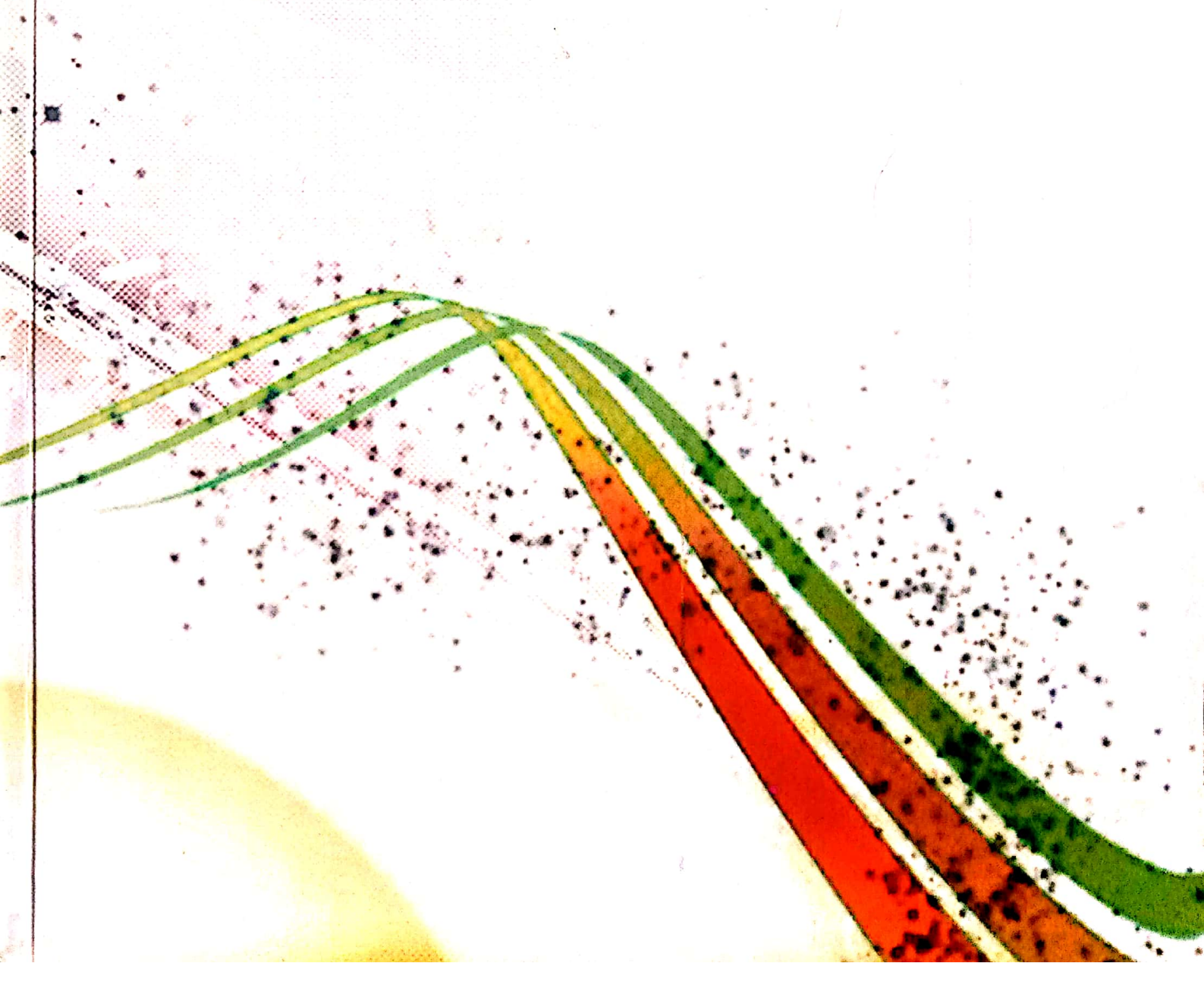
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PART-TIME EMPLOYMENT DURING SCHOOL AND ITS IMPACT ON STUDENTS' ACADEMIC PERFORMANCE: EVIDENCE FROM INNOVATIVE STUDENT EMPLOYMENT PROGRAMME OF KWARA STATE UNIVERSITY.

