Relationship between Agricultural Trainees’ Performance and Satisfaction with Academic Program

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Abstract

Students’ satisfaction and academic performance are important determinants of a student continuance/persistence and attrition. The association between performance and students’ satisfaction was under focus in the study. Sample included 320 final year agricultural programme students of the University of Agriculture, Abeokuta, in the southwest Nigeria. Adopting the motivator-hygiene theory, the two facets of students’ satisfaction determined through principal component analysis were labeled “satisfiers” and “dissatisfiers”. “Dissatisfiers” were the situational factors in the college environment and “satisfiers” referred to students’ personal disposition toward the academic programme. Two-stage least squares regression results showed that satisfaction and performance of the students were unrelated, but there was a bivariate association between “dissatisfiers” and performance. Administrative action needs to consider the provision of high quality and experienced faculty for the institution, and enabling students to have access to a wide variety of courses that are deemed beneficial to their vocational skill.

Keywords: Academic Performance, Program Satisfaction, Agriculture Trainees, Nigeria

Introduction

Post independence Nigeria agricultural production has been characterized by erratic performance. For instance, in the past five years agricultural production levels have been low and unstable, and have not met the projected 5.5% annual growth rate espoused in the National Rolling Plan. In the 1996-2000, agriculture contributed 39.0% - 41.5% to the Gross Domestic Product (GDP), and the share of employment declined from 54% to 52% (Central Bank of Nigeria, 2000; Okuneye, 2001).

Three Universities of Agriculture (UAs) were established in the country to address the problem of agricultural growth. Two of the universities were established in January 1988, and were located in Abeokuta and Makurdi. A third was established in May 1993 and was located in Umudike. The UAs were mandated with (a) coordinated and mission oriented research; (b) rural development targeted extension services; (c) direct production activities; and more importantly, (d) provide comprehensive and harmonized training of students, who will engage in farming upon graduation (Adedipe, 1990). It was believed that the realization of the UA mission would give the country the necessary push in achieving the desired self-sufficiency in food and fiber production, as well as attain sustainable agricultural development (UNAAB, 1998). Since the establishment of the three UAs, there appears to be no study that has been conducted to examine the relationship between students’ academic achievement and satisfaction with the academic programme.

Students’ satisfaction and academic achievement (represented by grade point average) are important outcomes of college experience. Bean and Bradley (1986) suggested that satisfied students are those who are congruent with the institutional environment,
have achieved academic integration, maintained a healthy social life and perceived the college training as having much practical value. Studies have shown that students’ satisfaction was influenced by a variety of factors such as: background characteristics (e.g. age, sex, and high school grade point average) (Malin, Bray, Dougherty & Skinner, 1980; Liu & Jung, 1980), institutional-related factors (that is, the vitality of the classroom experience, student-faculty relationships outside the classroom, the strength of student friendships and negative school events) (Volkwein & Carbone, 1994; Kasworm & Pike 1994), and environmental factors (negative life events and social support) (Napoli & Wortman, 1997). Satisfaction could also be the result of programme effectiveness, and it is a significant feature in the conceptual model of student persistence/attrition (Okun, Ruehlman & Karoly, 1991; Cooke, Sims & Peyrefitte, 1995; Napoli & Wortman, 1997).

Academic achievement is a major determinant of a student continuance/persistence and graduation from college, getting admission into a graduate school, gaining employment into high-level occupations, and/or making a positive impression on the interviewers during the interview process (Okun et al., 1991; Kasworm & Pike, 1994; Nora, Cabrera, Hagedorn, & Pascarella, 1996; Napoli & Wortman, 1997; Kristof-Brown, Barrick, & Franke, 2002). Studies indicated that academic performance was subject to the influences of students’ background characteristics and a variety of college experiences. The background characteristics that had been found to have impact on academic performance were age, gender, marital status and income (Kasworm & Pike, 1994; Napoli & Wortman, 1997), and high school grade point average (Bean & Bradley, 1986; Napoli & Wortman, 1997).

