AN EMPIRICAL STUDY OF THE LEARNING PROCESS AND PERCEPTION AMONG STUDENTS IN TERTIARY INSTITUTIONS IN LAGOS STATE

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Abstract

This study investigated the relative strengths of students' perception for some key factors associated with learning in four Lagos State-based tertiary institutions, using conjoint analysis approach. Data were generated from primary sources through the administration of Conjoint Analysis questionnaire of profiles (factor levels) which were ranked by the student-respondents. The analysis produced utility scores and relative importance results which were determinants of comparative strengths of factors. The study revealed that 'program me extension' plays the most important role in most of the tertiary institutions while quality of lecturing plays the least important role. The study also revealed the need to implement the policy of the National Universities Commission which expects only PhD degree as minimum lecturer-qualification across board. This study concluded that there is need for the Lagos State government to do more for the two state-owned tertiary institutions covered in this study in the area of Quality of Lecturer, Cost of Study, Functional Facilities and Programme Extension. The study also points out the need for the Federal Government to provide funds for functional facilities in the Federal Government owned institutions.

Keywords: Empirical, learning process, perception among students, tertiary institution, Lagos State.

1.0 Introduction

Tertiary education has become more competitive in recent years as a result of reductions in government funding and higher student fees. As the nature of the environment grows more competitive, the role of marketing, previously non-existent in most universities, has grown significantly. One of the key pieces of information that would assist a university's marketing effort is an understanding of what determines a student's university preference. In this case, a form of conjoint analysis (ACA) was used to investigate the importance of a number of attributes to high school leavers (Soutar and Turner, 2002).

Nigeria has a pluralistic higher education system; in other words, the higher education sector in Nigeria includes university and polytechnic, public and private, Federal Government-owned and State-Government-owned institutions. For instance, polytechnic or technical institutions complement universities by producing skilled graduates. Private higher education institutions complement the efforts of public institutions by offering increased opportunities or options to prospective tertiary education students. This has also increased the competitive nature of the higher education industry for undergraduate students.

Students who want to have their tertiary education in Lagos State-based institution can only choose to study in a Federal Government-owned or State Government-owned institution. There are, however, other relatively little known public and private institutions that may be outside the scope of this study.

Some factors rated as extremely important reasons for pursuing tertiary education seem to include factors which would affect learning while in the institution. Such factors include cost of study, quality of teaching, age/experience of institution, availability of functional facilities, prestige/image of institution, frequency of strike which would lead to programme extension among other factors(Fernandez,2010).

1.1 Statement of the problem

Previous studies have identified factors contributing to a student's decision to study at tertiary level. The extant literature, however, does not focus on students' perception of choice criteria in

the selection of a tertiary educational institution in a country where higher education system is deregulated. For example, Joseph and Joseph (2000), in a survey of Indonesian high school students, identified that physical facilities, and course and career information are the most important factors considered when choosing an educational institution at overseas university such as those located in Australia or New Zealand. Similarly, Kemp, Madden and Simpson (1998) found that education service quality is an important determinant of study destination of Taiwanese and Indonesian students intending to study in US and Australia.

One of the most significant trends of tertiary education in Nigeria in recent years has been the increasing emphasis that has been placed on influencing the tertiary institution's (TI) choice process among prospective students and sponsors (Briggs & Wilson 2007) and the development of new marketing approaches and strategies (Simoes & Soares 2010).

Although, literature review provides an understanding of the marketing framework and analytical methods, it raises concern about the different factors of student choice found by previous researchers when it comes to learning process and perception among students in tertiary institutions. This study, therefore, explores the most relevant factors that emerge in four Lagos State-based tertiary institutions context.

1.2 **Purpose of the study**

The study is undertaken to determine the students' perception of the factors associated with learning process in four tertiary institutions in Lagos State. The extent to which such perception may differ between the students of four tertiary institutions in Lagos State is investigated from the case study of University of Lagos (UNILAG), Lagos State University (LASU), Yaba College of Technology (Yabatech), and Lagos State Polytechnic (LASPOTECH).

The specific objectives are to:

- explore and identify the variables related to the perception of student in the process of learning in tertiary educational institutions in Lagos State, Nigeria,
- verify the relationship between the identified variables and perceptions of students and

learning process in a particular tertiary institution in Lagos State, and

- establish the relative importance that students attach to the factors that influence their learning process in their tertiary institution in Lagos State.

2.0 Review of related studies

Several studies have looked specifically at conjoint analysis in several contexts, and the following is thus a discussion of the findings of the various studies regarding conjoint analysis.

Conjoint analysis is a multivariate technique developed specially to understand how consumers develop preferences for different products and services. It is widely used in marketing research because it allows estimating consumer's preferences of a product by combining part-worth utilities for each attribute. In a conjoint experiment, the researcher constructs a set of hypothetical products by combining selected levels of each attribute. These combinations result in the design of the stimuli which is presented to the respondents. Consumers will provide their evaluations on the basis of the behaviour of interest, known as the choice task (Cardello, Schutz and Lesher, 2007).

According to Cattin and Wittink (1982), approximately sixty percent of all conjoint studies are related to consumer goods while applications of conjoint analysis are used primarily for new product or concept development, pricing decisions, market segmentation, advertising, and distribution decisions. Furthermore, numerous studies have used conjoint analysis to examine buyer or user preferences for new food products or technology. Harrison, Stringer and Prinyawiwatkul (2000) used a conjoint analysis to analyse preferences for three consumer-ready products derived from catfish. Also, Harrison and Mclennon(2004) used conjoint analysis to measure the preferences of U.S. consumers for labelling of biotech food. In addition, Deliza, Macfie, Feria-Morales and Hedderly(2002) applied conjoint analysis to study the effect of consumer expectations on the valuation of instant coffee, and in (2003) used it to investigate consumer expectations using computer generated images of packages of an unfamiliar fruit juice (passion fruit). Sethuraman, Kerin and Cron (2005) worked with conjoint analysis to identify which product attributes consumers prefer for a new generation of wireless telephone handsets.

More recently, Cardello et al. (2007) conducted a conjoint study with military troops and civilians to examine the importance of a variety of factors that may encourage the utilisation of

products with innovative and emergent technologies. Laboissiere, Deliza, Mota, Rosenthal, Camargo and Junqueira(2007) also employed conjoint analysis to determine the effect of packaging attributes on purchase intentions toward passion fruit juice. Ozmen, Yasit, and Sezgin(2006) also used a conjoint analysis to determine the preferences for some selected M.B.A programs. Their paper reviewed the Conjoint Analysis Method (CAM) to determine consumer behaviours and preferences for products or services. The aim of their study was to demonstrate that the CAM can be used in "Service Sector" as well as in "Product Sector" and the other aim was to utilise CBC Sawtooth Software Program, which is a special program for CAM. A usage of CBC Sawtooth Software Program was demonstrated in the analysis of Management Business Administration (MBA) program preferences of Baskent University students. This study includes those MBA programs that require substantial tuition and fee payments. According to the results of the study, "University Name" plays the most important role in MBA preferences. The conjoint analysis revealed that, most preferred university is the Bogazici University and the most preferred type of MBA program is the "Executive MBA program", while another important finding is that "Higher Tuition and Fees" makes the MBA less attractive.

The study by Halperin, and Strazdon(1980) measured student's preferences for reference service using a 'Conjoint Analysis'. Their paper gives an example of the application of a marketing technique, conjoint analysis, to the measurement of student' preferences for reference service in a university library. Numerical values for a number of levels of reference service are derived from students' rankings of sixteen possible combinations or profiles of service. The resulting utilities are then employed in a user-choice simulation to predict which service patterns would be preferred. The conjoint analysis technique appears to be a potentially useful method for relating library services to user requirements.

To conclude, Kusumawati (2011) estimated the relative importance the students attach to the factors that influence them to select an Indonesian public university and tried to determine whether there are groups of students for whom different factors were more important. The data was analyzed using conjoint analysis approach. Findings indicated that high school leavers in developing markets view advice from family, friends, and/or teachers, reputation, and job prospect as the most important factors for selecting a public university.

3.0 Methodology

3.1 Data collection methods

The study was conducted using primary data. The primary data sources specifically include survey method and administration of structured questionnaire to the respondents.

A simple random sampling was adopted in selecting the sample and administering the questionnaire to the respondents. This procedure is representative, unbiased and allows drawing a representative sample. The population under study is finite (number of students in the four institutions).The researchers chose to use the method because the population is accessible and the numbers (population of students) are known.

The original questionnaire consisted of two sections. The first section contained the socio-demographic data while the second section contained the twenty four factors which were subsequently subjected to factor analysis. A pilot study (sample size, 50) was conducted to test the reliability of the original instrument and reliability of the questionnaire was established based on a Cronbach alpha of 0.767.

3.2 **Sample size in conjoint analysis**

The size of the sample in conjoint studies varies greatly. In one report,Cattin and Wittink(1982) state that the sample size in commercial conjoint studies usually ranges from100 to 1,000 with 300 to 550 the most typical range. In another study by Akaah and Korgaonkar(1988), it is found that smaller sample sizes (less than 100) are typical. As always, the sample size should be large enough to ensure reliability. To this effect, 370 respondents consisting of 92 Unilag, 88 LASU, 105 Yabatech and 95 Lagos poly students) was judgmentally considered for this study as the sampling frame for the different schools.