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Abstract

There have been several studies on the impact of students' employment on students' academic performance. Due to mixed findings, the debate on this relationship has centred on whether employment detracts from, promotes, or fails to affect academic performance. In spite of the mixed results, Kwara State University (KWASU) in 2011 launched an innovative student employment programme (SEP) to provide on-campus jobs for its students. However, the impactof thisprogramme on academic performanceis yet to be known. The study was, therefore, aimed at providing evidence on the impact of student employment during school on students'academic performance. The study was conducted using correlational analysis, matched-sample t-test design, and multiple regression analysis. This study found that the programme did not exert significant influence—either negative or positive—on academic performance,for there was no statistically significant mean difference between the two performances. The correlation coefficient of about 0.6 between pre- and post-SEP performances was significantlypositive. These results suggest that the impact of the programme on academic performance is neutral. It is recommended that the university should maintain the programme and improve on it, and that other Nigerian universities should take their cue from this KWASU's innovation by instituting the programme so as to reduce the drop-out rate of university students, especially the indigent ones.

Keywords: Part-time employment; innovation; intensity of work; student performance, Kwara State University.

1. Introduction

There have beenintensive and extensive studies on factors influencing students' academic performance, and one of the variables that seem to have received most attention is student employment (see,forexample,Paul, 1982; DeSimone, 2008;Robinson, 1999;Oettinger, 1999;McKechnie, et al., 2005; Lillydahl, 1990; Lee and Staff, 2007).Because it is universally acknowledged that many students are employed part-time or full-time during school, thedebate on the relationship between employment and academic performance has centred on whether employment detracts from, promotes, or fails to affect academic performance. However, the nature and the direction of the relationshiparenot clearowing to mixed results in the literature. The mixed findings stem from the fact that different forms of the relationship have been found.

Perhaps, the most obvious finding is one that positsa negative relationship between scholastic performance andemployment status, irrespective of the number of hours worked by students (Lee and Staff, 2007; Marsh and Kleitman, 2005; Oettinger, 1999; Markel and Frone, 1998; Cheng, 1995;Singh, 1998;DeSimone, 2008). This relationship is premised on the idea that once students are engaged in work during school,however,few the number of hours devoted to work, there would be less time to be devoted to their studies, and hence lower academic performance.A second finding is that the

relationship between employment and academic performance depends on the intensity of the work—the number of hours worked (Carney et al., 2005; Dundes and Marx, 2006;DeSimone, 2008; Lee & Staff, 2007; McKechnie et al., 2005; Paul, 1982; Robbinson, 1999; Singh, 1998; Stern, 1997). This finding is based on the idea that the more hours students work, the less time they devote to their studies, and the lower the academic performance. According to this view, it is not the employment status *per se* that exerts influence on academic performance but the number of hours worked per period of time.

Another finding, which is in stark contrast to the afore-mentioned two relationships, is that on-campus employment during school aids learning and thus enhances academic performance (Cockfield, 2006; Lillydahl, 1990; Mihalic and Elliot, 1997; Mortimer and John, 1998; Stern, 1997; Cheng, 1995). According to this finding, working students stay longer in school hours, and thusbemore acquainted and integrated with the school system, get more current information and more access to some school facilities than their nonworking peers or mates, and hence get higher grades.Thusmoderateemploymentduring school can improve grades if working promotes factors that are beneficial to academic performance (DeSimone, 2008; Stern 1997).

Also established is thefindingthat the effects employment during school has on academic performance is a function of individual's preexisting characteristics that are due to individual differences in socio-economic background, aspirations and orientations towards school and working, which influence both labour supply and grades(Lee & Staff, 2007; DeSimone, 2008). That is, the observed benefits of moderate work and the detriments of intensive work are due to these individual differences. Students that are not interested in schooling might work long hours that would otherwise have been devoted to leisure. Possibly, low grades of such students may not be attributed to working since the time would have otherwise been devoted to leisure. Other relationships relate nature or type of employment as an important factor that actually affects grades in school(Lillydahl, 1990).

