

Comparative Analysis of Satisfaction with Course of Study among Students of Environmental Faculty/School in Nigerian Universities

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This study assessed the variation in the level of course of study satisfaction among the undergraduate students of the Environmental Faculty/School in some selected Nigerian tertiary institutions. The study sourced and utilised data from online survey among the participating students from the various departments under the Faculty of Environmental Technology. Survey questionnaire was designed using the Survey Menu in DATAtab statistical software and shared to students in 25 Federal, State and Private institutions across Nigeria. Responses from 1471 respondents were analysed using frequency and cross-tabulations accompanied with Chi-square tests. In performing the Chi-square tests, the contributions of each Department's response were obtained to know which Department contributed most to total Chi-Square value, hence identifying the largest contributor(s) to the differences in the data. More than 80% of the students in Architecture, Building, Estate Management and Quantity Surveying were satisfied with their course, compared to around 70% of students in Urban and Regional Planning as well as Surveying and Geoinformatics. A Chi² test carried out showed a statistically significant difference in study satisfaction among the students in the six departments ($\chi^2 (10) = 47.54, p = 0.000$). URP students were the most dissatisfied. Out of the 293 dissatisfied students, 41.3% felt that their course would not provide them with good employment opportunities, while about 29% rated their course inferior to other built environment courses. It is recommended that courses in Environmental Faculty/School should be made more multi-disciplinary and injected with many cross-cutting subjects. Students should be regularly updated about the latest technology in their courses and educated about other consultancy services they can render as graduates of Built Environment.

Keywords: Course of study, satisfaction, course transfer, curriculum change, Built Environment

INTRODUCTION

Interest, prestige of the course, employment prospects after graduation and high salary potentials are among the factors considered by students before embarking on a career journey at tertiary education level (Ogowewo 2010). Hence, students prefer engineering, medical, Information and Communication Technology and Built Environment related courses. Often, there is a rivalry among the Built Environment

professionals as to who is the leader in the construction industry (Olanrewaju *et al.*, 2014). Awareness of this rivalry among the students in training tends to affect their perception and satisfaction with their Course of Study. Literature on students' satisfaction with their courses of study take different dimensions. While some researchers concentrated on choice of institutions (Silwal & Baral, 2021), satisfaction with higher institutions (García-Aracil, 2009) and the influence of

institutional factors (Daniel *et al.*, 2017), others focused on assessing satisfaction (Elliott & Shin, 2002), the impact of satisfaction on academic performance (Hijazi & Naqvi, 2006) or a particular discipline (George *et al.*, 1987).

Student's satisfaction as defined by Elliott and Shin (2002) "is the favourability of a student's subjective evaluation of the various outcomes and experiences associated with education." Student satisfaction with a course can facilitate student retention and can also be used to assess faculty effectiveness (Howell & Buck, 2012). Interest in a particular course of study usually starts from the pre-university admission years. As noted by George *et al.* (1987), majority of students in their study indicated that their most interesting science course was discovered while in high school, that is, secondary schools (88.8%) and that 64.1% indicated that their interest in a possible career in chemistry developed in high school. Thereafter, the institution characteristics or the quality of the higher institutions chosen to pursue course of study also is an important factor influencing satisfaction and consequently student's retention.

Stephens (2007) examined the relationship of the students' identification of importance and satisfaction with institutional factors (those factors that the institutions can control) of Georgia's technical colleges. The researcher's findings revealed that students ranked the factors of instructional effectiveness, registration effectiveness, and academic advising/counselling as the most important factors within the institution. In another study, García-Aracil (2009) investigated satisfaction rates with courses of study among young European higher education graduates and found such factors as environmental factors, field of study, usefulness of study and other individual-specific characteristics to be the dominant factors. Other factors found to be significant included course content

and social aspects while opportunity to participate in research projects and poor supply of teaching materials were the critical factors for dissatisfaction.

Course satisfaction has also been found to be positively influenced by factors such as relevancy of subject-matter, faculty subject-matter competency, faculty classroom management, student workload, teaching conditions and teaching management (Howell & Buck 2012; Gao *et al.*, 2021). Other factors identified included student's personal characteristics and study-related factors, for example, career possibilities, study prestige (Alonderiene & Klimavičienė 2013), effective materials communication and communication from the instructor (Mejia, 2019).