3.3 **Conjoint reliability and validity**

A second pilot study was later conducted across a sample of one hundred and sixty respondents (forty respondents per institution). This pretest was to ascertain the perception of students about the learning environment. The retrieved questionnaires were analysed employing Principal

Component Analysis (PCA) of Factor Analysis to determine the principal factors of learning process and perception among students. These factors (at different levels) extracted formed the basis for drafting another questionnaire which was used for the actual field work to produce data for the desired conjoint analysis.

In the questionnaire, there were different themes of questions aimed at discovering the learning process and perception among students in Tertiary Institution. The researchers reasonably expect that if any researcher should use the method adopted in this study, he or she would obtain equivalent results.

Hair, Black, Babin,& Anderson(2010) suggest that a full profile conjoint analysis should have the following procedures:

- The respondent is given a set of stimulus profiles (constructed along factorial design principles in the full profile case).
- The respondents rate the stimuli according to some overall criteria, such as preference, acceptability, or likelihood of choosing.
- In the analysis of the data, part-worths are identified for the factor levels such that each specific combination of part-worths equals the total utility of any given profile. A set of part-worths is derived for each respondent.
- The goodness-of-fit criterion relates the derived rating of stimulus profiles to the original rating data.
- The conjoint analysis model obtains the relative importance attribute for both aggregate and segmented model.

A set of objects are defined for the choice simulator. Based on previously determined part-worths for each respondent, each simulator computes a utility value for each of the objects defined as part of the simulation. Fractional factorial design and orthogonal array analysis were used to estimate the respondent's object of choice, and an overall choice shares computed for the sample. These were performed using the conjoint module of the SPSS/PASW 17.

Each attribute for the quantitative study was designed on the basis of respondent wording. Based on Hair, et al. (2010)'s position, the attributes were selected based on three considerations: to achieve the objectives of the investigation, minimize the cognitive task for respondents and facilitate the administration of the survey. The attributes and their respective levels are presented

in Table 3.1. While these may not be an exhaustive list of attributes considered, they do represent the attributes most frequently mentioned and deemed by students to be most important. In order to further support this position, both the single concepts as well as the combined ones, were listed as attributes in the profile.

Table 3.1. List of conjoint attributes and attribute levels.

No	Attribute	Description	Levels
1	Quality of Lecturer/Teaching Methods	Overall quality, composition and standard of Lecturers and instructors constituting each unit of the institution in terms of: numbers, level of qualification attained, ranking of institution attended, industry relevant specializations and wealth of experience.	a.Professors/Doctors b. M.Sc./B.Sc.
2.	Cost of Study	The money that students would have to pay consisting of tuition fees, feeding, accommodation and other expenses from the date of commencement of study until graduation. Tution fee, cost of living, Cost and affordability.	a.Less than N500,000 b. Above N500,000
3	Functional Facilities	Overall institution surrounding including campus environment, facilities inside the university, interaction proximity and safety.	a. 24 hours b.Less than 24 hours
4	Age of institution/Experience	The number of years the institution has been in existence and the quality /wealth of academic experience accrued over the years.	a. Less than 10years b.10-30 years c. Above 30 years.
5	Programme Extension due to Volatile Environment	The length of inadvertent breaks and term extensions experienced by the institution due to non-academic factors.	a. Extended by 6 mths b.1year extension c. Above 1 year extension.
6	Reputation of Programme to employers	Overall reputation of the institution such as ranking, status, achievement and accreditation as a result of quality of education including teaching quality and classroom learning experience. Coupled with the range of merit-based career opportunities available to students after graduating	Valuable Not valuable

Source: Extracts from the earlier 24 factors identified

Factor analysis was used to reduce the twenty four variables. Since the objective was to determine the minimum number of factors, the method of factor analysis selected was the principal component analysis. To determine the number of factors, the procedures adopted by the researchers were based on the eigenvalues. Only factors with a variance greater than one were included.

The economic technique of Conjoint Analysis (CA) was used to investigate students' strength of perception for several key factors associated with learning. A Conjoint Analysis (CA) questionnaires were administered on four groups of students (one each representing the four institutions) aged 15 years or older. 100 students, were sampled from each of the four institutions for the study.

3.5 Case study

The following four Lagos State-based tertiary education institutions that formed the case study for this paper are discussed below:

3.5.1 **University of Lagos (Unilag)**

University of Lagos (UNILAG) is a public academic and research university located in Akoka and Idi Araba, Lagos. It was established in 1962 by an Act of Parliament of the Federal Republic of Nigeria. It is among the first generation universities in Nigeria. The university's student population is over 40,000.

The university has a strong business, law, medicine, Science and Engineering faculties. However, like its contemporaries, it has suffered from brain drain and inadequate funding. About five journals on business administration and economics are published out of the university and the university's press is one of the leading college publishing houses.

As part of the university's mandate to cater for the manpower needs of the country, a distance learning unit was created in the 1973/1974 academic session. It was initially called the Correspondence and Open Studies Unit but was later changed to become an institute of distance

learning. The unit provided part time services in law, business, accounting and science education at inception.

The University's main library is a legal depository of books which has a total of about 375,000 volumes of books. The university has enjoyed goodwill from some individuals and firms operating around Lagos including Julius Berger, Wahab Folawiyo, MTN, and Zenith Bank. On December 11, 2003, the university administration launched a $500m endowment fund (Wikipedia).

3.5.2 **Lagos State University (LASU)**

The Lagos State University - also known as LASU- was established in 1983 by the enabling Law of Lagos State of Nigeria, for the advancement of learning and establishment of academic excellence. The University caters for a population of over 61,000, enrolled in full-time and part-time programmes at the Diploma, Undergraduate and Postgraduate. Lagos State University (informally LASU), located in the city of Ojo, Lagos, Nigeria, is the only state university in the former British colony. Lagos State University was conceived as a multi-campus, collegiate and non-residential University. Today, LASU operates a multi-campus system with four fully owned campuses having its main campus at Ojo (along the Badagry Expressway) and other campuses at Epe (where the Engineering Faculty is located), Ikeja and Surulere, as well as six external/affiliated campuses (Wikipedia).

3.5.3 **Yaba College of Technology (Yabatech)**

Yaba College of Technology, founded in 1947, is Nigeria's first higher educational institution. It is located in Yaba, Lagos. The college is a centre of culture and heritage. Currently it has student enrollment of over 16,000.

Yaba Higher College was founded in1934 and when the students were moved to Ibadan to create the University of Ibadan in 1948 as part of the Nigerian Ten-year Technical Education Development Plan of 1944, the college was founded as Yaba Technical Institute, a technical successor institution, in 1947. The creation of the college was facilitated by bringing together training centers of public departments, including the Lands and Survey Training Center which started in 1908, and those of the Marine which started in 1928, the P.W.D. in 1931, the Post and Telegraphs also in 1931 and the Railways in 1942, the name was changed to the current one for

the first time in 1963 following requests from students. Research was added to instruction and training in the objects of the institution by the decree of 1969. The name was changed to Federal Polytechnic Yaba in 1979, but changed back to the current one in 1980.

3.5.4 **Lagos State Polytechnic (LASPOTECH)**

In 1975, the Lagos State Government decided to approve the establishment of a College of Science and Technology as the first Lagos State-owned tertiary institution. The Lagos State Polytechnic (LASPOTECH), previously known as the Lagos State College of Science and Technology (LACOSTECH), was founded in 1977 with the promulgation of the Lagos State Edict No.1 of 1978 which gave the College its legal existence with retroactive effect from June 1977.

In 1986, the Lagos State Government changed the name of the Institution from the Lagos State College of Science and Technology to the Lagos State Polytechnic. Academic activities started at the Isolo Campus of the Polytechnic in January, 1978 with the admission of 287 pioneer students into five different departments, viz: Accountancy and Finance, Insurance, Secretarial Studies, Management and Business Studies. The College was also offering Basic Studies Programme for candidates wishing to prepare for the G.C.E 'A' levels in Arts and the Sciences.

4.0 Data presentation and analysis

4.1 Data presentation

The factor analysis carried out produced the results in Table 4.1. The results show that seven principal components were produced. These seven factors emerged as a result of their eigenvalues which were higher than 1. The remaining seventeen factors which have eigenvalues less than 1 were considered unsuitable for participation in Conjoint Analysis.

The factor analysis carried out produced six principal components. The six factors are "Quality of Lecturer", "Cost of Study", "Functional Facilities", "Age of Institution", "Extension of Programme" and "Reputation of programme to Employer". Each factor has between two and three levels:

Quality of Lecturer/ Teaching Methods -	Prof/PhD,	MSc/BSc
Cost of Study -	less than N500,000,	Above N500,000
Functional Facilities-	24 hours,	less than 24 hours
Age of institution/Experience -	less than 10 years, Above 30 years	10-30 years,
Programme Extension due To volatile Environment -	Extended by 6 months, Above 1 year	1 year Extension,
Reputation of Programme To Employers -	Valuable (desirable)	Not Valuable (Undesirable)

Table 4.1: Results of factor analysis

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.051	25.213	25.213	6.051	25.213	25.213
2	2.792	11.632	36.845	2.792	11.632	36.845
3	2.606	10.857	47.702	2.606	10.857	47.702
4	1.757	7.319	55.021	1.757	7.319	55.021
5	1.369	5.706	60.727	1.369	5.706	60.727
6	1.215	5.060	65.788	1.215	5.060	65.788
7	1.111	4.631	70.419	1.111	4.631	70.419
8	.951	3.961	74.380			
9	.903	3.764	78.144			
10	.712	2.968	81.112			
11	.681	2.839	83.951			
12	.646	2.692	86.643			
13	.538	2.241	88.884			
14	.463	1.929	90.813			
15	.431	1.795	92.608			
16	.365	1.523	94.131			
17	.315	1.311	95.442			
18	.290	1.210	96.652			
19	.252	1.049	97.701			
20	.163	.679	98.379			
21	.149	.619	98.998			
22	.096	.400	99.398			
23	.087	.362	99.760			
24	.058	.240	100.000			

Extraction Method: Principal Component Analysis.