In spite of the mixed results, Kwara State University (KWASU) in 2011 launched a student employment programme (SEP), an innovation to provide on-campus jobs for its students. However, theimpactof the programme on the students' scholastic performance—which could be negative or positive—is yet to be known. This obscurity was the primary motivation for this research. The main objective of the present study was, therefore, to provide additional evidenceon the impact of student employment during school on academic performance.To better understand how the SEP has affected students' performance in the university, the study sought to determine the average number of hours worked (intensity of work) by the SEP students and its effects on academic performance.

The study predicted that the SEP had impacted negatively on the SAP regardless of the number of hours worked. That is, they are substitutes. The inverse relationship seems most plausible considering the peculiarity of the university. This hypothesis was based on the author's observation that the SEP might be having counterproductive effects on the student academic performance as opposed to the university's objective of the programme: some SEP students who had certain cumulative grade point averages (CGPAs) were observed to have lost some points in their CGPA after joining the programme.

Obtaining a consistent estimate of how employment decisions affect academic performance is prospectively important for policy consideration of universities. Thus, this research would be beneficial touniversities that have instituted the scheme and those that are about to institute it, in their decisions concerning SEP. Moreover, students would benefit by helping them to know the tradeoff, if any, between financial proceeds from work and their academic performance.

Despite the plethora of studies on the relationship between work and academic achievement of students, the present author is not aware of any specific studies on the relationship betweentheuniversity'sSEP and the students'academicperformance. Therefore, this specific study is necessary because it is not appropriate to extrapolate from the results of previous empirical studies to KWASU, for most of them might lack external validity needed for generalization, and hence conclusion drawn from them cannot be automatically assumed to be applicable in the Nigerian context. This suggests that it is dangerous to generalize too readily the results of previous studies and between institutions or countries (McKechnie et al., 2005).

Methodologically, no study has been conducted using method of t-test via matched-sample design in the analysis of the impact of employment on student academic performance. Thus in order to have ample empirical evidence, the present study extends the previous research to include matched-sample design analysis of pre- and post-SEP academic performance. This is necessitated by the inconsistency in previous research results which is said to be due to methodology used and individual student differences. The Matched-sample design is thus aimed to resolve this problem of individual differences since the primary focus of this approach is to control such extraneous factors (Anderson et al., 1996; Kumar, 1999). Other methods adopted for the study include logit model and correlational analysis of hours worked and post-SEP SAP.

This paper is divided into fiveparts. Section 1 provides the general introduction, while Section 2 describes the KWASU Student Employment Programme. The method adopted for the study is discussed in Section 3, while empirical results arepresented in Section 4. While Discussion of results is contained in Section 4, the last section contains the concludes the study

2. Kwasu Student Employment Programme

The student employment programmeis one of the KWASU'sinnovativetrainingprogrammes, housed by the Office of Student Employment. It wasestablished in 2011 to introduce students to the world of work while in school. It combines academic studies with on-the-job experience to explore possible career directions before graduation. Part of the objectives of the programme is to inculcate into the students the entrepreneurial and community service spirit. The programme is conceived as an ideal opportunity for deserving students to learn and prepare for what the world of work will be like when their training is over. It is also conceived as an opportunity for the students to know the university better while also serving it, to institute appropriate incentives to promote academic excellence, and to provide students a chance to practise their curricula and acquire new skills. "The principal objective of the programme is for the students to appreciate decent and honest labour and to contribute to the development of the community and the nation at large" (Na'Allah, 2011)[1]

To qualify for the programme, the student applicant must have spent at least one year in the university and attained a minimum CGPA of 3.00. Interested students are required to fill the SEP application form, write an application letter and submit a curriculum vitae.Shortlisted candidates are thereafter required to attend an interview. Afterwards, successful applicants will be formally notified and appointed. The supervisors then monitor and submit evaluation report on the students. At the inception in 2011, a total of 41 application forms were picked up, of which 15 were duly returned; some applicants did not return the forms having seen the requirement of a CGPA of 3.0. Interviews were later conducted by the would-be supervisors of the applicants,out of

[2] Prof. Abdul-RasheedNa'Allah, the Vice-Chancellor of the university, added this during the inauguration of the programme on the 22nd March 2011.

whom 9 were found satisfactory and suitable for the post applied for.

