



Students Programme Satisfaction and Loyalty towards Their Departments and Institutions

Ismail Olaniyi Muraina^{1*}

¹*Department of Mathematical Sciences, College of Natural and Applied Sciences, Achievers University, Owo, Ondo State, Nigeria.*

Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

Delivering a high level of educational quality is important as a means of getting satisfied and contented with the services rendering by the school or department to maintain loyalty with such school or department. The study looks at the students' programme satisfaction and loyalty towards computer science department in Adeniran Ogunsanya College of Education. Sixty students were sampled randomly. 200 level and 300 level students were made up the population, with the exemption of 100 level because they were new to the system. A questionnaire was used to collect data. Structural Equation Modeling (SEM) using SmartPLS 3.0 was used to analyze the data collected. It was found that student programme perceived quality has the great effect on student programme satisfaction; student programme satisfaction is a good predictor of student loyalty to computer science. Institutions need to make it point of duty to provide an avenue for students to get what they want from their various schools or departments and to make students satisfied and loyal to their institutions. The limitation of this study includes failure to bring out the rate at which a student should be loyal to his/her department/Institution to know that such student is satisfied with the programme and how to rate the student's satisfaction to the department/Institution.

Keywords: Programme satisfaction; student expectation; student loyalty; smartpls; computer science.

1. INTRODUCTION

In looking at students' loyalty and satisfaction towards what they like to read a programme and the department they found themselves. [1] state that by creating a comfortable learning, student satisfaction with courses available in the department could continue to grow at an explosive and successful rate. Students' satisfaction is also important when learning is to take place and they should also have contended with environment [2,3]. [3] contend that instructors must include interaction in the course structure and note that although student-initiated interactions are important, they do not contribute as much to overall satisfaction. Moreover, [4] posit that students' satisfaction with an instructor is associated with the teacher's verbal and nonverbal immediacy behaviors "through video conference and face-to-face academic tutoring services"; the latter behaviors include "having eye contact with learners, acting in a natural way, and using facial expressions while presenting the content". These behaviors increase learners' satisfaction with the teacher. In Adeniran Ogunsanya College of Education, students' population in computer programme is always around hundreds compared to other courses. Computer science department virtually combined with almost courses in both science and other fields like economics, geography etc. This study wants to verify whether those students are satisfied with their choice and once they are satisfied would they loyal to the department as well. This study is bridging the gap between students that intend to study in computer science and those students forced to study in computer science. How are students being forced to study computer science will be satisfied and loyal to the department compared to such a student that chooses to study computer science on his/her own?

2. LITERATURE REVIEW

This study points out some antecedent variables that affected student programme satisfaction and loyalty of students to the department. For the student building up more satisfaction and loyalty to college is an important strategy. [5,6,7] and [8] found that student satisfaction and student loyalty were the most important key objectives of higher institutions. And also found that student

satisfaction was antecedent and mediating variable to student loyalty.

The work also focused on the correlations among student's expectation, perceived programme quality, learner programme satisfaction and learners' loyalty to the department. [9] believe that student satisfaction is directly related to "some aspects of academic engagement," "some aspects of perceived academic quality," and "the close link between academic engagement and perceived academic quality". They define academic engagement as "communication, institutional affiliation, learning from materials, relations with tutors, and tutorial pace" and state that the attributes of quality academics include "appropriate assessment, generic skills, good materials, and student choice". Additionally, [10] found that "satisfaction with critical thinking appeared to be the most important predictor variable," along with instruction, overall training, and usefulness or relevance of training. Therefore, satisfaction is also related to academic engagement, perceived academic programme quality, critical thinking and student loyalty. Literature would be reviewed with the following latent constructs: Career, Satisfaction and Loyalty.

2.1 Career

Career is defined as the progress and actions were taken by a person throughout a lifetime, especially those related to that person's occupation. A career according to Business Dictionary is often composed of the jobs held, titles earned and work accomplished over a long period of time, rather than just referring to one position. Students' choice of career in any field is always influenced with/by the following factors:

- i. **Interest in Field:** Some students grow up knowing what they want to do in life. These are the students who will go the extra mile to reach their dream job. However, students often settle on a different path due to many factors they can't control. Students will research their chosen career path and explore everything about it. The salary and benefits of that job do not play a role in this decision. In a research study, the factor "match with interest" rated over job characteristics, career attributes, and

