis Ababa University (AAU). A random collection of grades (*of 2004, II semester*) was made from the notice boards of respective institutions. Such data were collected from AAC [5 departments, 183 students], Faculty of Business and Economics (FBE) [6 departments, 241 students], and Science Faculty (FS) [3 departments, 109 students], which make total scores of 533 students from 14 courses. In this regard, a total count was conducted on the number of A's, B's, C's, D's, and F's.

To assess grade inflation, a structured questionnaire was also prepared and administered to two groups of respondents, viz., college instructors and employers. About 36 college instructors responded out of the 70 questionnaires. Instructors of AAC, SM, MLIT, Unity University College (UUC), and Admas (AD) colleges were involved. Since financial institutes often employ graduates from business-oriented colleges, 8 major employers (mainly banks and insurances) were chosen for employer survey. However, only Wegagen Bank, S.C., has willingly participated in responding to the questionnaire.

Descriptive statistical analyses were employed using the statistical software (SPSS, version 10.01) to obtain the spatial and temporal aspects of grade inflation. Besides, different graph types were employed during the analysis.

3. Results and Discussion

3.1 Spatial Patterns of Grade Inflation

Observation of the posted grades, which was conducted among different colleges of AAU, shows a diversified distribution pattern (Figures 1, 2, and 3). Grades are found to be systematically inflated across SF → FBE → AAC colleges. The grade variation was not only across colleges but also within the different courses of a specific college.

The grade patterns between two private colleges showed almost similar distribution pattern (Figures 4 and 5). However, the assessment of grade differential across separate courses showed a slight variation. There is a small tendency of grade increment in the SSOM Department of MLIT

than SM College. On the contrary, the scores of Accounting Department are inflated more in SM than MLIT College. However, most often than not, such aggregated data or institutional averages do obscure subtle but real differences between institutions (Smith et al. 1999).

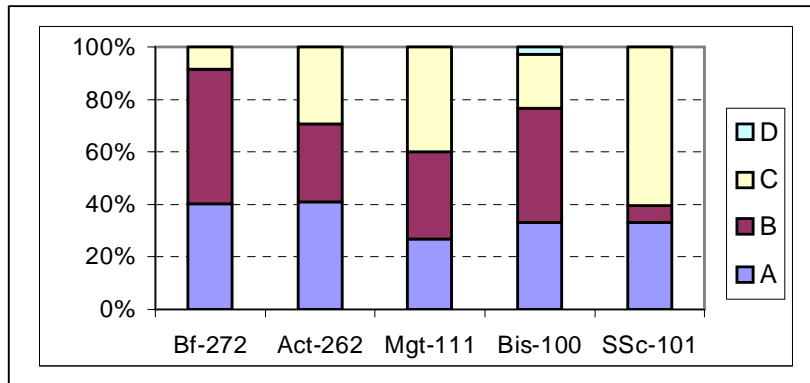


Figure 1: Patterns of Randomly Collected Grades within AAC (II Semester, 2004)

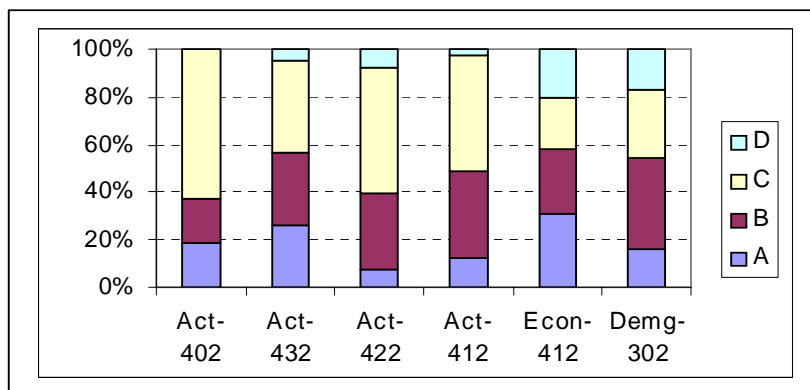


Figure 2: Patterns of Randomly Collected Grades within, FBE (II Semester, 2004)