The tenure for employment is one year after which students may reapply. Although a student's job would as much as possible match their courses of study, students from any course of study may be employed in any unit or department of the university. As much as possible, the work assigned to students is related to their course of study, or is chosen to match their skill, preferences and possible career goals.

The minimum number of work hours is 5 hours per week, while the maximum is 10 hours per week for those employed during session, while the maximum for those employed off-session (i.e., during summer vacation) is 20 hours per week.The minimum wage is ₦250 per hour, translating to a minimum wageof₦1250 per week and a maximum of ₦2500 per week.

3. Methodology

This section discusses the methods employed to carry out this research. It contains the research design, conceptual framework, data, model specification, and methods of data analysis.

3.1 Research Design

This study adoptsthepre-test/post-test design. The design is one of the most commonly used designs in evaluation studies. It is the most appropriate design for measuring the impact of a programme (Kumar, 1999). It comprises two sets of cross-sectional observations on the dependent variable for two different time periods. The difference between the two sets of observations is considered to represent the impact of the programme.

Although the design has certain advantages, which include its ability to measure the impact of a programme, its results can be affected by certain problems, which include history, maturation, statistical regression, experimental mortality, and selection biases(Campbell and Stanley, 1963; Babbie, 2007). To mitigate the effects of these problems, the study uses the cumulative grade point averages (CGPAs) immediately before and after the programme in order to reduce the time interval between the two periods of observations. This is because the longer the time interval, the more likely the results would be affected by these problems. Figure 1illustrates the conceptual framework for the pre-test/post-test design.

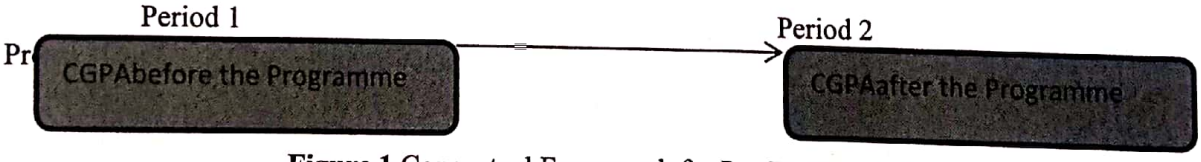


Figure 1. Conceptual Framework for Pre-Test/Post-Test Design

With matched-sample design, each student's pre-SEP CGPA was matched with his or her post-SEP CGPA.ThePre-SEP CGPAs and post-SEP CGPAs of the SEP students were paired to see if there was statistically significant difference between post-SEP academic performance and pre-SEP academic performance, and to also see whether the post-SEP academic performance was better or lower than the pre-SEP performance.

The *t*-test matched-sample design was used to statistically test the impact of student employment on academic performance. The choice of this design was informed by the nature and availability of the data for the study, and most importantly, by its power to eliminate variations among students.Matched-sample *t*-test is apropos and recommended when two samples from which means are to be estimated are dependent; that is, pairs of observations made on the same individuals or on the same sample.Thevalues of observations

in one sample (in this case post-SEP CGPA) is related to the values of observations of the other sample (pre-SEP CGPA) in any meaningful or significant manner (Anderson et al., 1996). Thepaired samples allowed us to control the extraneous factors. Since the primary focus of this approach was to control such extraneous factors,the matched-sample design was thus used to resolve the problem of individual differences.

The analyses were based on the following hypotheses:

1. Pre- and post-SEP CGPAs are positively correlated; that is, the post-SEP performance depends on the pre-SEP performance.
2. Number of hours worked are negatively correlated with post-SEP academic performance
3. Post-SEP CGPAs are less than pre-SEP GPAs; that is, SEP has a negative impact on academic performance.