- psychological and social benefits is important when students choose a career [11]. Students will seek out schools that are well known for that career or trade. Most students today are more concerned with the amount of money they can earn. However, there are a few students who pursue their dreams [12].
- ii. **Academic Ability and Aptitude:** Many students choose their career based on their academic ability [11]. However, some students do not have the ability or the work habits to succeed in some careers that may require more study than other fields of studies. These students may find a better fit in a less work-intensive career that requires fewer difficult classes. This affects the career paths of these students. Other students have the ability to handle careers with greater workloads and choose the career path that will lead to a job requiring more education.
 - iii. **White Collar vs. Blue Collar:** Most parents want their children to go college and get great jobs. However, not all high school students want to or have the ability to go to college. Some students want to be carpenters and construction workers. The workforce will always need the blue collar people who do manual labor jobs [13]. Even though technology continues to evolve and grow, there will always be a demand for trade centered who want to work straight out of high school. Some high school students join the armed forces after graduating. Some students will go to trade schools instead of attending college. Trade schools can provide training in fields such as mechanics, welding, electricity, or plumbing [13]. The short school year allows students to go to work more quickly after graduating from high school instead of having to stay in school for four or more years. Trade schools also allow students to work in a field of interest while going to school.
 - iv. **Personality:** Personality is another important factor in career choice. Studies have shown that students will choose a career that they think will fit their personality type [14]. The confidence that a student has can determine how far a student will go with their education. Students who believe in themselves have more confidence and are more likely to go for what they want instead of settling for something that is comfortable. The personality of students can also play a role in choosing a career. According to studies, students who have an investigative personality are more likely to career in science fields. Students with an artistic personality are more likely to career in arts and in interdisciplinary fields. Students who are very social people are more likely to career in the social sciences [15].
 - v. **Influential People:** Family and friends are considered to be an influential part of students' choice of career. Parents that are computer literate most often have an impact in their children choice of career. Family role models have more of an influence on what students' career in [16]. There are many people in a student's life who can influence their career decisions. Most of the time, parents and friends play a large role, but coaches and teachers can also have a huge impact on a student's life [16]. Teachers and coaches can help a student to do better in school, to get into college or to get on a better path. The impact that these adults have on young students can have a career influence on their career path. Other factors include family business, economic stability, gender etc.

2.2 Student Satisfaction

Satisfaction is seen according to [17] as customer level of approval when comparing a product' perceived performance with his or her expectation. It can also be defined as fulfilment of a need or want. Satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, herein regarding the fulfilment of some needs, goals or desire. An importance of satisfying student to retain them for profit-making institutions, satisfying the admitted students is also important because satisfaction will boost their loyalty to the department/school they belong. The dissatisfied students at times may not cut back on the number of courses or drop out of college completely but not doing well in the courses as expected. Therefore, student satisfaction or dissatisfaction leads to intention to stay or to quit which in turn leads to student retention or attrition [18]. This shows that student satisfaction has an important antecedence and is

a career driver of student loyalty [8]. In higher educational institutions all over the world, satisfaction is positive and significant.

2.3 Student Loyalty

Loyalty could be defined as the quality of being faithful to someone or something else. It is also seen as devotion and faithfulness to a cause, country, school, department, group or person. According to the literature review [19,20,7,8], Student loyalty means the faith of a student has regarding the college so far in the educational institution. Student loyalty has serious impact on educational institution. Student loyalty is the combination between student willingness to provide positive words of mouth about the institution and recommendation concerning educational institution to family, friends, employers, and organizations whenever opportunities are [21]. However, student loyalty also contains an attitudinal component and behavioral component [22,23]. The loyalty students are influencing teaching quality positively through active participation and committed behavior [24]. By maintaining loyalty and satisfaction of students, they are directly increasing the stability of the academic institutes. If the aforementioned latent variables are improved, the likely results will include an increase in motivation of student loyalty towards educational institution [21]. The following research hypotheses will guide this study:

Ho₁: Student programme perceived quality has a statistically significant direct positive effect on student loyalty to computer science department.

Ho₂: Student programme perceived quality has a statistically significant direct positive effect on student programme satisfaction.

Ho₃: Student expectation has a statistically significant direct positive effect on student loyalty to computer science department.

Ho₄: Student expectation has a statistically significant direct positive effect on student programme satisfaction.

Ho₅: Student programme satisfaction has a statistically significant direct positive effect on student loyalty to computer science department.

2.4 Conceptual Framework

It is indicated in the literature review that there are two independent latent variables which influence student programme satisfaction: student expectation, perceived and programme quality. Also, three independent latent variables which effect student loyalty to computer science department: student expectation, perceived programme quality, and student programme satisfaction. The conceptual framework and relations between latent variables of this research are presented in Fig. 1.