Apart from Reinders (2019) that attempted inter-university analysis at the Universities at Athens, Groningen and Leeds that examined difference in public and private university students' satisfaction, only few studies have been done on inter-disciplinary analysis of students' satisfaction. Most of the previous studies have concentrated on academic performance and factors responsible for the performance in or satisfaction with the courses. Few studies that focussed exclusively on the built environment courses included the works of Marasini and Barfoot (2012) that looked into the alumni and employer perception of the courses and Jimoh *et al.* (2018) which examined the barriers of female students' choice of built environment courses. This study examined the variation in the level of course of study satisfaction among the students of Architecture (ARC), Building (BLD), Estate Management and Valuation (EMV), Quantity Surveying (QTS), Surveying and Geoinformatics (SVG) and Urban and Regional Planning (URP) Departments across Nigerian Universities. The objective of the study, therefore, is to assess whether there is a difference in the level of course satisfaction among the

students in the six Departments in the Faculty/School of Environmental Studies in Nigerian Universities.

RESEARCH METHODOLOGY

Data for this study were sourced from online survey conducted among the participating students from the various Departments under the Faculty/School of Environmental Technology in Nigerian Universities. Lecturers were contacted in the various Departments in the Faculty/School of Environmental Management/Technology/Design.

Through them, students' Class Representatives were contacted and the Lead Researcher was temporarily added to their classes WhatsApp Group platform. A questionnaire "Level of Course of Study Satisfaction" (LECOSSATS) was designed using the Survey Menu in DATAtab statistical software. The link for the questionnaire was then circulated on the various Classes' WhatsApp Groups in each Department. The completed questionnaires were received in real-time. Detailed data on change of courses resulting in inter-departmental and inter-faculty movement of candidates right from the initial JAMB course choice through the Screening Exercise and the final admission exercise stages from different universities are usually not published and readily available hence a case study of the

Federal University of Technology was embarked upon in this study.

Methods of analysis included frequency of responses and cross-tabulations accompanied with Chi-square tests. A non-parametric statistic (Chi-squared) was employed as the sample distribution did not meet probabilistic sampling requirements. In performing the Chi-square tests, the contributions of each response in each Department were obtained in order to know which Department contributed the most to total Chi-Square value hence identifying the largest contributor(s) to the differences in the data. Responses to the open-ended questions were appropriately coded and reported in frequencies.

Participating Universities

A total of 1471 responses were received from 25 Federal, State and Private Universities notably the Federal University of Technology, Minna (FUT Minna), Kano State University of Science and Technology, Wudil (KUST), Ahmadu Bello University, Zaria (ABU Zaria) and University of Ilorin, Ilorin (Unilorin). Responses from some 12 other universities were too low ranging from one to five contributing a combined figure of 27 and were therefore grouped as "Other Universities." The distribution of responses from all the participating universities is shown in Table 1.

Table 1: Distribution of responses from participating Universities

University	Counts
Federal University of Technology Minna	780
Kano State University of Science and Technology Wudil	131
Ahmadu Bello University, Zaria	126
University of Ilorin	123
Ladoke Akintola University of Technology, Ogbomosho	61
University of Jos	53
Abubakar Tafawa Balewa University, Bauchi	39
Federal University of Technology Akure	39
Nnamdi Azikiwe University, Awka	28
Bayero University, Kano	24
University of Ibadan	24
Benue State University, Makurdi	16
Other Universities	27

In terms of responses by course of study, the number of responding students was nearly uniform (about 200 each) except for Surveying and Geoinformatics (176) and Urban and Regional Planning (456) as can be seen in Table 2.

Table 2: Responses by Course of Study

Levels	Count	% of Total
Architecture	212	14.5 %
Building	215	14.7 %
Estate Management and Valuation	212	14.5 %
Quantity Surveying	196	13.4 %
Surveying and Geoinformatics	176	12.0 %
Urban and Regional Planning	456	31.1 %

The highest response rate was obtained from the fifth year (500 Level) students (34.7%) while the least was from the first year (100 Level) students (12.1%). Responses from other Levels stood at over 15% as shown in Table 3

Table 3: Responses by Level of Study

Levels	Counts	% of Total
100L	177	12.1 %
200L	253	17.3 %
300L	291	19.8 %
400L	236	16.1 %
500L	509	34.7 %