3.2 Data And Model Specification

Secondary data were obtained from the records of the Centre for Innovative Technology (CIT) and the Office of Student Employment of the university. While the data on student grades (CGPAs) were obtained from the CIT, the Office of Student Employment provided other information such as the list of students employed, sex, number of hours worked daily, level, and course/college of study.The population for the study consistedofall students who were employed bythe Office of Student Employment from the inceptionof the programme in 2011 to 2016, whilethe sample size was 56 andwas composed of only those who were employed during school session as against those who were employed during summer vacation, and whose complete information vis-à-vis this research was made available by the sources.The sample cut across all programmes, departments and courses.

Given this information, the empirical model specified and estimated is as follows:

$$\Delta gpa_i = \alpha_0 + \alpha_1 hours + \alpha_2 sex_i + \alpha_4 coll_i + \alpha_5 level_i + \varepsilon_i$$

where Δgpa_i= academic performance measured by differences in pre- and post-SEP CGPA, *hours* = average monthly hours worked by each student, sex = the student's sex, *coll*= the faculty/college of student: Engineering (ENG), Pure and Applied Sciences (SCI), Agriculture (AGR),Education (EDU), Information and Communication Technology(ICT), Humanities, Management and Social Sciences (HMSS), *level*= student's academic level (year 2, 3 or 4), ε_i = stochastic error term, capturing unobserved determinants of grades. The ordinary least-squares technique was used for themodel.With the OLS estimation, unobserved student characteristics that effect academic performance, such as preferences for paid or academic work, motivation, risk aversion etc., are assumed to be uncorrelated with *hours* and other explanatory variables to avoid the problem of multicollinearity, and subsumed into ε.

4. Results

The descriptive statistics of the sample used for this study are summarized in Table 1. The average hours worked monthly by the sample was 35.8. The minimum and maximum hours worked by the students were 10 and 40, respectively. About 63 percent of the sample were male students, while majority of them were 300 level students. Exactly 50 percent of the students on the programme were from the College of Humanities, Management and Social sciences. Of the remaining 50 per cent, about 21 percent and 11 per cent were students of the Colleges of ICT and Sciences, respectively, while 18 per cent were shared among students of other colleges—Agriculture, 7 per cent, Education 9 per cent, Engineering 2 per cent.

The mean CGPAs of the students before and after the programme were 3.43 and 3.44, respectively. Although the minimum CGPA a student must

attain to qualify for the programme is 3.0, the minimum CGPA for the sample was 2.85. This was the case of a student whose CGPA before and after the programme were 2.85 and 2.76, respectively. Ordinarily, this student was not qualified for the programme. However, she was employed for reasons best known to the Office of Student Employment.

Table 1: Descriptive Statistics of the Sample

Variable	Mean	Standard deviation	Min	Max
hour	35.79	6.69	10	40
sex	.630	.489	0	1
Cgpa before	3.43	.226	2.85	3.81
Cgpa after	3.44	.264	2.76	3.94
Level	3.34	.721	2	4
Hmss	.50	.505	0	1
Sci	.107	.312	0	1
Ict	.214	.414	0	1
Agri	.071	.260	0	1
Edu	.089	.288	0	1
Eng	0.018	0.134	0	1

An analysis of the correlationbetween pre- and post-SEP CGPAs showed a significantly positive coefficient of about 0.6 ($p<0.01$). The correlation coefficient was highly statistically significant at the 1 percent (see Table 2). This result indicates that the two samples—pre-work and post-work samples of CGPAs—were dependent. That is, the performance after being employed was associated with the performance before employment. Hours of work and CGPA after the programme were not significantly correlated, though the coefficient hada positive sign.

Table 2: Correlation Matrix

	Cgpa before	Cgpa after	Sex	Hour	Level
Cgpa before	1.0000				
Cgpa after	0.5964	1.0000			
	(0.0000)*				
Sex	0.1639	0.1543	1.0000		
	(0.2275)	(0.2562)			
Hour	-0.0828	0.1031	0.2142	1.0000	
	(0.5440)	(0.4496)	(0.1129)		
Level	0.2134	0.2302	-0.0452	0.1323	1.0000
	(0.1143)	(0.0879)	(0.7408)	(0.3311)	

* *p*-values are in brackets

The matched-sample t-test carried out in Table 3 showed that the mean post-SEP CGPA was not significantly less than the average pre-SEP CGPA. In fact, the average post-SEP CGPA was greater than the average pre-SEP CGPA by about 0.01, although the difference was insignificant. The two-tailed test and one-tailed in either direction showed that SEP did not have any significant impact—negative or positive—on student performance (p> 0.05 in each case).