Academic achievement is believed to be dependent on such college experiences as: a realistic self-appraisal system, a successful leadership experience, and demonstrated community service (Ting, 2000); academic integration, academic difficulty, social life and membership of campus organizations (Bean & Bradley, 1986); learning and performance goal orientations (Bouffard, Boisvert, Vezeau, & Larouche, 1995); and social support, psychological adjustment to college, and negative school/life events (Napoli & Wortman, 1997).

Although, there is much concern regarding whether increasing levels of student satisfaction with academic programme will lead to higher performance (or grades); or better performance by the student will cause him/her to be satisfied with his/her college experience. Studies such as those of Malin et al., (1980), Aitken (1982), Luedtke and Papazafiropoulos (1996), and Napoli and Wortman (1997) had found significant relationships between performance and satisfaction.

Purpose and Objectives
The purpose of this study was to determine if a reciprocal relationship between students’ satisfaction and academic performance existed. Furthermore, the extent to which personal factors such as age and gender contributed to the satisfaction as well as the performance levels of the focal students was investigated. Therefore, this study addressed the following objectives:
1. Examine if students’ satisfaction has structural dimensions;
2. Determine whether there is a reciprocal relationship between students’ satisfaction and academic performance; and
3. Determine if personal factors (age and sex) are related to students’ satisfaction and academic performance.

Methods
Sample
The study population was the final-year agriculture program students (447) from the University of Agriculture, Abeokuta, in the southwest of Nigeria. Questionnaires were administered on a randomly selected 380 respondents. Useable questionnaires were returned by 320 respondents (189 male, 131 female), which represents 84.2% return rate. Data collection took place in February 2002. The mean age for the respondents was 26.29 years (SD = 1.98), and the mean academic performance in terms of CGPA was 3.75 (SD = 1.01). Female students had higher performance (X = 3.89; SD = 1.01) than male students did (X = 3.66; SD = 0.99) (t(318) = -2.05; p < .04).

Measures
Based on the work of Morstain (1977), six Likert-type questionnaire items were developed to measure students’ satisfaction with academic programme. The suitability of the
scale was ascertained by testing it on a cohort of students (25) on environmental management program in the same institution. Responses on the scale followed an ascending five-point format of strongly agree (5) to strongly disagree (1). The total possible score on the satisfaction scale was 30, and high scores indicate positive attitudes. Internal consistency reliability coefficient (Cronbach’s alpha) for the instrument was 0.72, and this is similar to that obtained by Morstain (1977) (0.74).

Performance was assessed using the actual cumulative grade point average (CGPA) of the students. Highest score in the focal institution was 5.0 (A). Actual ages of students were employed in analyses, and sex was coded (male 1, and female 2).

**Results**

**Dimensions of Students’ Satisfaction**

The items measuring student satisfaction were subjected to principal component analysis (PC) with Varimax rotation to determine the underlying factor structure (Tabachnick & Fidell, 1989; Aquino & Byron, 2002; Coyle-Shapiro, 2002). A two-factor solution was produced that accounted for 55.94% variance in the scores. Adopting the framework of motivator-hygiene theory (Herzberg, Mausner, & Snyderman, 1959), the two factors were labeled: “dissatisfiers” (Cronbach’s alpha = 0.73) and “satisfiers” (Cronbach’s alpha = 0.63), because they appear to differentiate between situational factors in the college environment and students’ personal disposition toward the academic programme.

In Table 1 are the factor loadings and the items included on each factor, and the percent variance contributions of the factors. “Dissatisfiers” (factor I) described students’ satisfaction with the quality of faculty, having the opportunity to take elective courses, and opportunity for independent study in the focal institution. The belief that the situational factors in the college environment are favorable would prevent dissatisfaction for the students, but would not result in satisfaction. “Satisfiers” (factor II) related to the fulfillment of challenges to excel and overall satisfaction with the academic programme. Favorable interpretation of the college program as possessing intrinsic worth by the student would result in satisfaction for the student. An intercorrelation between the two subscales was .21 significant at $p < .01$. A significant relationship between the two facets of satisfaction showed that both subscales appear to measure related aspects of satisfaction.