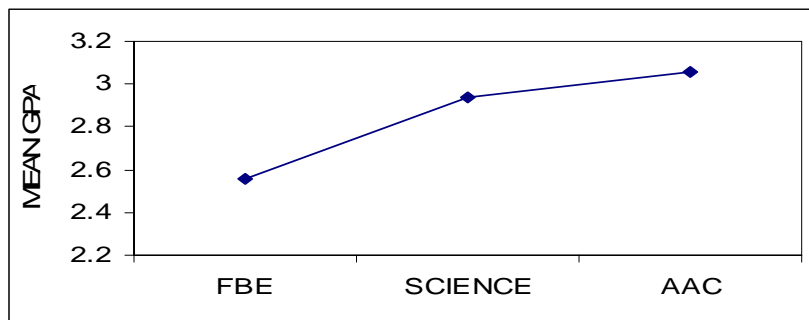


Figure 3: Spatial Patterns of Randomly Collected Grades across Public Colleges (II Semester, 2004)

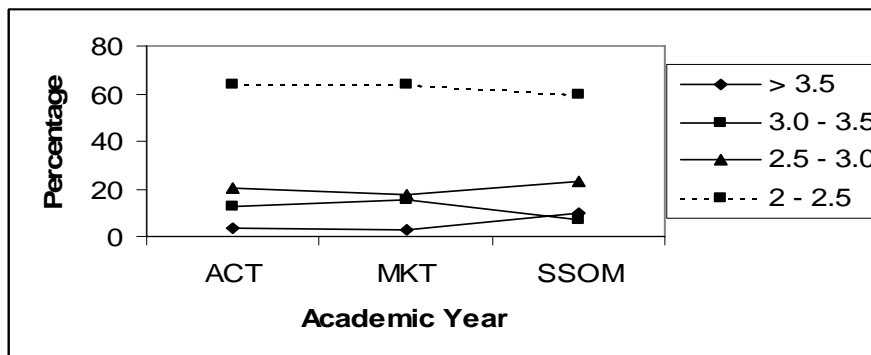


Figure 4: Trends of Average CGPA in MLIT College (2001-2003)

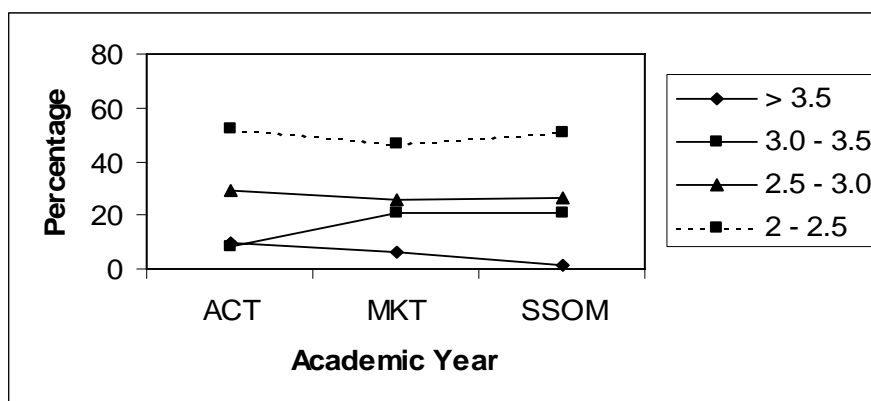


Figure 5: Trends of Average CGPA in SM College (2001-2003)

From responses of instructors obtained through questionnaire, it was found out that 64% of them acknowledged the variations of grading between Public and Private Colleges. 75% of the respondents replied, “grades are inflated more at Private than Public colleges”. Response from the employer also showed a similar stance. Those responses were obtained from instructors where nearly 50% of them had worked both at Public and Private Colleges.

About 72% of the respondents witnessed the difficulty of scoring higher grades during the past than present. However, only 33% of the respondents had attributed the growing availability of books to current higher grades in various colleges.

The employer, Wegagen Bank responded that it recruits candidates both from public and private colleges but the majority of applicants are from public colleges. During competitions, CGPA is considered as primary criteria, which account for about 75%, irrespective of the college type. The highest CGPA encountered during competition were mainly from Private colleges. In competitions, graduates of public colleges score better than their counterparts. In the Bank’s opinion, CGPA alone is not enough to qualify candidates for job and it showed the need for a standardized CGPA at national level.