Table 3: Matched-Sample T-Test Results

Variable	Obs	Mean	Standard error	Standard deviation
Cgpa before	56	3.428	.0302	.2260
Cgpa after	56	3.441	.0353	.2644
Diff	56	-0.163	.0298	.2230

Mean (diff) = mean (cgpa before – cgpa after)

Ho: mean (diff) = 0

H_1: mean (diff) < 0 H_1: mean (diff) ≠0 H_1: mean (diff) > 0 Pr (T < t) = 0.2938 Pr (/T/ > /t/ = 0.5877 Pr (T > t) = 0.7062

These results were upheld by the multiple regression analysis which showed that changes or differences between pre-SEP CGPA and post-SEP CGPA were not due to work (see Table 4). The negative coefficient of the number of hours worked by the students was not statistically significant. This implies that the number of hours worked—that is, the intensity of work—did not significantly influence student post-SEP performance. The intensity of work was within the range of 10 to 49 hours. The coefficients of other explanatory variables, such as sex, college, and level used as control variables in the linear regression model, were also not statistically significant. That is, they did not exert significant influence on performance. This was as expected. For example, college/faculty or level of study should not influence performance.

Table 4: Multiple Linear Regression Results

Δcgp	Coefficient	Standard error	*T*	*p*-value
Hour	-.0011	.0026	-0.43	0.667
Sex	-.0277	.0356	-0.78	0.441
level	-.0080	.0243	-0.33	0.743
hmss	-.0890	.1272	-0.70	0.488
Sci	-.1121	.1346	-0.83	0.409
Ict	-.1828	.1303	-1.40	0.167
Agri	-.0990	.1428	-0.69	0.492
Edu	-.2261	.1368	-1.65	0.105
Constant	.3905	.1655	2.36	0.023

5. Discussion Of Results

The hypothesis that the pre- and post-SEP CGPAs are positively correlated was confirmed, given the statistical significance of the positive correlation coefficient. This result indicates that the pre- and post-SEP performances were dependent; that is, the two samples were dependent. This justifies the use of matched-sample design for this study. The hypothesis that employment has a negative impact on performance was rejected. The result suggests that being on the programmeand working between 10 and 40 hours per month did not have a significant impact on the students' academic performance. However, this doesnot mean that working more than 40 hours would not affect performance. It could mean that the hours worked by the students were not long enough to have a significantly negative impact on their performance.Nonetheless,itseems to suggest that employment detracts insignificantly from performance.

The rejection of the hypothesis that the number of hours worked are negatively correlated with academic performance implies that SEP work did not affect student performance. Irrespective of the number of hours worked, the performance of the students was maintained and sustained while they were employed. The multiple regression results also suggest that changes in CGPAs between the two periods cannot be said to be due to the number of hours worked. Since the t-test rejected the hypothesis that post-SEP CGPAs are less than the pre-SEP CGPAs, this suggests that SEP did not have a negative impact on academic performance. However, this does not mean that SEP has a positive impact on student performance. In fact, both the two-tailed test and one-tailed in either direction showed that SEP did not have any significant impact—negative or positive—on student performance.

6. Concluding Remarks

Given the findings of this study, the SEP does not exert perceptible negative effect on student academic performance. The programme is thus a welcome innovation and the university should maintain the programme and improves on it in order to enhance its positive impact on student academic performance. Other universities should take their cue from KWASU and establish a similar programme. This would reduce the drop-out rate of university students, especially the indigent ones. The university should look into low enrolment of the students of the Colleges of Engineering, Agriculture and Education. The causes of the low enrolment of these colleges on the programme should be deciphered and trashed out.

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