Respondents were asked to rank the various combinations of factor levels which in this study were sixteen combinations or profiles.

The data used in the analysis consisted of the ranks that individuals assign to each profile. The computer program that performs the conjoint analysis assigns a set of numerical values to each level factor in the profile of institution. These values are chosen by the program in such a way that the original rank order of the profiles is retained. The results of the analysis are expressed as a set of utilities for each factor which are stated as "Utility Scores" for each of the four tertiary institutions.

4.1.1 **Relative importance**

In our comparison of alternative institutions, conjoint analysis gives us information concerning the relative importance of each of the factors in the profile. The range of each factor is determined by subtracting the lowest utility for that factor from the highest; the difference between them is the range. When the range of each factor is expressed as a percentage of the total of all factor ranges, an indication of the relative importance of factors is produced.

The rank of the factors was determined by the percentage of the range between the maximum and minimum utility for each factor: the larger the range the more important the factor. The levels of the various factors were constructed according to what we thought the hierarchy of preference within the six factors would be. It is important to keep in mind that the relative importance of a factor depends to some extent on the levels that are included in the design.

The screen plot below succinctly illustrates the basis of the determination of the seven factor components.

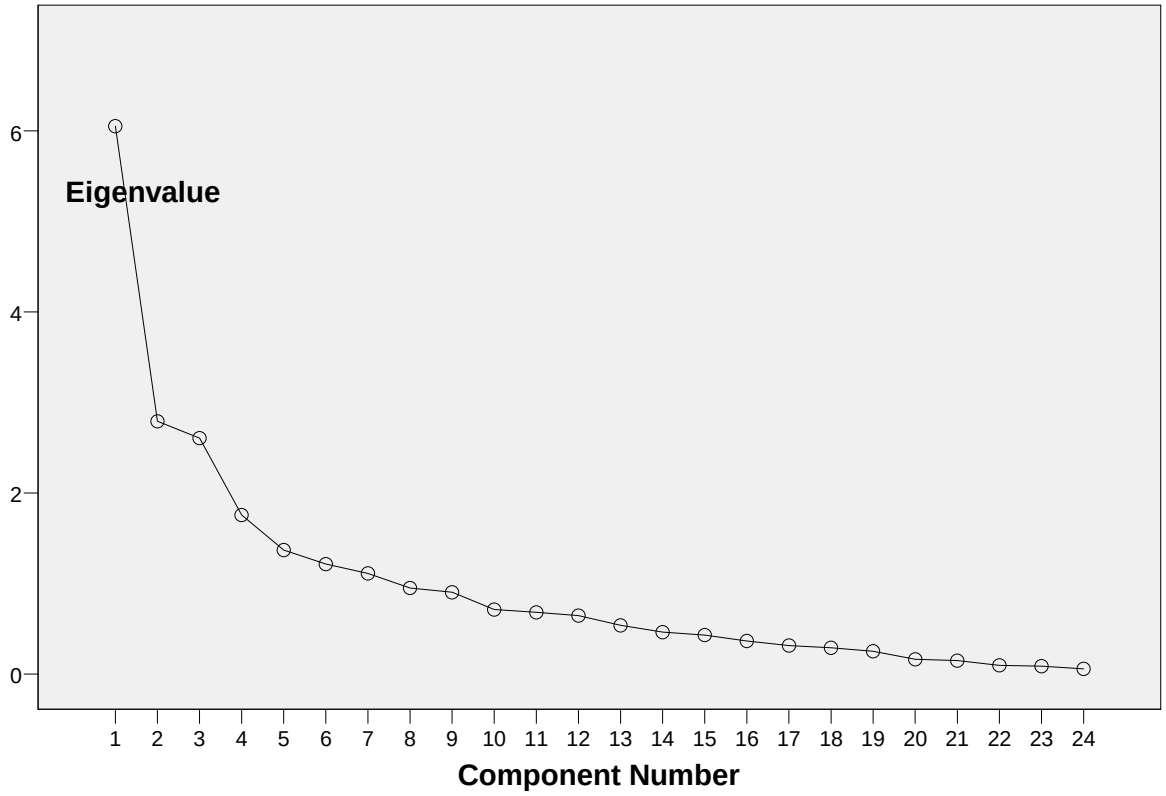


Figure 4.1 Screen Plot

Table 4.2: Component matrix

	Component						
	1	2	3	4	5	6	7
Complete freedom to do "as you wish" as a driver to learning.	.761	.228	.013	-.073	-.059	-.042	-.235
Availability of qualified staff and facilities	.753	.140	.041	.100	-.162	.258	.078
Employment rates for graduates from the programmes.	.714	-.163	.362	.114	-.259	-.031	.189
The range of career opportunities available to students after graduation.	.701	-.001	.068	.248	.207	.277	.146
General attitude of students to learning.	.686	-.160	.181	-.046	-.197	-.478	-.021
Extent to which student/lecturer relationship seems to be cordial	.659	.374	-.087	.103	.045	-.040	-.188
Extent to which social vices/ practices (cultism, religious intolerance, drug addition, unsafe enviroment) constituting barriers to learning.	-.631	.450	.212	-.037	.048	.029	-.119
The reputation of the programmes among employers.	.565	-.041	.497	.355	-.121	.214	-.056
Quality of overall campus environment, facilities inside the institution, interaction and safety.	.536	.085	-.391	-.026	.168	.392	.041
Provision of scholarship / financial assistance.	.530	.352	-.262	-.142	.172	-.163	-.473
Quality of the lecturer and of teaching leading to student academic achievement	.520	.387	-.050	-.279	-.388	.126	.057
The prestige and image of the fields of study in the institution.	.439	-.327	.276	-.119	.408	.072	.008
Quality of sporting and recreation facilities	-.207	.772	-.164	.159	-.043	-.002	.043
The extent to which distance from home including the time taken to get to school affect learning.	-.190	.580	.211	-.393	.267	.161	.263
Extent to which faith in God/ luck affects learning.	-.402	.580	.255	.196	.111	.091	.103
Extent to what parents say about the programmes affects learning.	.109	.550	-.484	.219	-.202	.160	.030
The money that students would have to pay consisting of tuition fees, food, rents and other expenses from date of commencement of study to graduation	-.253	.196	.739	-.161	.302	.029	-.123
Prospects of qualification for postgraduate studies overseas.	.435	.118	.562	.373	.095	.041	-.092
Relationship of institution with community.	-.409	.139	.520	.250	-.383	.047	.257
Extent to which age institution/ year of academic / year of establishment has influence on experience/ maturity of academic/administrative staff and availability of facilities for learning.	.070	.053	-.481	.446	.057	-.324	.443
Extent to which physical infrastructure and facilities (lecture,rooms, library,laboratories,students accomodation contributes to student's concentration	.413	.116	.045	-.727	-.204	.052	.138
Extent to which advice from lecturers about the course affects learning.	.423	.283	-.029	.242	.520	-.349	.086

Table 4.3: Factors with their respective levels

FACTORS	LEVEL 1	LEVEL 2	LEVEL 3
Quality of Lecturer/ Teaching Methods	Prof/ PhD	M Sc/ BSc	
Cost of Study	Less than N500,000	Above N500,000	
Functional Facilities	24 hours	Less than 24 hours	
Age of Institution/ Experience	Less than 10 years	10 – 30 years	Above 30 years
Programme Extension due to Volatile Environment	Extended by 6months	1 year Extension	Above 1 year extension
Reputation of Programme to Employers	Valuable(Desirable)	Not Valuable(undesirable)	

4.1.2 **Conjoint analysis procedure**.

Conjoint analysis is the measurement of joint effect of two or more independent variables on the ordering of dependent variable. It involves full-profile (full-concept) approach, where respondents rank, order, or score a set of profiles, or cards, according to preference and it is used to determine the utility value to each level of the attributes. If however more than a few factors (attributes of interest) are involved and each factor has more than a couple of levels, the total number of profiles resulting from all possible combinations of the levels becomes too great for respondents to rank effectively. To this effect fractional factorial design (An experiment which contains factors at different levels, combination of these levels form the treatments for the experiments),which presents a suitable fraction of all possible combinations of the factor levels. The resulting set, called orthogonal array, captures the main effects for each factor level.

Orthogonal Design is used to generate factor level combinations which is ranked by the respondents (Table 4.4). This is the starting point of a conjoint analysis. Each set of factor levels in an orthogonal design represents a different version of the students perception on the learning process. The analysis is in three parts for every tertiary institution covered in the study:

Firstly, plots of graph showing utilities for all the levels of the six factors; secondly, bar charts showing the relative importance of the six factors within each of the four institutions (Appendix I); and thirdly and lastly, inter-institution comparison using the six factors.