3.2 Temporal Patterns of Grade Inflation

Analysis of grade pattern in AAC for the three Departments (ACT, MKT, SSOM) clearly shows that, there had been grade inflation demonstrated in the preceding decade (Figures 6, 7, and 8). In all departments, there is a growing trend of higher CGPA belonging to the category of “great distinction” (> 3.5 CGPA). Likewise, the proportion of lower CGPA category had shown somewhat a declining tendency in the corresponding period.

While the sample employer couldn’t discern such a temporal trend of grade inflation, about 50% of college instructors confirmed that there has been a time-to-time inflation of grades even at public colleges. About 81% of the respondents have the opinion that currently many younger teaching staff are available in higher institutions in Ethiopia. Of respondents, 86% of them witnessed that private colleges are staffed more by younger instructors than public colleges. When asked if younger staff are more generous in grading, 58% of the college instructors hesitated to associate grade inflation with the rising proportion of young staff in colleges. About 67% of the respondents have the opinion that the growing culture of academic transparency in colleges has favoured students to score better grade at present time than before.

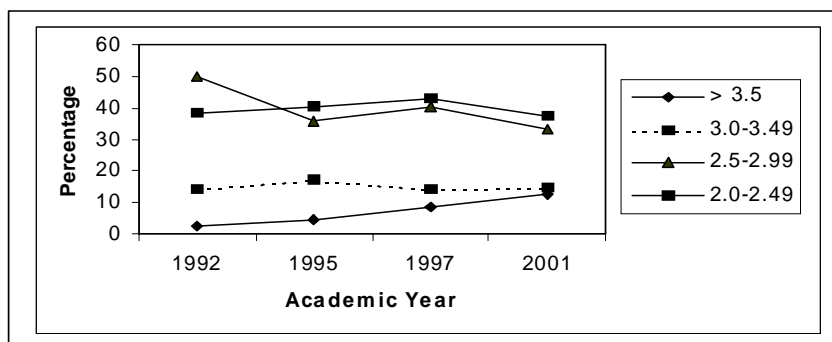


Figure 6: Temporal Pattern of Overall CGPA, Accounting Department (AAC)

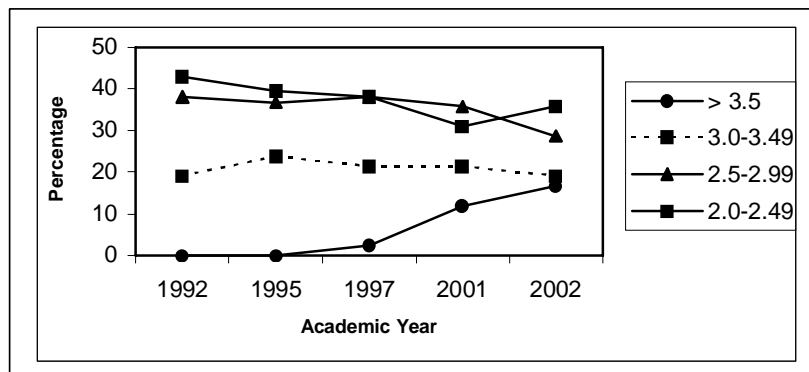


Figure 7: Temporal Patterns of Overall CGPA, Marketing Department (AAC)