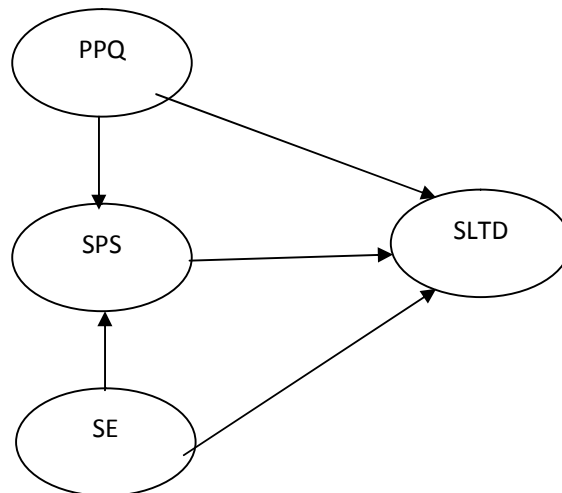


Fig. 1. Latent variable relations framework

3. RESEARCH METHODOLOGY

3.1 Population and Sample

NCE students (both full-time and part-time) and undergraduate students in Adeniran Ogunsanya College of Education formed the population for the study. The students were in computer science across all levels. Simple random sampling technique was used in collecting data with an error of 1% sample size. The total sample consists of 60 students with response rate of 100%.

3.2 Measure of Concepts

The Partial Least Squares (PLS) structural equation modeling approach was used to test the model. This procedure allowed us to test the proposed structure of the model totally. Each construct was covered by a set of relevant items in the questionnaire. Items were about student expectation, perceived quality of the programme, satisfaction and loyalty which was divided into two parts; the first one was on demographic data, and the other one was a questionnaire requesting information about constructs of four latent variables which including of student programme perceived quality, student expectation, student programme satisfaction, and student loyalty to computer science department. Measurement for independent and dependent variables used was a seven-point Likert type response format, with “strongly disagree” to “strongly agree” (1= strongly disagree, 2= disagree, 3= somewhat disagree, 4= neither agree nor disagree, 5= somewhat agree, 6= agree, 7= strongly agree). In measurement model, 6 indicators were used to measure study of latent constructs; 2 for the two external constructs; student programme satisfaction (1indicator) and student loyalty to programme (1indicator), and 4 for the two internal constructs;

student expectation (2 indicators), and programme perceived quality (2 indicators).

3.3 Data Analysis

The data analysis was divided into two parts: (i) validating the measurement model and validating the structural model (Fig. 1) linking these constructs and, (ii) testing the hypotheses. The Partial Least Squares (PLS) structural equations modeling is used for testing theory associated with latent variable models since the complexity of the theoretical model and the presence of both reflective and formative indicators are the focus (Brown & Mazzarol, 2006). However, this approach was used because of its robustness against distributional constraints of more traditional analysis methods (e.g. LISREL and AMOS) and suitability for a smaller sample size than more common SEM techniques. Smart PLS 3.0, the current software released and a leading PLS-SEM package, was used in this study.

4. RESULTS

4.1 Descriptive Statistics

This statistics gives detailed description of respondents used for the study in terms of model, items, mean, median, standard deviation and others.

4.2 Validating Measurement Model and Validating Structural Model

The Partial Least Squares (PLS) algorithm is used to test the structural equation models. This approach consists of an iterative process that maximizes the predictive and explanatory powers of the models, which are assessed in terms of the R² values of the dependent variables (between 0.706 to 0.778). These values are very high for all models given their complexity.

Table 1. Descriptive statistics of the items in the measure

| Construct | Items | Mean | Median | Standard deviation | Excess kurtosis | Skewness |
|------------------------------|----------|-------|--------|--------------------|-----------------|----------|
| Student expectation | sepect1 | 5.467 | 6.000 | 1.648 | 1.472 | -1.453 |
| | sexpect2 | 3.767 | 5.000 | 2.254 | -1.590 | -0.087 |
| | sexpect3 | 5.300 | 6.000 | 1.865 | 0.717 | -1.338 |
| Programme perceived quality | pqual1 | 5.750 | 6.000 | 1.588 | 2.339 | -1.728 |
| | pqual2 | 5.800 | 6.000 | 1.503 | 3.228 | -1.883 |
| | pqual3 | 5.867 | 6.000 | 0.806 | -0.300 | -0.336 |
| Student program satisfaction | sps | 5.333 | 6.000 | 1.709 | 0.475 | -1.176 |
| Student loyal | sloyal1 | 5.100 | 6.000 | 1.700 | 0.188 | -1.121 |
| | sloyal2 | 6.167 | 6.000 | 0.969 | 3.857 | -1.474 |
| | sloyal3 | 6.083 | 6.000 | 0.954 | 0.121 | -0.762 |