Table 4.4: **ORTHOGONAL DESIGN**

	Card ID	Quality of lectures	Cost of Study	Functional Facilities	Age of Institution	Extension of programme due to volatile	Reputation of program by Employers
1	1	Prof/Ph.D	Less than #500,00.00	24 hours	10 - 30years	1 year and above	Not valuable
2	2	M.Sc/B.Sc	Above #500,000.00	24 hours	Less than 10years	1 year and above	Not valuable
3	3	M.Sc/B.Sc	Above #500,000.00	Less than 24 hours	Less than 10years	By 6months	Not valuable
4	4	Prof/Ph.D	Above #500,000.00	Less than 24 hours	Less than 10years	None	Not valuable
5	5	M.Sc/B.Sc	Above #500,000.00	24 hours	10 - 30years	None	Valuable
6	6	M.Sc/B.Sc	Above #500,000.00	Less than 24 hours	10 - 30years	None	Valuable
7	7	Prof/Ph.D	Less than #500,00.00	24 hours	Less than 10years	None	Valuable
8	8	M.Sc/B.Sc	Less than #500,00.00	24 hours	Above 30 years	None	Not valuable
9	9	Prof/Ph.D	Above #500,000.00	Less than 24 hours	Above 30 years	1 year and above	Valuable
10	10	M.Sc/B.Sc	Less than #500,00.00	Less than 24 hours	Less than 10years	1 year and above	Valuable

11	11	Prof/Ph.D	Above #500,000.00	24 hours	Less than 10years	None	Not valuable
12	12	M.Sc/B.Sc	Less than #500,00.00	24 hours	Less than 10years	By 6months	Valuable
13	13	Prof/Ph.D	Above #500,000.00	24 hours	Above 30 years	By 6months	Valuable
14	14	Prof/Ph.D	Less than #500,00.00	Less than 24 hours	Less than 10years	None	Valuable
15	15	M.Sc/B.Sc	Less than #500,00.00	Less than 24 hours	Above 30 years	None	Not valuable
16	16	Prof/Ph.D	Less than #500,00.00	Less than 24 hours	10 - 30years	By 6months	Not valuable

Analysis of the data was done following the conjoint procedure which results in a utility score, called a part-worth, for each factor level. These utility scores, analogous to regression coefficients, provide a quantitative measure of the preference for each factor level, with larger values corresponding to greater preference.

Part-worths are expressed in a common unit, allowing them to be added together to give the total utility, or overall preference, for any combination of factor levels. The part-worth then constitutes a model for predicting the preference of any product profile, including profiles, referred to as simulation cases, that were not actually presented in the experiment.

The information obtained from this analysis is used in determining student's perceptions or judgments in this study.

4.2 Results of conjoint analysis

4.2.1 UNIVERSITY OF LAGOS

Utility Scores

Table 4.5 Utilities scores for University of Lagos

		Utility Estimate	Std. Error
A	Prof/ PhD	-.187	.899
	Msc/Bsc	.187	.899
B	Less than N500,000	.077	.899
	N500,000 and Above	-.077	.899
C	24 hours	.866	.899
	Less than 24 hours	-.866	.899
D	Less than 10 years	.319	1.198
	10 - 30 years	.619	1.405
	Above 30 years	-.938	1.405
E	None	-.367	1.198
	6 Months	1.209	1.405
	1 Year and Above	-.842	1.405
F	Valuable	-.289	.899
	Not Valuable	.289	.899
(Constant)		8.512	.993

The table above shows the utility (part-worth) scores and their standard errors for each factor level. Higher utility values indicate greater preference. Expectedly, there is an inverse relationship between cost and utility, with higher cost corresponding to lower utility (as larger negative values mean lower utility). The presence of Prof/PhD lecturers should normally correspond to high (positive) utility values. The fact that the values are negative in the case of Unilag might be due to indifference in the perception of the students that it has never been in doubt that Unilag can boast of relatively high quality lecturers. It might as well have been an error of judgement on the part of the student-respondents who might have found it difficult to rank the profiles (in conjoint questionnaires) correctly.

Since the utilities are all expressed in a common unit, they were added together to give the "**total utility"** of any combination. For example, the total utility of a school with quality of lecturers

Prof/Ph.d(high quality lecture), cost less than #500,000, 24 hours functional facility, between 10 – 30years old, Non extension of programme and valuable program reputation is:

Utility (Prof/Ph.d) + utility(less than #500,000) + utility (24hrs functionality)+ utility(10 – 30yrs of age) + utility(No extension) + utility(valuable prog) + constant

or

(-0.187) + 0.077 +0.866 + 0.619 + (-.367) + (-0.289) + 8.512 = 9.231

Relative Importance

The range of the utility values (highest to lowest) for each factor provides a measure of how important the factor was to overall preference. Factors with greater utility ranges play a more significant role than those with smaller ranges.

Table 4.5.1 Relative Importance Values for University of Lagos

A	10.742
B	12.579
C	19.574
D	24.451
E	23.578
F	9.076

Table 4.5.1 provides a measure of the relative importance of each factor known as an **importance** score or value. The values are computed by taking the utility range for each factor separately and dividing by the sum of the utility ranges for all factors. The values thus represent percentages sum up to 100. It should be noted that the calculations are done separately for each subject, and the results are then averaged over all of the subjects.

Table 4.5.2 Correlations between observed preferences for University of Lagos

	Value	Sig.
Pearson's R	.495	.026
Kendall's tau	.377	.021

Table 4.5.2 displays two statistics, Pearson's R and Kendall's tau, which provide measures of the correlation between the observed and estimated preferences. The Conjoint procedure computes correlations between the observed and predicted rank orders for these profiles as a check on the validity of the utilities. The result shows a strong positive relationship.

The bar charts in figure 1 (Appendix I) show that the relative importance of the six learning process factors as perceived by the students of University of Lagos. "Age of Institution" is perceived to be the most important factor of the factors. Next to this is "Extension of Programme" which is followed by "Functional Facilities", Cost of Study, Quality of lecturing and reputation of programme in that order.

The results also seem to that show age of institution which might mean experience plays the most important role, reputation of programme is relegated to the background as playing the least important role.

4.2.2 LAGOS STATE UNIVERSITY OJO LAGOS(LASU)

Table 4.6 Utilities scores for Lagos State University ,Ojo, Lagos

		Utility Estimate	Std. Error
A	Prof/ PhD	.228	.970
	Msc/Bsc	-.228	.970
B	Less than N500,000	.415	.970
	N500,000 and Above	-.415	.970
C	24 hours	.777	.970

	Less than 24 hours	-.777	.970
	Less than 10 years	-1.184	1.293
D	10 - 30 years	.521	1.517
	Above 30 years	.662	1.517
	None	.624	1.293
E	6 Months	1.669	1.517
	1 Year and Above	-2.293	1.517
F	Valuable	-.688	.970
	Not Valuable	.688	.970
(Constant)		8.640	1.072

Table 4.6.1 Relative importance values for Lagos State University, Ojo, Lagos

A	5.822
B	10.797
C	12.956
D	19.403
E	37.302
F	13.720

Table 4.6.2 Correlations between observed preferences for Lagos State University, Ojo, Lagos

	Value	Sig.

Pearson's R	.627	.005
Kendall's tau	.444	.008

The bar charts in figure 2 (Appendix I) establish the relative importance of the learning process factors as perceived by the LASU students. The figure shows that "Extension of Programme" is the most important factor followed by Age of Institution, Reputation of Programme, Functional Facilities, Cost of Study and Quality of Lecture/Teaching Method in descending order.

4.2.3 YABA COLLEGE OF TECHNOLOGY

Table 4.7 Utilities scores for Yaba College of Technology

		Utility Estimate	Std. Error
A	Prof/ PhD	.408	.834
	Msc/Bsc	-.408	.834
B	Less than N500,000	.351	.834
	N500,000 and Above	-.351	.834
C	24 hours	.857	.834
	Less than 24 hours	-.857	.834
D	Less than 10 years	-.742	1.112
	10 - 30 years	.608	1.304
	Above 30 years	.133	1.304
E	None	.280	1.112
	6 Months	2.287	1.304
	1 Year and Above	-2.568	1.304
F	Valuable	-.759	.834
	Not Valuable	.759	.834
(Constant)		8.615	.922

Table 4.7.1 Relative importance values for Yaba College of Technology

A	7.706
B	8.515
C	13.878
D	19.344
E	35.697
F	14.860

Table 4.7.2 Correlations between observed preferences for Yaba College of Technology

	Value	Sig.
Pearson's R	.709	.001
Kendall's tau	.533	.002

Figure 3 (Appendix I) shows the relative importance of the six learning process factors as rated by the students of Yaba College of Technology. It would appear that "extension of programme" is perceived as the most important contributor to learning process as perceived by the students of Yaba College of Technology. This is followed by "Age of Institution", reputation of programme", "functional facilities", "cost of study" and "quality of lecture/teaching method" in that order. While extension of programme which appears to show that students would prefer a smooth academic calendar seems to be the most important factor, quality of lecturers was the least important to an average student of Yabatech.

4.2.4 LAGOS STATE POLYTHECHNIC

Table 4.8 Utilities scores for Lagos State Polytechnic

		Utility Estimate	Std. Error
A	Prof/ PhD	-.067	1.056
	Msc/Bsc	.067	1.056
B	Less than N500,000	-.352	1.056
	N500,000 and Above	.352	1.056
C	24 hours	.778	1.056
	Less than 24 hours	-.778	1.056
D	Less than 10 years	-.913	1.408
	10 - 30 years	.175	1.651
	Above 30 years	.738	1.651
E	None	-.242	1.408
	6 Months	3.199	1.651
	1 Year and Above	-2.957	1.651
F	Valuable	-.800	1.056
	Not Valuable	.800	1.056
(Constant)		8.789	1.168

Table 4.8.1 Relative Importance Values for Lagos State Polytechnic

A	4.833
B	6.657
C	13.045
D	18.052
E	42.195
F	15.218

Table 4.8.2 Correlations between observed preferences for Lagos State Polytechnic

	Value	Sig.
Pearson's R	.678	.002
Kendall's tau	.550	.001

Figure 4 (Appendix I) shows that students of the Lagos State Polytechnic perceive "extension of programme" as most important contributor to learning process at the institution. This may be borne out of the notoriety of the institution for shut-downs. "Age of institution" is the next most important factor followed by reputation of programmes "functional facilities", "cost of study", and "quality of lecture/teaching method" in descending order.