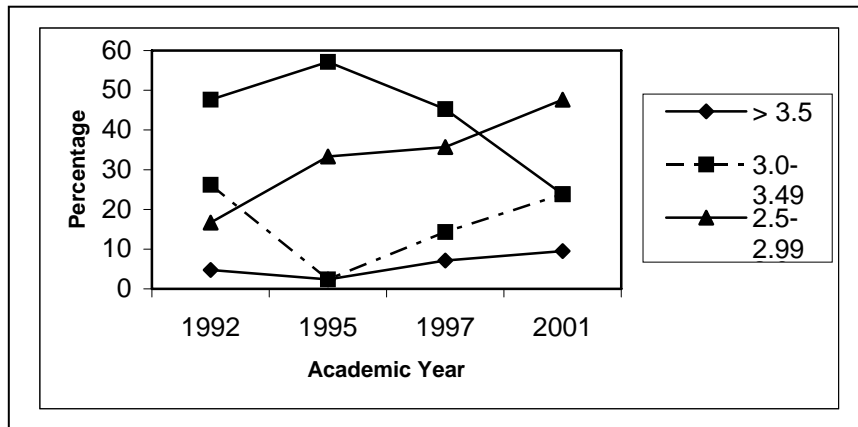


Figure 8: Temporal Pattern of Overall CGPA, Secretary Science Department (AAC)

In order to cope with the problem of disparity in grade pattern, respondents of college instructors suggested various solutions, where the following are the most common ones:

The need to employ:

1. overall academic criteria. This is through entrance examination which might compose practical, analytical, reasoning, aptitude and performance criteria;
2. extra-academic criteria like morality, ethics, and personality;
3. an assessment by external body, such as accreditation of candidates by professional associations, or setting a regulatory organ to oversee exams in different colleges or, in some instances, to take into account instructors' recommendation on the students' performance; and
4. letter grades; it is better to use percentages.

3.3 Index Development

Various studies demonstrated that college CGPA has a strong correlation with the ESLCE performance. An ESLCE score of 2.00 GPA is believed to meet the enrolment criteria to join higher institutions. However, it is only those who scored above 3.00 GPA who are getting the benefit of enrolment in Public colleges (Figure 9). Those who score below 3.00 GPA usually enrol in Private colleges. Due to this reason, there is a marked variation in the quality of enrolling students among public and private colleges.

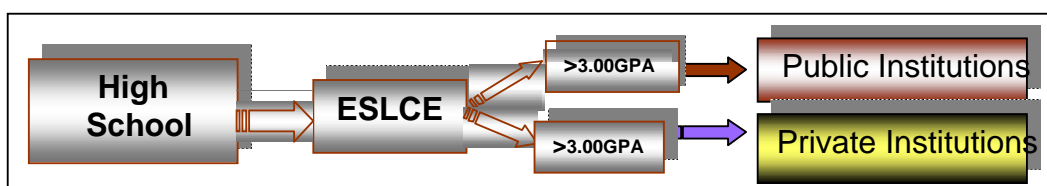


Figure 9: ESLCE-based Placement Patterns of Students in Ethiopia

Once students are enrolled, they are subjected to pursue under similar academic syllabus (Figure 10). However, there are unavoidable differences, which might positively or negatively contribute to the CGPA scored by college students. The students in private colleges, enjoy the benefit of choosing their field of specialization, and the competition is taking place among them. In such academic setting, those who had scored relatively higher in ESLCE are probable to score excellent grades of CGPA (Figure 10).