RESULTS

Change of Department

During the admission process in Nigerian Universities, some students may be rejected from their original course of choice either due to inadequacies in their Ordinary Level examinations results or not meeting the cut-off scores for admission into the departments. The options available include waiting till another academic session for another

attempt or change to another course for which the minimum requirements are met. In this study, 164 students (11.25%) changed from other courses to their present courses but the figure varies from 3.30% in Architecture, 7.95% in Surveying and Geoinformatics, 11.22% in Quantity Surveying to over 13% in Estate Management and Urban and Regional Planning Departments as shown in Figure 1. The low absorption values for Architecture and Surveying and

Geoinformatics Departments may be due to the strict requirements that are a bit difficult for transferring students to meet, that is, low admission quota, relatively high cut-off marks from Screening Exercise and the requirements of credit level passes in Physics and Geography. The difference in change of Department values was found to be statistically significance ($\chi^2(5) = 20.9, p = < .001$).

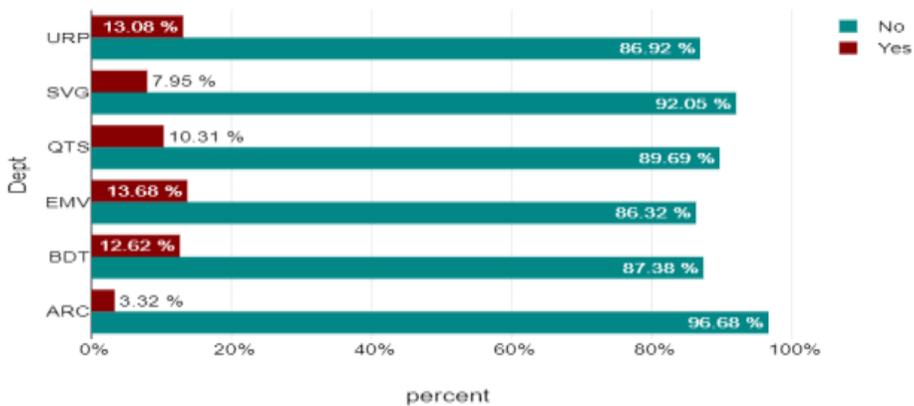


Figure 1: Distribution of Students that Changed or did not Change Department

Inter-Departmental Transfers during Admission Process

A five-year admission data (2016 – 2020) was obtained from the Federal University of Technology Minna. After setting the cut-off marks for admission, some students who could not meet the cut-off points or are deficient in core Ordinary Level subject requirements usually shop for courses that can accommodate them during their registration for the University Pre-Admission Screening Exercise (UPASE) resulting in gains or losses for some Departments. Thus, as can be seen in Table 4 where Architecture and Estate Management and Valuation Departments recorded -54.66% and -22.8% decreases respectively compared to 96.2% and 59.3% gain in Building and Quantity Surveying Departments respectively.

Table 4: Distribution of JAMB and Screening Candidates by Department of Choice 2016 to 2020 in FUTMINNA

Dept	JAMB	UPASE Registration	% change
ARC	2991	1356	-54.7
BDT	692	1358	96.2
EMV	443	342	-22.8
QTS	795	1266	59.3
SVG	714	759	6.3
URP	316	397	25.6
	5951	5478	-7.94824

This was probed further to gain insight into inter-departmental movement pattern of the students.

Table 5 (see appendix) shows that 3,129 candidates who scaled the screening exercise into the School of Environmental Technology courses were admitted into

Sources of students in various Departments

From the entire data pertaining to admission in all Departments in the

Inter-departmental movement of students within the School of Environmental Technology during the 2016 – 2020 period shows that the Architecture Department is a significant source of students to other Departments. As shown in Table 6 (see appendix) and reading along the rows, of the 493 students admitted into Architecture Department, none was admitted on transfer from other Departments whereas the bulk of students admitted into Building (269 out of 613 (44%)), Quantity Surveying (205 out of 601 (34%)) and Urban and Regional Planning (288 out of 594 (49%)) were from the Architecture Department. One factor responsible for this is the official policy restricting maximum carrying capacity of Architecture Department to between 50 and 70 students in contrast to 80 to 150 or more in the other Departments.

the six Departments. This is made up of Architecture with 493 candidates, Quantity Surveying (613), Estate Management, Surveying and Geoinformatics, Building and Urban and Regional Planning Departments with 361, 601, 467 and 595 candidates respectively.

University, specific data for all the Departments in the School of Environmental Technology was extracted.