Table 4.9 COMPARISON TABLE (RELATIVE IMPORTANCE)

INSITUTIONS	UNILAG	LASU	YABATECH	LASPOTECH
QUALITY OF LECTURE	10.742(36.7%)	5.822(20%)	7.706(26.7%)	4.833(16.7%)
COST OF STUDY	12.579(36.7%)	10.797(27.5%)	8.515(22.5%)	6.657(17.5%)
FUNCTIONAL FACILITIES	19.574(33.3%)	12.956(21.7%)	13.878(23.3%)	13.045(21.7%)
AGE/EXPERIENCE/REPUTATION OF INSTITUTION	24.451(30.9%)	19.4(23.5%)	19.344(23.5%)	18.052(22.2%)
EXTENSION OF PROGRAMMES	23.578(17.3%)	37.3(26.6%)	35.697(25.9%)	42.195(30.2%)
REPUTATION OF PROGRAMME	9.076(17%)	13.72(26.4%)	14.86(28%)	15.218(28.6%)

From the above relative importance table, age/experience of institution appears to have the highest influence on Unilag students' as against extension of programmes duration that was ranked to have the highest influence in the other three institutions used. This may be due to the fact that Unilag has not witnessed any serious crisis that could lead to the closure of the University in the last ten years, hence the current set of students could not imagine what could lead to extension of programmes. Nonetheless, this set of students' perceived extension of programmes to have the second highest influence while provision of functional facilities was ranked third.

Students in the other three institutions ranked extension of programmes as most influential. This is followed by age/experience of institution,and reputation of programme in that order. Other interpretations can simply be derived from Table 4.9.

COMPARISON USING CHARTS

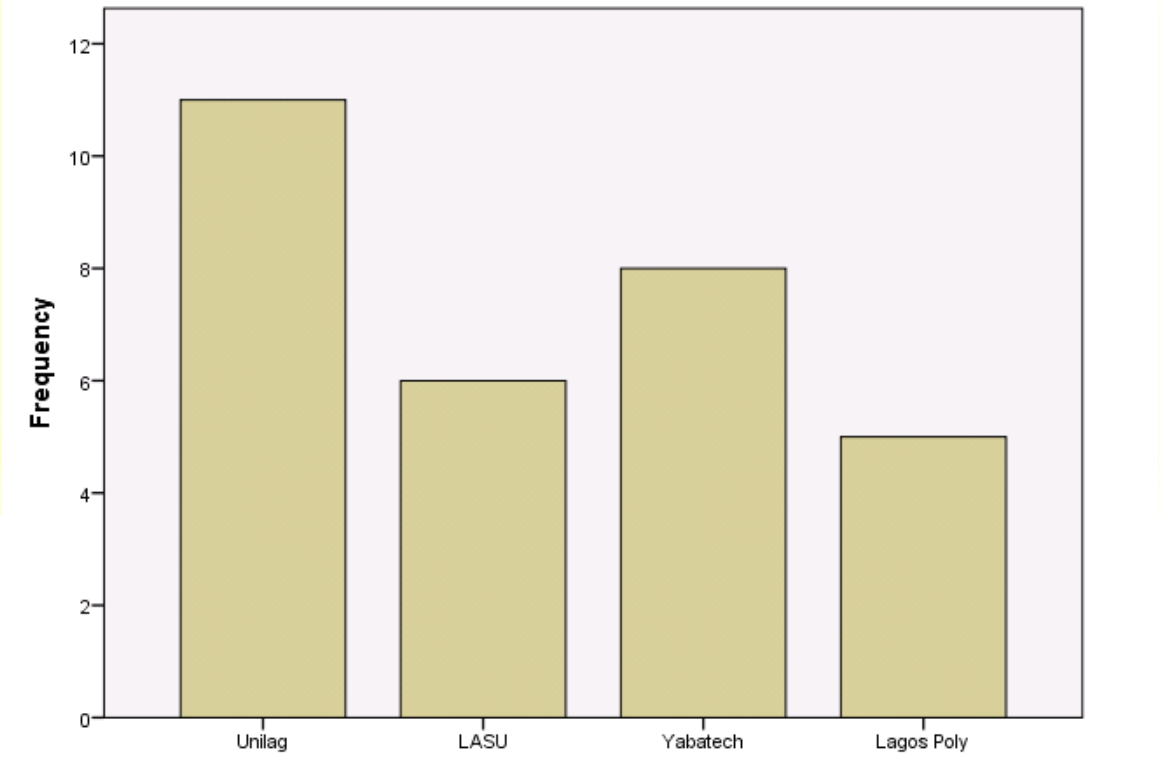


Figure 4.2: Perception of students on the quality of lecturing/teaching method

The above bar charts suggest that the perception of students of University of Lagos (Unilag) on the quality of lecturing/teaching method as a learning process factor was relatively higher than in any other institution considered in this study. Yaba College of Technology (Yabatech) was next while LASU and Lagos Polytechnic in that order followed.

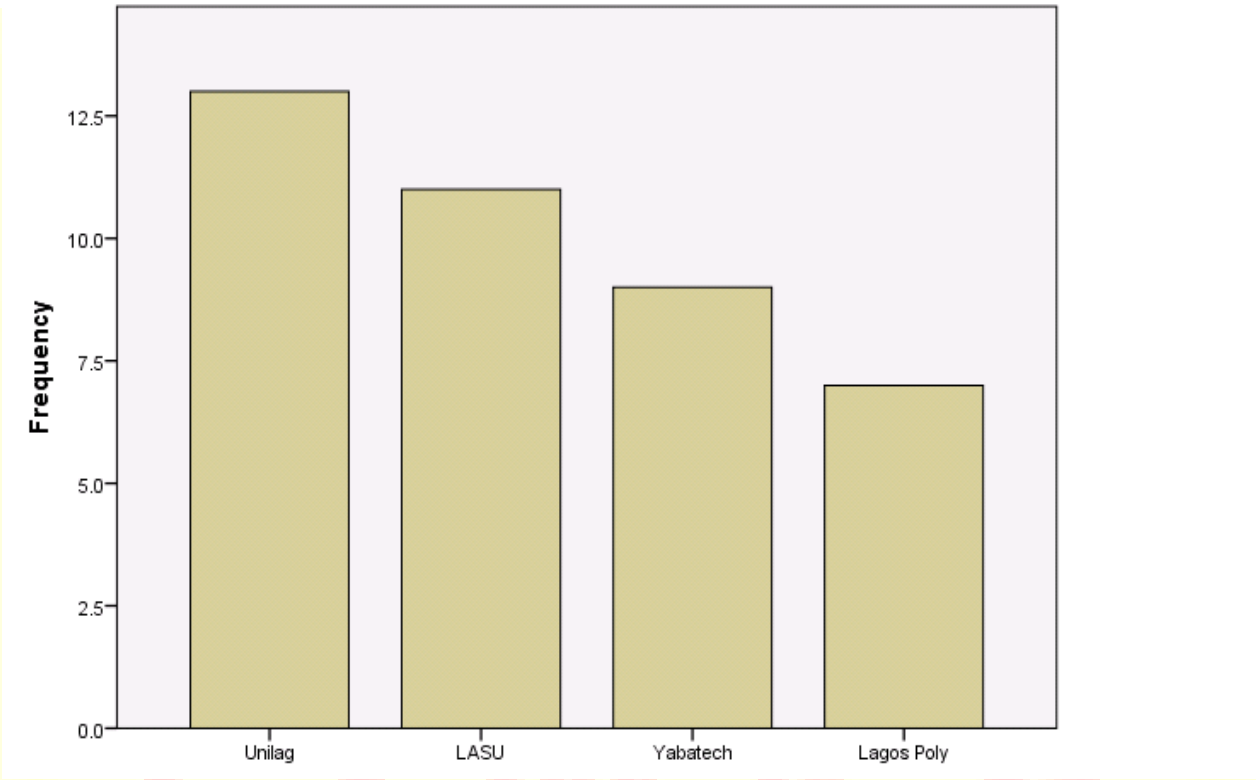


Figure 4.3: Perception of students on cost of study

Apparently on cost/benefit basis, the Unilag students perceive "cost of study" as a potent contributor to learning process in Unilag more than students in other three institutions covered in the study. LASU, Yabatech and Lagos Poly followed in descending order. This appears consistent with the economic models of choice by Becker (1975), that students are rational and make careful cost-benefit decisions by maximising their utility and minimising their risks in order to obtain the best choice for them (Raposo and Alves, 2007).

The bar charts in figure 4.4 suggest that Unilag students have the strongest perception on functional facilities as a potent factor in learning process in Unilag. This was followed by Yabatech and closely after Yabatech are LASU and Lagos Poly that seem to be at par on their students perceptions on functional facilities.