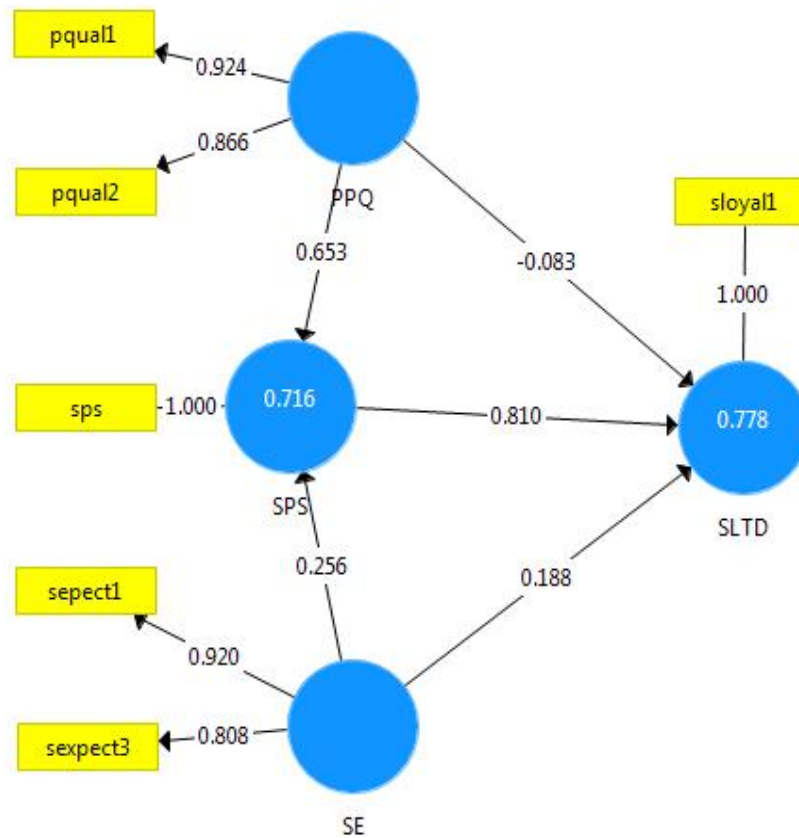


Fig. 2. Estimated structural model

The result of the estimated PLS structural model in Fig. 2 depicted the final model with path loading coefficients significant at level 0.05. The model showed the linkages among programme perceived quality, student expectation, student programme satisfaction, and student loyalty to computer science. This model moderately explained 77.8% respectively of variance in the student loyalty to computer science (SLTD) through the effect of direct variable (student programme satisfaction (SPS), programme perceived quality (PPQ), student expectation (SE)) and the indirect effect of the programme perceived quality (PPQ), and student expectation (SE). Inner model path coefficient sizes and significance in Fig. 2 indicated that the strongest direct effect on student programme satisfaction (SPS) to student loyalty to computer science (SLTD) which was at level 0.810. Programme perceived quality (PPQ) was found to be -0.083 to student loyalty to computer science (SLTD) while student expectation (SE) was 0.188 to student loyalty to computer science (SLTD). It was also found that the average direct effect from programme perceived quality (PPQ) to

student programme satisfaction (SPS) at the level of 0.653 while student expectation (SE) to student programme satisfaction (SPS) was at the level of 0.256.

In outer model, the measure's quality using the Indicator Reliability (see Table 2) of each measured variable was examined to ensure the measurement variable (MVs) load meaningfully to their related constructs. The indicator reliability was exceeded 0.707 and positive.

Moreover, in Table 3, Cronbach alpha value of all latent variables are shown to be larger than 0.6 (between 0.678 to 1.000), so high levels of internal consistency reliability have been demonstrated among all four reflective latent variables. An Average Variance Extracted (AVE) is used to check the validity of the measurement model which is widely used. To ensure discriminant validity of the constructs, the AVEs of the latent variables should be greater than the square of the correlations among the latent variables. For each construct, the AVEs squared

root exceeds its shared variance with other constructs, confirming that the constructs are independent of each other. The model shows good discriminant validity. In order to check the validity of the model from Table 2, the result indicated that discriminant validity is well established. For example, the latent variable PPQ's AVE is found to be 0.889; hence, its square root becomes 0.895 (in Table 3). This number is larger than the correlation values in the column of PPQ (0.666, 0.710 and 0.824) and also SE's AVE is found to be 0.857, its square root becomes 0.866 (see Table 3). This number is larger than those in the column SE (0.693 and 0.691) and those in the row of SE (0.666). A similar observation is also made for the latent variables SLTD and SPS respectively.