Compared to the survey results in Table 4, Building (46%), Quantity Surveying (38.3%) and Urban and Regional Planning (61.3%) remain the Departments sourcing bulk of their students from other Departments. In the case of Estate Management and Valuation Department (8.9%), the requirement of credit level pass in Economics at the Ordinary Level is a constraining factor as most students applying to a University of Technology may not possess this requirement.

Level of Satisfaction with Course of Study

Over 80% of Architecture, Building, Estate Management and Quantity Surveying students expressed satisfaction with their courses of study compared to about 70% of Urban and Regional Planning and Surveying and Geoinformatics students, as shown in Table 7.

Table 7: Chi-Square Test for Association: Department, Satisfied

Department	Yes	Neither Yes nor No	No	Total	Yes as % of Total
Architecture (ARC)	180 167.35 0.96	18 28.04 3.59	14 16.62 0.41	212	84.9
Building (BLD)	182 169.71 0.89	19 28.43 3.59	14 16.85 0.41	215	84.7
Estate Management and Valuation (EMV)	180 167.35 0.96	25 28.04 0.33	7 16.62 5.57	212	84.9
Quantity Surveying (QTS)	159 154.72 0.12	29 25.92 0.37	8 15.36 3.53	196	81.1
Surveying and Geoinformatics (SVG)	136 138.93 0.06	29 23.27 1.41	11 13.80 0.57	176	77.3
Urban and Regional Planning (URP)	321 359.95 4.22	74 60.30 3.11	61 35.75 17.84	456	70.4
Total	1158	194	115	1467	78.9

Cell Contents: Count; Expected count; Contribution to Chi-square

A Chi² test showed a statistically significant difference in the level of course of study satisfaction among the students of the six Departments ($\chi^2 (10) = 47.54, p = 0.000$). URP students were found to be the most discontented. A closer examination of Table 7 reveals that students reporting “Not Satisfied” in URP were more (61) than the expected (36). The Department also contributed the highest proportion to the Chi-squared value (17.84) compared to Architecture and Building (0.41 each)

and SVG (0.57) thus constituting the largest source of the difference.

Reasons for not being Satisfied with Course of Study

Out of the 293 students who were dissatisfied with their course of study, 41.3% felt their course does not offer them bright employment opportunities while about 29% perceived their course to be inferior to other Built Environment courses. Other reasons given as shown in Table 8 included “Their services is/will not be in high demand” (21.84%) and “It is not lucrative” (8.19%).

Table 8: Reasons for not being satisfied

Reason	n	%
Not much employment opportunities	121	41.30
I feel the course is inferior to other Built Environment professions	84	28.67
Service is/will not be in high demand	64	21.84
It is not lucrative	24	8.19
	293	100.00

The greatest reason for dissatisfaction varied by Department as shown in Table 9 (see appendix). The perception of course of study as being inferior to other courses in the Faculty/School ranked first or second as the cause of dissatisfaction. Fear of unemployment after graduation ranked highest among the Urban and Regional

Planning (60.90%), Surveying and Geoinformatics (45.45%) and Quantity Surveying students (43.75%). My services will not be in high demand in the future also ranked high among the Architecture (24.14%), Quantity Surveying (28.13%) and Building (23.33%) students.

Intended Actions to minimize dissatisfaction

Majority of the dissatisfied students (64.46%) accepted their fate and will continue their course of study to the end while 28.75% intended to pursue another course at the postgraduate level. These opinions vary by Department. While over 70% of the students were willing to accept their fate and remain in Architecture, Estate Management and Valuation and

Surveying and Geoinformatics, fewer number of students were willing to stay in Building (60.53%), Urban and Regional Planning (59.29%) and Quantity Surveying (58.21%). Highest percentage of students in Building (32.89%), Urban and Regional Planning (34.96%) and Quantity Surveying (37.31%) consequently intended to pursue other courses at the postgraduate level as shown in Table 10.

Table 10: Intended Actions of Dissatisfied Students

Intention	ARC	BLD	EMV	QTS	SVG	URP
Accept my fate and continue with the course and profession	51 (75%)	46 (60.53%)	50 (73.53%)	39 (58.21%)	50 (72.46%)	134 (59.29%)
Change to another Department next session	9 (13.24%)	5 (6.58%)	5 (7.35%)	3 (4.48%)	4 (5.80%)	13 (5.75%)
Pursue another course at the postgraduate level	8 (11.76%)	25 (32.89%)	13 (19.12%)	25 (37.31%)	15 (21.74%)	79 (34.96%)
Total	68	76	68	67	69	226

Readiness to Recommend Course of Study to others

About 90% of the students generally indicated their readiness to recommend

their courses to others except Urban and Regional Planning (62.59%) and Surveying and Geoinformatics (79.88%) as revealed in Table 11.