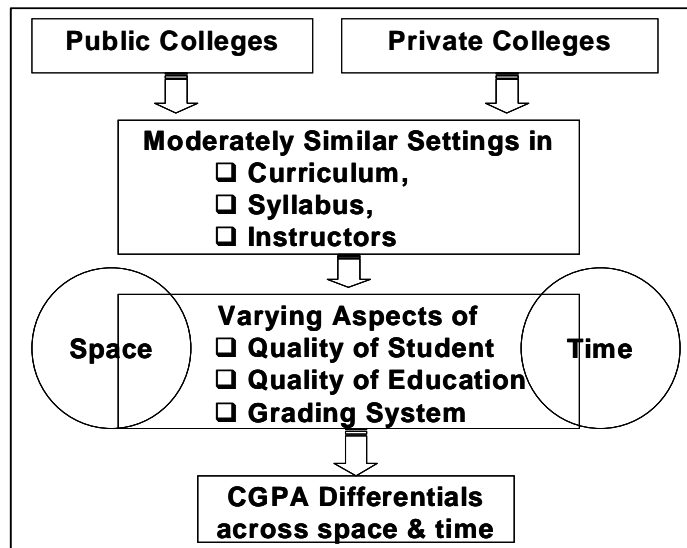


Figure 10: Overview of Grade Differential across Space and Time

However, those who scored higher in ESLCE and join public colleges are further assigned to several colleges of preferences based primarily on their ESLCE result than their personal interest. The most qualified scorers of ESLCE would join the “high competitive” field of specialization and hence are subjected to harvest grades ranging from “excellent” to “poor”. Those who are placed in “less-competitive” departments are competing among themselves, and among them those who had better ESLCE result would have a probability to be “excellent scorer” by the time they graduate. This scenario leads to the conclusion that the CGPA obtained by any graduate is the interplay of personal caliber, competitiveness of the students in the department, type of college, and type of grading system.

Currently, there are two methods of scales at the disposal of public and private colleges (Table 1). Relative Scale is employed by many public and private colleges. This scale enables to share grades (A to F) to any group of students, based on relative performance. Its disadvantage is that even though the majority of students are weaker or stronger, it usually apportions those grades to each batch. Hence, the batch itself matters the obtainable grade at a significant scale.

Table 1: Scales Employed in Public and Private Colleges of Ethiopia

<i>Letter Grade</i>	<i>Relative Scale (% Of students)</i>	<i>Absolute Scale (Marks in %)</i>
A	0-15	≥ 85
B	10 – 20	70 – 74
C	30 – 65	50 – 69
D	0 – 10	40 – 49
F	0 – 10	≤ 40

Absolute Scale is being employed at UUC College. This grading system has been criticized due to the inflated grades it bestows. Currently, further modification is employed where a 5% plus-minus rating is used to regulate the grade proportion. Apart from master grades (A, B, C, D, F), plus (+) and minus (-) are currently used at UU College to give a little more room for modification of such grading system.

The exposure of college students to varying competition ground (Figure 11) is one of the prime factors, which tarnishes the trustworthiness of the acquired CGPA. In this regard, Middlehurst (1996), cited in Smith et al (1999), recognized specific areas to be addressed if academic standards in a wider sense are to be assured. These include: conduct of academic staff (both input and processes); the educational background, ability motivation and learning approaches of students; curriculum design and content; learning activities; the assessment regime; the institutional context that provides a framework for articulation, assurance, maintenance and enhancement of standards.

A very good testimony of grade differential in higher institutions of Ethiopia is the study made by Eshetu (1998). Students of two groups at the Science Faculty of the AAU had different GPA during a placement in teaching (with less GPA) and non-teaching (with high GPA) streams. His study demonstrated that, at the time of graduation, the two groups showed no significant difference in grade, which clearly implies that the teaching stream had benefited from grade inflation than the non-teacher stream.

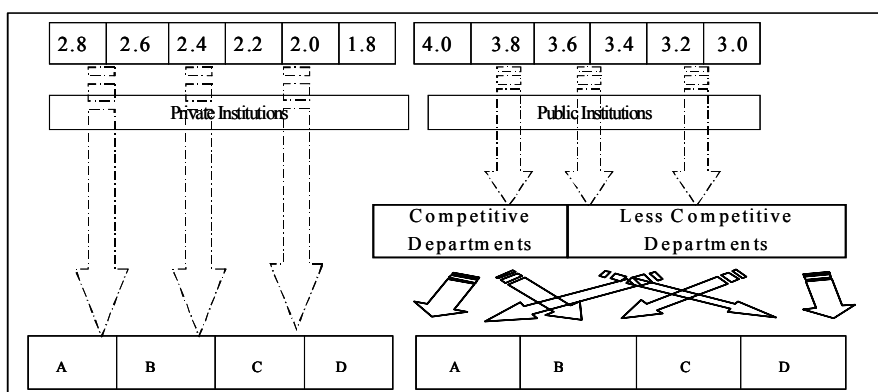


Figure 11: Determinants of Graduates' CGPA

There are two cardinal GPAs (ESLCE and CGPA), which are frequently used for various competitions. Due to the foregoing evidences in the spatial and temporal variation of CGPA, this study proposes the need to benchmark CGPA with ESLCE. In this regard, three scenarios of ESLCE-CGPA pattern could be distinguished (Figure 12).