4.3 Testing of Hypotheses and Discussion of Findings

The estimated model is presented in Fig. 2 where the significant path is highlighted and the ability of the model to explain variation in the endogenous variable is indicated for each construct. The estimated coefficients are statistically significant at 0.05 level when t-test greater than 1.96. Table 4 shows relationships between constructs.

Table 4 shows that programme perceived quality (PPQ) has no statistically significant direct positive effect on student loyalty to computer science department (SLTD) ($t = 0.549$); it is equally revealed that student expectation (SE) has no statistically significant direct positive effect on student loyalty to computer science department (SLTD) ($t = 1.242$); likewise, student expectation (SE) has no statistically significant direct positive effect on student programme satisfaction (SPS) ($t = 0.901$). The table further shows that programme perceived quality (PPQ) has statistically significant direct positive effect on student programme satisfaction (SPS) ($t = 2.202$). Also, student programme satisfaction (SPS) has statistically significant direct positive effect on student loyalty to computer science department (SLTD) ($t = 5.095$). This implies that programme perceived quality of services rendered by the school or department can predict student programme satisfaction and student programme satisfaction has great impact on student loyalty to the department. Otherwise, programme perceived quality and student expectation are not predictors to student loyalty to the department; student expectation does not have any direct implication on student programme satisfaction. This study is in consonance with previous assumption that satisfaction may increase loyalty of student to the department [19,22,5,6,20,25,7].

Table 2. Summary of results for reflective outer model

| Latent variables | Items | Loadings | Indicator reliability (loadings ²) | Composite reliability | AVE |
|------------------------------|----------|----------|--|-----------------------|-------|
| Student expectation | sepect1 | 0.920 | 0.846 | 0.857 | 0.750 |
| | sexpect3 | 0.808 | 0.653 | | |
| Programme perceived quality | pqual1 | 0.924 | 0.854 | 0.889 | 0.801 |
| | pqual2 | 0.866 | 0.750 | | |
| Student program satisfaction | sps | 1.000 | 1.000 | 1.000 | 1.000 |
| Student loyal | sloyal1 | 1.000 | 1.000 | 1.000 | 1.000 |

Table 3. Assessment of the validity of the latent variables

| Latent variables | Latent variable correlations | | | | Cronbach alpha | R ² |
|------------------|------------------------------|-------|------------------|------------------|----------------|----------------|
| | PPQ | SE | SLTD | SPS | | |
| PPQ | 0.895 | | | | 0.756 | 0.000 |
| SE | 0.666 | 0.866 | | | 0.678 | 0.000 |
| SLTD | 0.710 | 0.693 | Single construct | | 1.000 | 0.778 |
| SPS | 0.824 | 0.691 | 0.872 | Single construct | 1.000 | 0.716 |

Table 4. T-Statistics for path estimates

| Hypothesis | Path Coefficient | t-test | p-value | Result |
|-------------|------------------|---------|---------|--------|
| PPQ -> SLTD | -0.083 | 0.549 | 0.583 | Reject |
| PPQ -> SPS | 0.653 | 2.202** | 0.028 | Accept |
| SE -> SLTD | 0.188 | 1.242 | 0.215 | Reject |
| SE -> SPS | 0.256 | 0.901 | 0.368 | Reject |
| SPS -> SLTD | 0.810 | 5.095** | 0.000 | Accept |

Note: ** significant at 5% level ($t > 1.96$)

5. CONCLUSION

The study critically looks at relationship between student programme perceived quality, student expectation from the department, and student programme satisfaction and student loyalty to the department with their careers. It was found that quality of the service provided by the department will boost student programme satisfaction and eventually solidify their loyalty to the computer science department. The study emphasized that students' satisfaction is a keynote that can increase students' loyalty to their department/ school. Hence, programme perceived quality and student expectation though not predictors to students' loyalty but count very powerful factors that can help students to get satisfied. Areas of future research should be towards the rate at which a student loyal to the department/school he/she belongs? How student can connect his friends to his/her department or institution after graduation? And what implications these have for the department /Institution at large?

COMPETING INTERESTS

Author has declared that no competing interests exist.

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