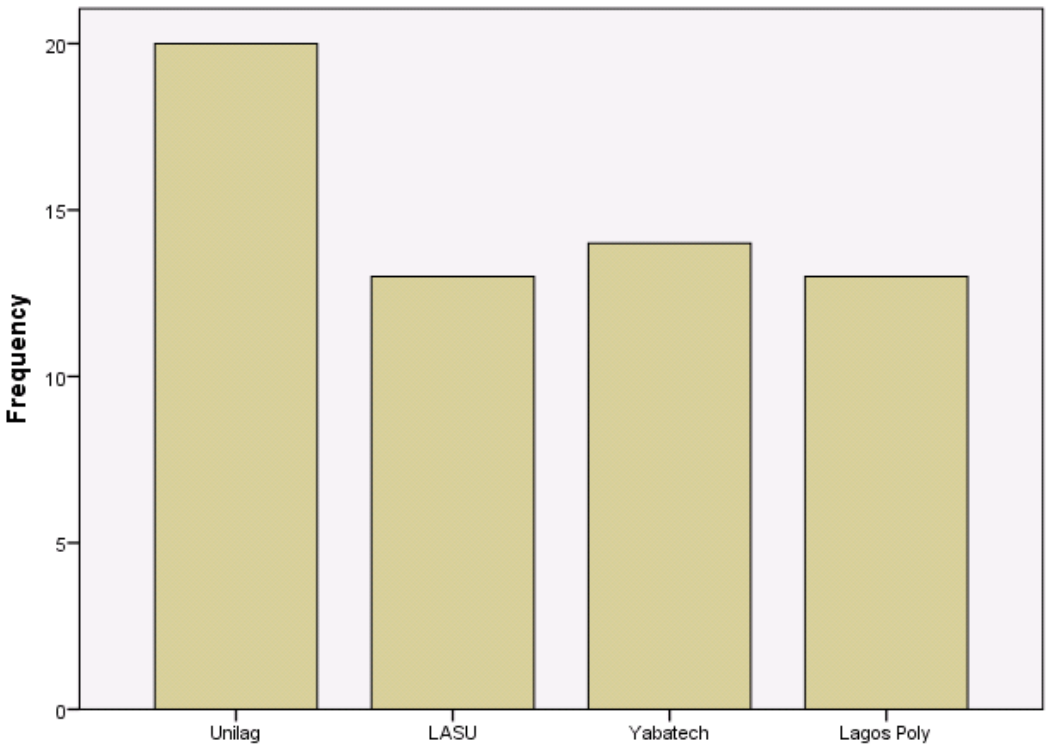


Figure 4.4: Perception of students on functional facilities

The bar chart in figure 4.5 shows that the perception of students on age/experience of institution was strongest among the students of Unilag, followed by LASU and Yabatech who are surprisingly at par on this factor and lastly by the Lagos State Polytechnic.

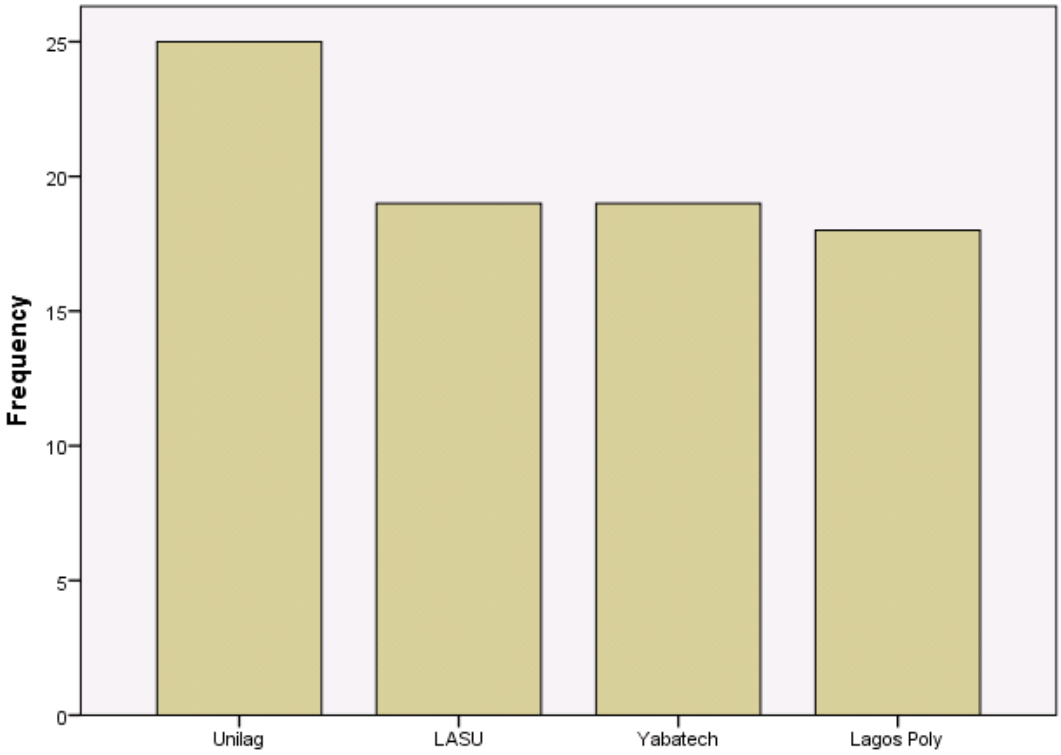


Figure 4.5: Perception of students on the age/experience of the institution.

The bar charts in figure 4.6 show that the perception of students on the extension of their programme duration as a factor in learning process is strongest among the Lagos Polytechnic students. This is followed by LASU. Incidentally these two institutions are owned by the same Lagos State Government. Next to LASU is Yabatech and the weakest perception rating is among the Unilag students. Incidentally these are Federal institutions that are less vulnerable to shut-downs.

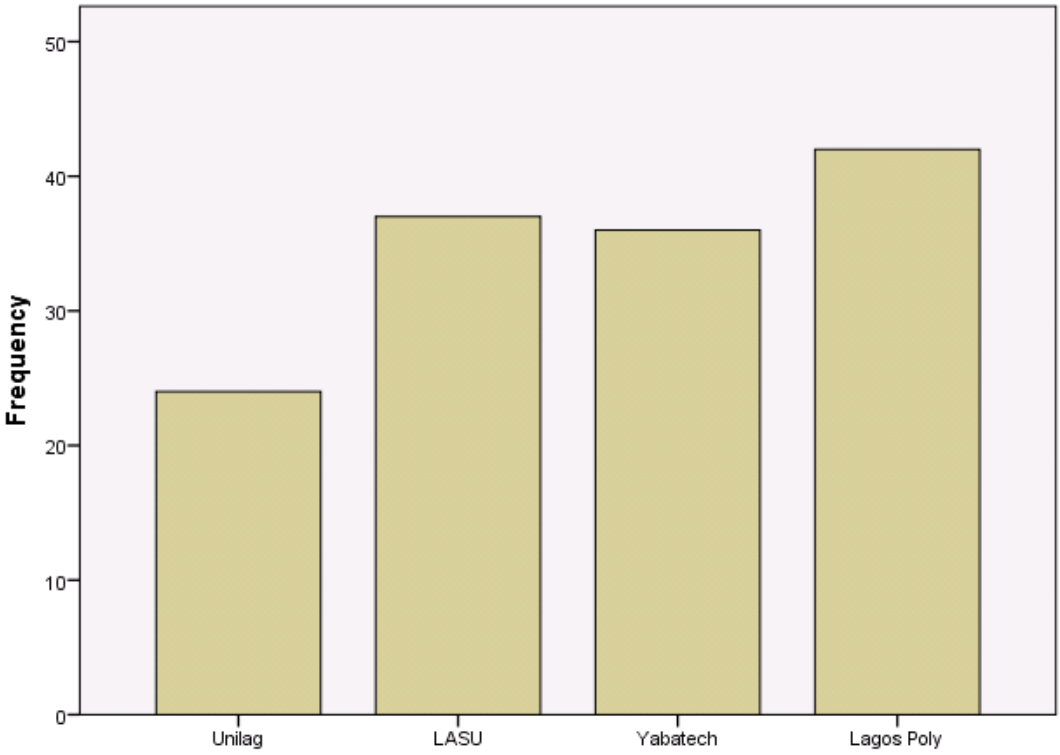


Figure 4.6: Perception of students on the extension of their programme duration.

The chart in figure 4.7 suggests that Yabatech, Lagos Polytechnic recorded the strongest perceptions among their students on the reputation of their programmes. This position is followed by the perception rating of the LASU students. Unilag recorded the lowest perception rating among its students. This seems to be unrealistic and may need further study to authenticate this finding.

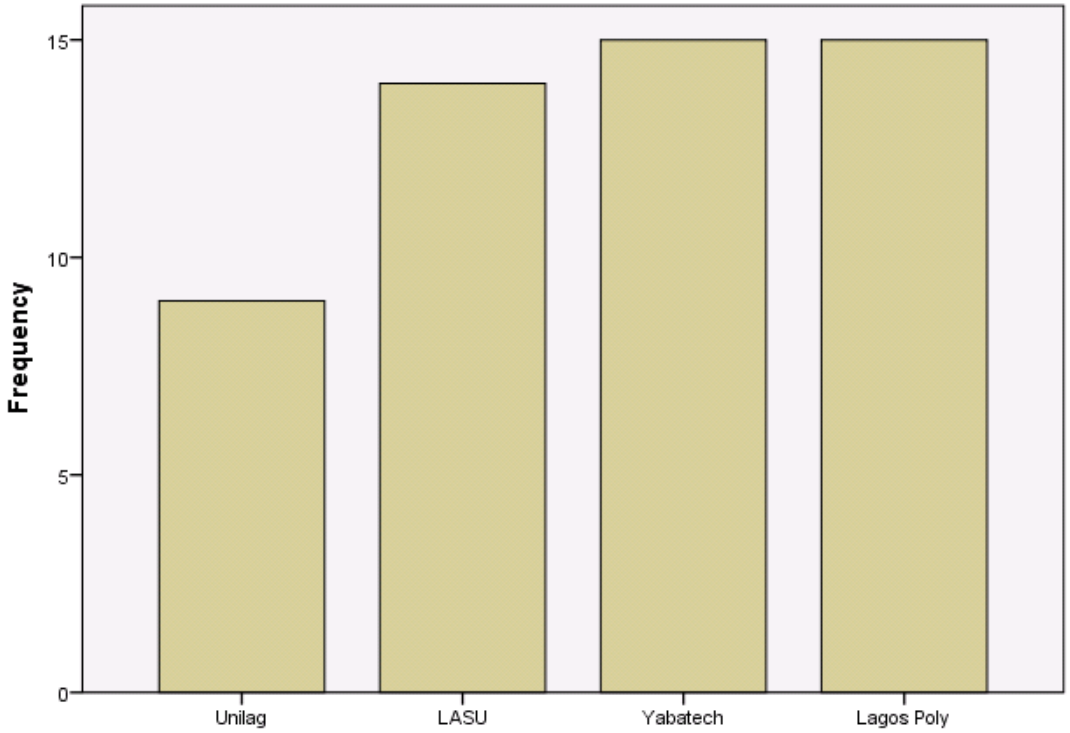


Figure 4.7: Perception of students on the reputation of their programme(s) to employers.