Table 11: Responses to Readiness to Recommend Course of Study

Department	No	Yes	Total	Yes as % of Total
Architecture (ARC)	23 40.71 7.702	182 164.29 1.908	205	88.78
Building (BLD)	20 40.71 10.533	185 164.29 2.610	205	90.24
Estate Management and Valuation (EMV)	15 40.71 15.891	188 162.69 3.937	203	92.61
Quantity Surveying (QTS)	24 36.73 4.415	161 148.27 1.094	185	87.03
Surveying and Geoinformatics (SVG)	33 32.56 0.006	131 131.44 0.001	164	79.88
Urban and Regional Planning (URP)	162 85.98 67.216	271 347.02 16.654	433	62.59
Total	277	1118	1395	80.14

Cell Contents: Count; Expected count; Contribution to Chi-square

A Chi² test of the difference in opinion on students' readiness to recommend their course of study to others revealed a statistically significant difference ($\chi^2 (5) = 131.97, p = 0.000$) with URP (67.22) again constituting to the largest source of the difference.

Suggestions for improving Course of Study Satisfaction

Students were given the room to comment freely on what they thought could make their course of study to be more satisfying. Their numerous responses were coded as reported in Table 12. Their responses ranged from the need for more practical work (41.30%), ICT (24.66%), curriculum change (11.95%) to more advocacy (0.91%) and government intervention (0.45%).

Table 12: Commonly Suggested ways of Increasing Course Satisfaction

Code	Commonly mentioned words by students	Frequenc y	%
Practical	Equipment handling, excursion, fieldwork, site work, real life practical, field projects, more design works	273	41.30
ICT	3D software, CAD, AutoCAD, GIS, Remote sensing skills, digital skills, computer skills, computer graphics skills, application of software, programming, LIS, ICT skills, coding skills	163	24.66
Curriculum change	Scrap pencil work, more practical works than theory. Exchange programme. Remove irrelevant courses, revise curricula, make course inter-disciplinary, reduce duration of study, introduce new innovations,	79	11.95
Entrepreneurship	Business idea, conceptual skills, FOREX trading, marketing, photography, animation, bricklaying, vocational training, crafts, electrical wiring, financial management, professionalism, Crypto trading, management skill, public speaking, furniture making, consultancy, online marketing	50	7.56
Learning environment	Interactive, adequate learning materials, enough facilities, better lecturers, giving out lecture notes early, more competent technical instructors, well equipped studio, improved approach to learning, better teaching method, highly motivated lecturers.	24	3.63
Equipment	Modern technology, use of drones, block chain, instrumentation, advanced technology,	19	2.87
Mentoring	Proper tutoring, psychology management, understanding lecturers, more attention from lecturers, mentorship, psychology,	14	2.12
Unbundling	Early specialisation, diversification, sub-division of courses,	14	2.12
Less workload	Free time for recreation, more of group work than individuals, workloads are too heavy, reduce borrowed courses, make study less stressful	9	1.36
Regulation	Enforce Building Code, law against quackery, enforce engagement of professional	7	1.06
Advocacy	Create awareness of the profession, public sensitisation, reorientation, course be introduced at secondary school level	6	0.91
Govt	Job creation, employment opportunities, implement plans	3	0.45
Total		661	100.00

These responses varied for Departments as presented in Table 13 (see appendix). All the students in all the Departments wanted more practical work, especially Building students with over 60% of the students making this suggestion. Next in importance is the intensive application of ICT with QTS topping (45.45%). Most

students suggesting curriculum change are from SVG (20.24%) calling for more hydrographic surveys, core geoinformatics courses, engineering survey work, and EMV (17.24%) suggesting injection of building technology, mineral and environmental resources valuation and engineering/plant valuation.

DISCUSSION OF FINDINGS

A total of 164 students (11.25%) students from the survey were found to have transferred to their present course of study. A substantial percentage of students of Urban and Regional Planning (13.08%), Estate Management (13.68%), Building (12.62%), and Quantity Surveying (10.31%) were transferred students compared to Architecture (3.32%) and Surveying and Geoinformatics (7.95%). This observation is supported by the specific study of the admission data from the Federal University of Technology Minna which showed that no student was allowed to transfer to Architecture Department compared to Urban and Regional Planning, Building and Quantity Surveying that had their total student's population made up of 61.28%, 46% and 38.27% from transferred students.