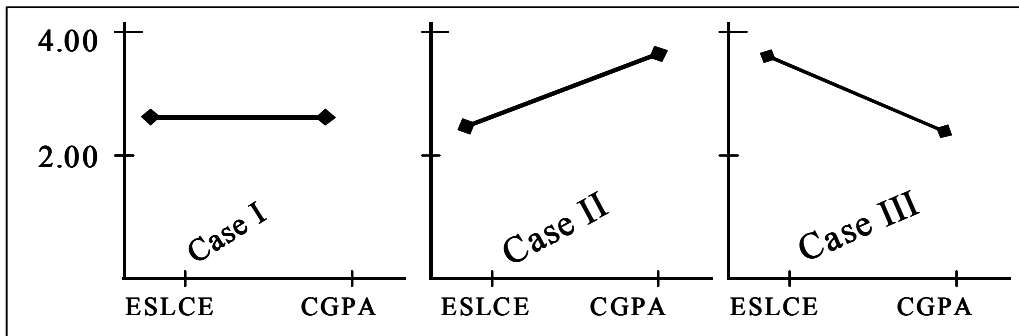


Figure 12: Scenario of CGPA-ESLCE Pattern

Neither ESLCE nor CGPA are sufficient to be a sole yardstick. Therefore, a Normalized Index (NI) which is incorporating ESLCE and CGPA, would yield better yardstick:

$$NI = \frac{CGPA - ESLCE}{CGPA + ESLCE} \quad (\text{Equation 1}).$$

Where

- NI ranges from -1 to 1,
- -1 refers to extremely deflated CGPA
- 0 refers to no change
- + 1 refers to extremely inflated CGPA

Corollary to the three ESLCE-CGPA patterns, computation of Adjusted CGPA (ACGPA) could be made in three scenarios:

1. Case I: “Steady-State” Scenario

There is no change between results of ESLCE and CGPA. The value would be 0 (CGPA ⇔ ACGPA)

2. Case II: “Waxing” Scenario

NI would have a positive value, hence, $ACGPA = CGPA - NI$ (Equation 2)

3. Case III. “Waning” Scenario

NI would have negative value, hence $ACGPA = CGPA + NI$ (Equation 3)

Therefore, the general formula of Adjusted CGPA would be:

$$ACGPA = CGPA \pm NI \quad (\text{Equation 4}).$$

To compute Equation 4, the NI values could be easily obtained from the look up table, which is prepared for easy reference. While NI with – sign is an indicator of deflation, the + sign signifies the presence of inflation.

Upon the implementation of ACGPA, the following advantages could be attained:

1. Giving due credit to the efforts (performance) paid to ESLCE which demonstrates the performance of pre-college study;
2. Being user-friendly due to easy computation and interpretation possibility;
3. Allowing comparison of candidates across departments, colleges, and batches;
4. Enabling institutions to benchmark their own performance; and
5. Contributing to the public accountability of higher education.

Table 2: Calculated Look-Up Table for Normalized Index

		CGPA										
		2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00
ESLCE	1.40	0.18	0.22	0.26	0.30	0.33	0.36	0.39	0.42	0.44	0.46	0.48
	1.60	0.11	0.16	0.20	0.24	0.27	0.30	0.33	0.36	0.38	0.41	0.43
	1.80	0.05	0.10	0.14	0.18	0.22	0.25	0.28	0.31	0.33	0.36	0.38
	2.00	0.00	0.05	0.09	0.13	0.17	0.20	0.23	0.26	0.29	0.31	0.33
	2.20	-0.05	0.00	0.04	0.08	0.12	0.15	0.19	0.21	0.24	0.27	0.29
	2.40	-0.09	-0.04	0.00	0.04	0.08	0.11	0.14	0.17	0.20	0.23	0.25
	2.60	-0.13	-0.08	-0.04	0.00	0.04	0.07	0.10	0.13	0.16	0.19	0.21
	2.80	-0.17	-0.12	-0.08	-0.04	0.00	0.03	0.07	0.10	0.13	0.15	0.18
	3.00	-0.20	-0.15	-0.11	-0.07	-0.03	0.00	0.03	0.06	0.09	0.12	0.14
	3.20	-0.23	-0.19	-0.14	-0.10	-0.07	-0.03	0.00	0.03	0.06	0.09	0.11
	3.40	-0.26	-0.21	-0.17	-0.13	-0.10	-0.06	-0.03	0.00	0.03	0.06	0.08
	3.60	-0.29	-0.24	-0.20	-0.16	-0.13	-0.09	-0.06	-0.03	0.00	0.03	0.05
	3.80	-0.31	-0.27	-0.23	-0.19	-0.15	-0.12	-0.09	-0.06	-0.03	0.00	0.03
	4.00	-0.33	-0.29	-0.25	-0.21	-0.18	-0.14	-0.11	-0.08	-0.05	-0.03	0.00