5.0 **Discussion and conclusion**

In Unilag, age/experience and reputation of institution are perceived by its students as the most important learning process factor. Compared to other three tertiary educational institutions covered in this study, Unilag still retains a "frontline" position. This is not too surprising when one considers the age of Unilag relative to the ages of LASU and Lagos State Polytechnic. It would however appear that the Yabatech students do not perceive the age of their institution (which is the oldest of the four institutions) as the most important contributory factor to learning process.

When learning in an educational institution, students are influenced not only by their own perceptions and attitudes, but also by what other people think. University or Polytechnic reputation relates to the general prominence of an institution in the public eye. The need to study at a prestigious institution is related to interest in studying in the public university or polytechnic

rather than in the private ones. This finding is consistent with the expectation that if one studies in a reputable institution, there is an opportunity to find a job easily after graduation.

"Extension of Programmes" which is the second most important learning process factor among Unilag students is perceived by the students of the other three institutions as the most important learning process factor. It is noteworthy that the Lagos State -owned institutions are vulnerable to shut-downs more than the Federal Institutions.

On 'quality of lecturing', although the Unilag students perceive it as the second least important learning process factor after 'reputation of programme', their perception is still relatively higher than the perceptions of students of other three institutions. The relatively higher concentration of Professors and PhD holders in Unilag than in other three institutions explains the reported comparative results.

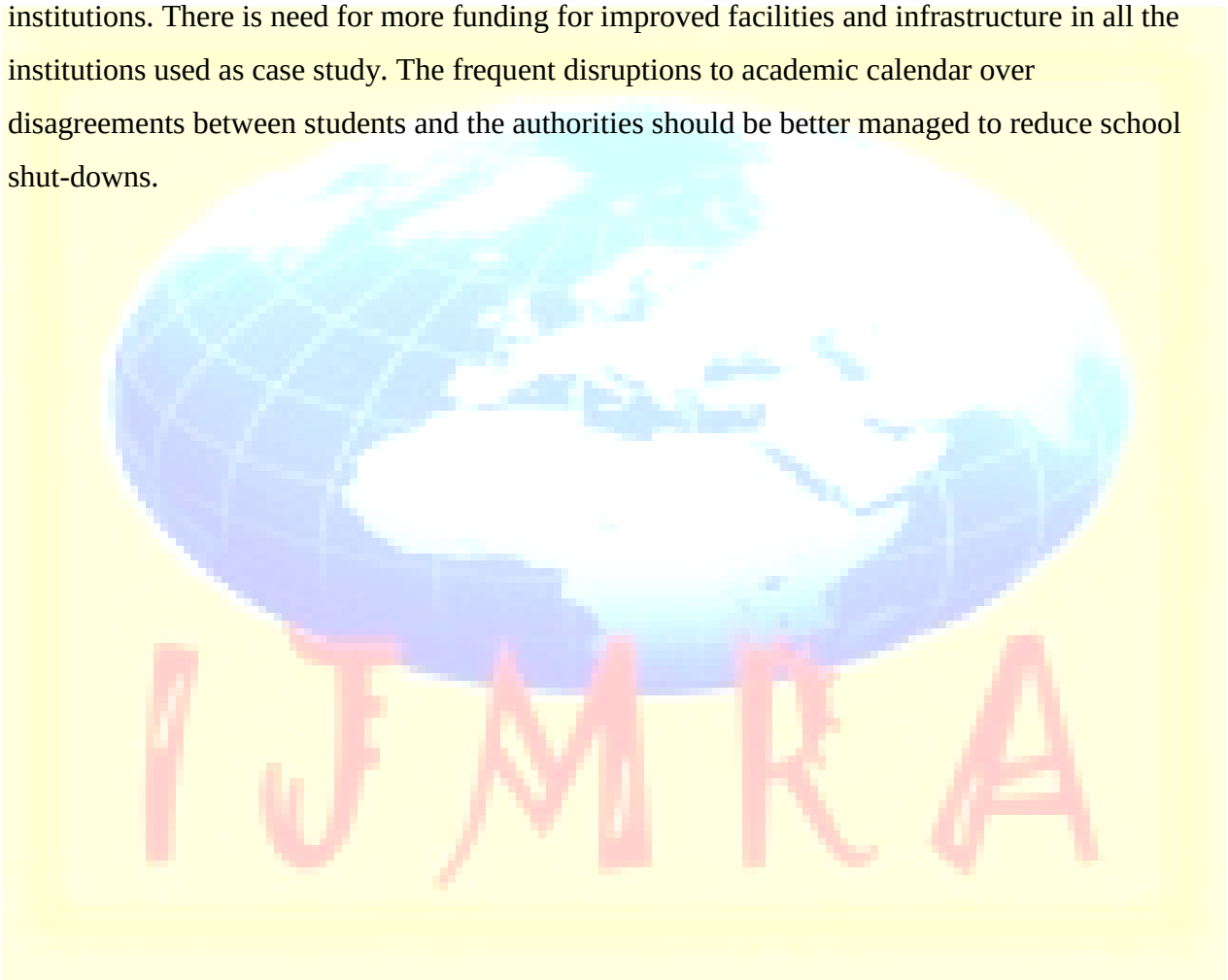
The perception of Unilag students on 'cost of study' as a fourth most important learning process factor in Unilag puts Unilag on top of the tertiary institutions covered in this study on 'cost of study' as a learning process factor. The inference from this result is the relatively bumper subsidy which students of the Federal tertiary institutions enjoy more than their counterparts in the state-owned institutions.

It is evident that students took into consideration cost and affordability. It is also consistent with economic models of choice by Becker (1975),that students are rational and make careful cost-benefit decisions by maximising their utility and minimising their risks in order to obtain the best choice for them (Raposo and Alves, 2007).

Comparative perceptions on 'Functional Facilities' as learning process factor show that Unilag is ahead of the other institutions followed by Yabatech. This would seem to suggest that in the judgment of the students, Federal tertiary institutions enjoy better 'Functional Facilities' as a learning process factor than the state-owned counterparts. However, this should not be interpreted to mean that the Federal institutions enjoyed better funding from the Federal Government; rather, the institutions enjoyed the support of private organisations as well as alumnus of the institutions.

5.1 **Policy implications**

In order to improve students' learning process which is the desire of every rational government, there is need for the state government in Lagos State to do more for the two state-owned tertiary institutions covered in this study in the areas of 'Quality of Lecturer', 'cost of study', Functional Facilities' and 'Extension of programmes. The known policy formulated by the NUC which expects only PhD holders as lecturers has to be implemented across-board. There is also need to subsidise tuition fees so as to provide relief for students especially in the state owned-institutions. There is need for more funding for improved facilities and infrastructure in all the institutions used as case study. The frequent disruptions to academic calendar over disagreements between students and the authorities should be better managed to reduce school shut-downs.