<table>
<thead>
<tr>
<th>Items</th>
<th>Dissatisfiers*</th>
<th>Satisfiers**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel satisfied with the sufficient opportunity for independent study.</td>
<td>.84</td>
<td></td>
</tr>
<tr>
<td>2. The faculty are specialists in their fields.</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>3. I feel satisfied with the sufficient opportunity to take elective courses.</td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>4. I am satisfied with the opportunities to meet with faculty about course work and my progress.</td>
<td>.78</td>
<td></td>
</tr>
<tr>
<td>5. There is sufficient challenge to perform to the limit of my intellectual and creative capacity.</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>6. I am enjoying my studies as much as I had expected to.</td>
<td>.53</td>
<td></td>
</tr>
<tr>
<td>Eigenvalue</td>
<td>2.08</td>
<td>1.83</td>
</tr>
<tr>
<td>Percent variance</td>
<td>29.74</td>
<td>26.19</td>
</tr>
<tr>
<td>Coefficient alpha</td>
<td>.73</td>
<td>.63</td>
</tr>
<tr>
<td>Mean</td>
<td>10.27</td>
<td>10.19</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>3.07</td>
<td>2.62</td>
</tr>
</tbody>
</table>

*Note.* * Factor I; ** Factor II.

**Bivariate correlations**

In Table 2 are the descriptive statistics, internal consistency reliability alpha, and intercorrelations of study variables. Spearman rank correlation analysis showed that performance was significantly related to age ($r = -.15; p < .01$), gender ($r = .12; p < .05$), and “dissatisfiers” ($r = .12; p < .05$), but unrelated to
“satisfiers” \((r = .05; p > .05)\). “Dissatisfiers” was related to age \((r = -.11; p < .05)\) and gender \((r = .14; p < .05)\) but “satisfiers” was unrelated to age and gender. Except for the high intercorrelations coefficients between the global satisfaction scale and the facets of satisfaction, the remaining relationships were generally low but significant.

Table 2

**Means, Standard Deviations, Coefficient Alpha, and Intercorrelations of Study Variables (N = 320)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>26.29</td>
<td>2.10</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td>-</td>
<td>-</td>
<td>-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Performance</td>
<td>3.75</td>
<td>1.01</td>
<td>-.15**</td>
<td>.12*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. “Satisfiers”</td>
<td>10.19</td>
<td>2.62</td>
<td>.10</td>
<td>.05</td>
<td>.05</td>
<td>(.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. “Dissatisfiers”</td>
<td>10.27</td>
<td>3.07</td>
<td>-.11*</td>
<td>.14*</td>
<td>.12*</td>
<td>.21**</td>
<td>(.73)</td>
<td></td>
</tr>
<tr>
<td>6. Global satisfaction</td>
<td>20.48</td>
<td>4.70</td>
<td>-.12*</td>
<td>.15**</td>
<td>.12*</td>
<td>.43**</td>
<td>.79**</td>
<td>(.72)</td>
</tr>
</tbody>
</table>

**Note.** Coefficient alpha in bold parenthesis along the diagonal.

* \(p < 0.05\); ** \(p < 0.01\).

**Relationship between satisfaction and performance**

In order to determine whether there was a reciprocal relationship between satisfaction and performance, I performed a series of two-stage least square regression analyses. The two-stage least square regression analysis allows for the simultaneous estimation of reciprocal relationship between two endogenous variables. Results are presented in Table 3.

Table 3

**Results of Two-Stage Least Square Regression Analysis of Students’ Satisfaction and Performance (N = 320)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>Beta</th>
<th>Multiple R</th>
<th>R^2 (adj)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.16</td>
<td>.03</td>
<td>.09</td>
<td>.00</td>
<td>1.02ns</td>
</tr>
<tr>
<td>Performance</td>
<td>.14</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.38</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Satisfiers”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.74</td>
<td>.11*</td>
<td>.19</td>
<td>.03</td>
<td>4.25**</td>
</tr>
<tr>
<td>Performance</td>
<td>.23</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.50</td>
<td>-.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Dissatisfiers”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.18</td>
<td>.08</td>
<td>.22</td>
<td>.04</td>
<td>4.34**</td>
</tr>
<tr>
<td>Age</td>
<td>-.27</td>
<td>-.17***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Satisfiers”</td>
<td>.02</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Dissatisfiers”</td>
<td>.00</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** ns = not significant.