4. Conclusions and Recommendations

There is a clear government and public concern for "quality" of higher education in Ethiopia. Quality is a complex matter where its objective assessment is a requisite for comparative judgment. CGPA is one of the vital parameters, which is strongly linked to the quality of institution and graduates. However, it is exhibiting a noticeable heterogeneity through time and space, which ultimately made it possess a benefit of doubt. This is because the CGPA harvested by

any college graduate is a combined result of personal brilliance and endeavour, competitive nature of the department, type of college, type of grading system he/she was exposed to, etc.

In this study two important findings were obtained:

1. CGPA is found out to systematically vary both across colleges (space) and through batches (time), which implies that CGPA is a space-time dependent; and
2. A normalized index (NI) was generated, which takes ESLCE and CGPA into account. The obtained general formula was $ACGPA = CGPA \pm NI$.

The newly developed ACGPA ultimately creates an enabling medium for cross department competition within Public colleges, and competition of candidates from different colleges. Figure 13 summarizes the computation and implementation of CGPA.

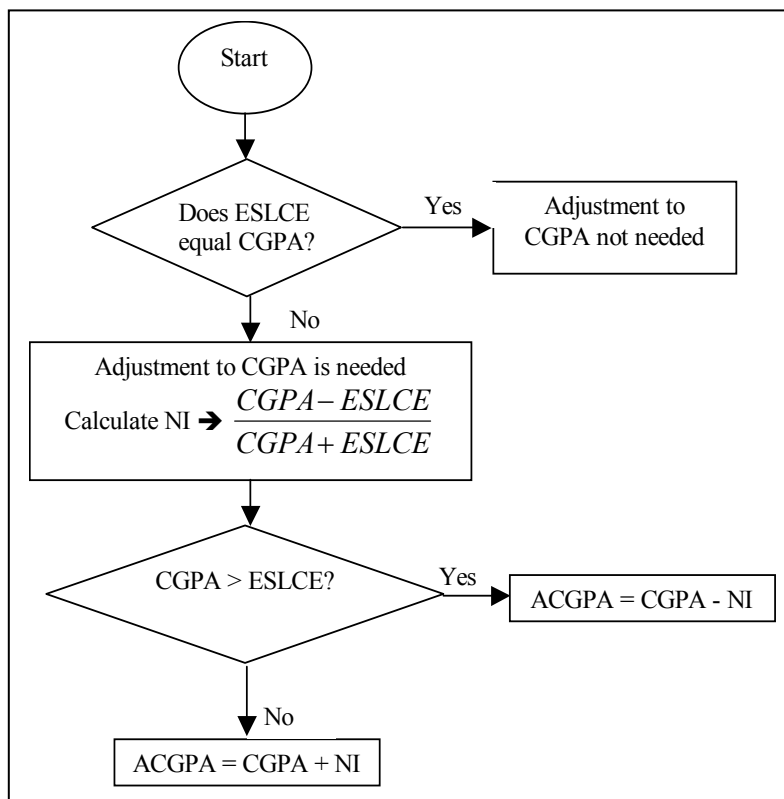


Figure 13: Decision Rule for the Computation of Adjusted CGPA

Finally, this study recommends that the

- (1) CGPA with differential should be assessed across different departments of different colleges both at private and public institutions, and
- (2) ACGPA should be further fine-tuned to address other parameters, which take into account unincorporated variables.

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