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APPENDIX I

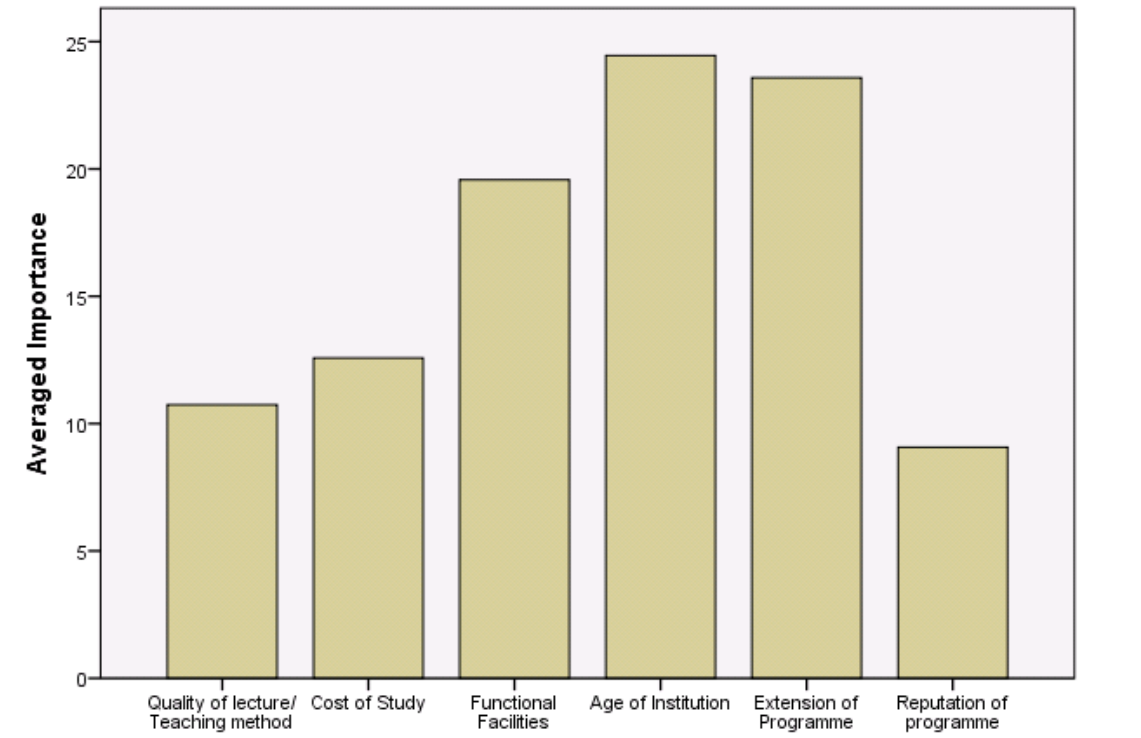

Figure 1: Relative importance of factors for University of Lagos

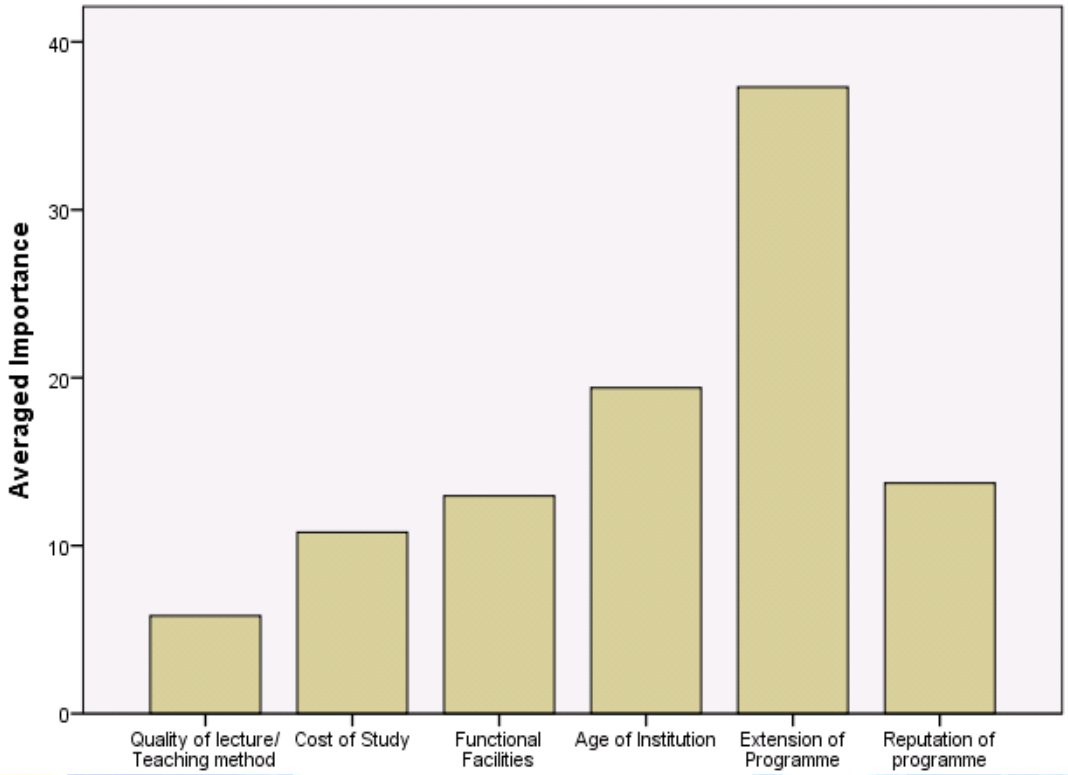

Figure 2: Relative importance of factors for Lagos State University, Ojo.

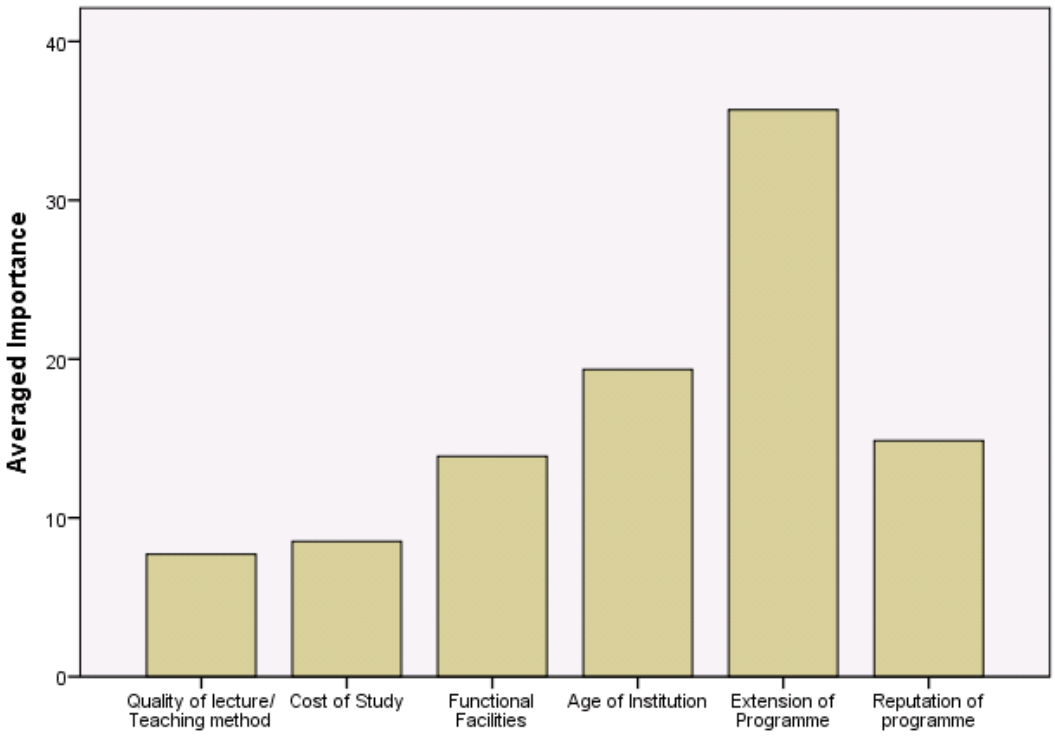

Figure 3: Relative importance of factors for Yaba College of Technology

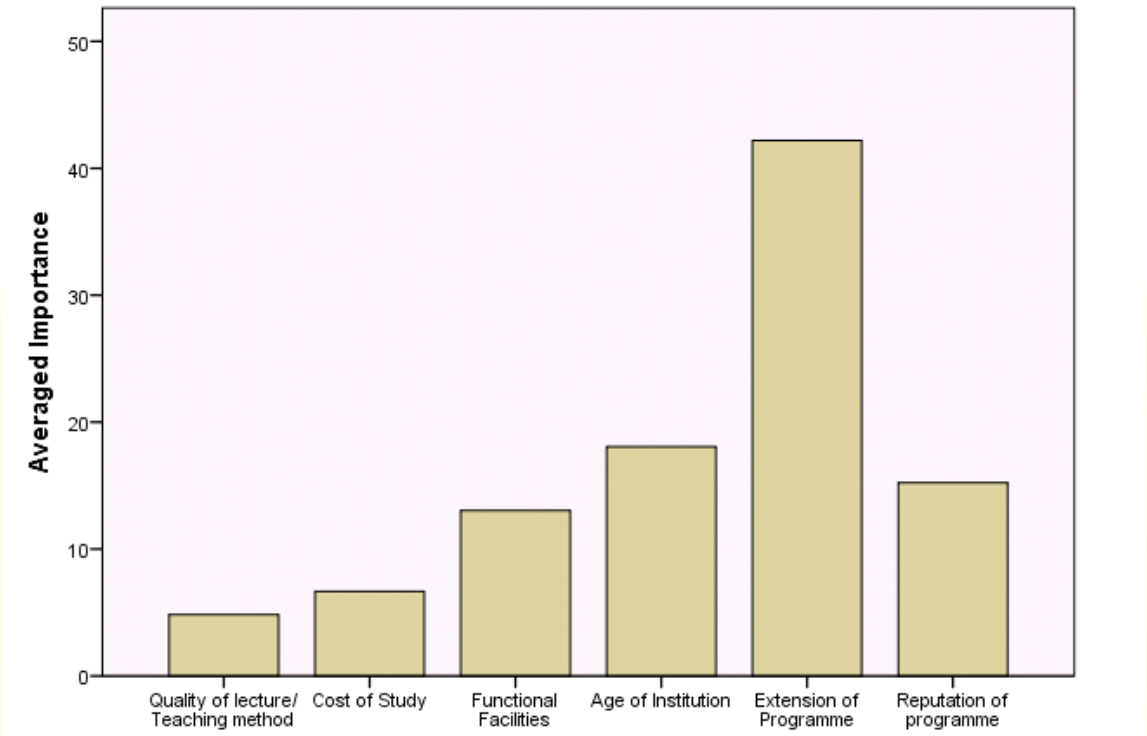

Figure 4: Relative importance of factors for Lagos State Polytechnic