* \(p < 0.05\); ** \(p < 0.01\); *** \(p < 0.001\).

“Satisfiers”: Performance did not influence “satisfiers” \((beta = .04; p > .05)\); also, the contributions of age \((beta = .09; p > .05)\) and gender \((beta = .03; p > .05)\) to performance were statistically non-significant (see Table 3).

“Dissatisfiers”: As shown in Table 3, gender was significantly related to extrinsic satisfaction \((beta = .11; p < .05)\), while the influence of age on “dissatisfiers” \((beta = -.10)\) reached significance at \(p < .10\). Test of means showed that the female students exhibited
significantly higher “dissatisfiers” levels than male students (X<sub>male</sub> = 9.93; SD = 3.05 and X<sub>female</sub> = 10.79; SD = 3.04, t(318) = -2.47; p < .05).

“Performance”: Shown in Table 3, age was significantly related to performance (beta = -.175; p < .001); but gender (beta = .08; p > .05), “satisfiers” (beta = .01; p > .05), and “dissatisfiers” (beta = .070; p > .05) were unrelated to performance. Test of means indicated that the male students were significantly older than female students (X<sub>male</sub> = 26.73 years, SD = 2.32 and X<sub>female</sub> = 25.85 years, SD = 1.89; t(318) =3.23, p < .001).

Conclusions
Principal component factoring reveals that “satisfiers and dissatisfiers” characterized students’ satisfaction. Female students seemed to be more satisfied than the male students with the “dissatisfiers” of the academic programme, i.e. the quality of the faculty, opportunities for taking elective courses, and the many opportunities for independent study in focal institution. Since, the aim of the study was to determine whether there was a reciprocal relationship between students’ satisfaction and performance, none of the facets of satisfaction was significantly related to students’ performance. Neither did performance predicted student satisfaction. The implication of these results was that students’ satisfaction and performance were unrelated. However, the negative but significant influence of age on performance may suggest that the older students had lower cognitive abilities than the younger students. Therefore, older students will find it most useful if the institution can provide intervention in the areas of tutoring, study groups, and academic counseling (Nora et al., 1996).

Failure to find a significant relationship between satisfaction and performance may be due to the following: (1) Satisfaction and performance were unrelated in the student sample. That is, satisfaction with the academic programme may not translate into higher academic achievement, or that the achievement of a high grade point average would not result in the student finding the programme of study satisfying. (2) It may be that the relationship between satisfaction and performance was dependent on a third factor (moderator) that was not considered in this study. (3) The small number of items employed to measure satisfaction. However, further research is needed to clarify and understand the conditions under which the linkage between satisfaction and performance is possible among undergraduate students in Nigerian universities.

Educational Importance
Consistent with other studies, which reported a bivariate correlational relationship between satisfaction and performance, there was a bivariate correlational relationship between performance and a facet of satisfaction (“dissatisfiers”, r = .12; p < .05). Thus, the bivariate relationship between performance and ‘dissatisfiers” may imply that students’ performance was associated with only those factors that are visible about the academic programme, that is, the number of quality faculty that interacts with the student in and out of class, students having sufficient time for independent study, and availability of elective courses that could be beneficial to the student. Indeed, studies have shown that the college environment has great influence on both the cognitive and affective outcomes of the students (Winteler, 1981; Terenzini, Theophilides & Lorang, 1984). It is crucial therefore, that the Nigerian university system strives to have high quality and experienced faculty in its academic programme, and design and structure the programme to provide students with sufficient opportunity to engage in independent study. Finally, students should have access to a wide variety of courses that are deemed beneficial to their vocational skill.

References