The entry requirements which are stringent in some departments are responsible for these observations. For instance, apart from the pegging of number of students to be admitted into Architecture Department by Architects Registration Council of Nigeria (ARCON) - the professional body responsible for the regulation of Architecture profession in Nigeria, the high cut-off score from the Unified Tertiary Matriculation Examination (usually not less than 200 out of 400 mark; though it was 220 in 2016) and Credit Pass in Physics at the Ordinary Level examinations are the other limiting factors. Also, in the conventional Universities, it is easier to transfer to the Estate Management than in the Universities of Technology because

candidates seeking admission into the Universities of Technology are usually science students and may not have Economics which is required for admission in the Department.

The Departments with the most satisfied students concerning their course of study were Estate Management and Valuation (84.9%), Building (84.7%), Architecture (84.9%) and Quantity Surveying (81.1%) while the least satisfied students were in Surveying and Geoinformatics (77.3%) and Urban and Regional Planning (70.4%). Those who were unsatisfied cited employment prospects (41.30%) and inferiority complex (28.67%) as the main reasons. Other reasons included feelings that their services will be less demanded in the future (21.84%) and "Course is not lucrative" (8.19%). This finding confirms Alonderiene and Klimavičiene (2013) conclusion that career possibilities, study prestige among others have the biggest influence on course satisfaction. These fears are not unfounded in the face of availability of computer software with Artificial Intelligence performing most of the professional tasks, high cost of professional registration, quackery, increasing difficulty in getting civil service employment, economic downturn affecting private practice and the impatience and attendant "get-rich-quick" mentality of fresh graduates.

CONCLUSION AND RECOMMENDATIONS

Students studying courses that can even be "practised" while still being under training as students or courses which allow

students to be hired by the practising professionals including the lecturers in the university are more satisfied. Such courses include Architecture, Building, Estate Management and Quantity Surveying whereas courses like Surveying and Geoinformatics and Urban and Regional Planning seem to depend on government initiation and where the professionals and the lecturers are not too visible on the field have more dissatisfied students.

It is recommended that courses in Environmental Faculty/School should be made more multi-disciplinary, which should be injected with many cross-cutting subjects. Students should be regularly updated about the latest technology in their courses and educated about other consultancy services they can render as graduates of Built Environment. With 774 Local Government Areas, job opportunities should be created for Built Environment professionals in settlement planning, housing development, restoration and maintenance of assets, monitoring and evaluation of construction projects, tourism, environmental management, facilities and infrastructure planning in order to achieve sustainable development.

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APPENDIX

Table 5: Admission data from the Federal University of Technology Minna (2016 – 2020)

Dept	2016		2017		2018		2019		2020		Total	
	Applied	Admitted										
ARC	307	63	414	70	342	88	363	169	388	103	1814	493
BDT	68	104	65	123	86	95	119	140	97	151	435	613
EMV	131	92	80	76	78	55	109	87	74	51	472	361
QTS	63	91	85	113	136	110	137	138	106	149	527	601
SVG	71	69	74	78	112	98	107	106	110	116	474	467
URP	78	109	57	119	60	142	57	124	39	100	291	594
Total	718	528	775	579	814	588	892	764	814	670	4013	3129

Table 6: Inter-Departmental Movement of Candidates during Admission Process

Dept	ARC	BDT	EMV	QTS	SVG	URP	Total	% from other Dept
ARC	493	0	0	0	0	0	493	0.00
BDT	269	331	6	4	1	2	613	46.00
EMV	13	1	329	7	3	8	361	8.86
QTS	205	3	17	371	1	4	601	38.27
SVG	71	3	6	8	377	2	467	19.27
URP	288	6	29	21	20	230	594	61.28
Total	1339	344	387	411	402	246	3129	

Table 9: Reasons for not being satisfied by Department

	Dept												Total
	ARC		BDT		EMV		QTS		SVG		URP		
	n	%	n	%	n	%	n	%	n	%	n	%	n
Course is inferior	14	48.28	16	53.33	7	35.00	7	21.88	5	22.73	35	26.32	84
Service is/will not be in high demand	7	24.14	7	23.33	3	15.00	9	28.13	4	18.18	7	5.26	37
Not much employment opportunities	5	17.24	6	20.00	5	25.00	14	43.75	10	45.45	81	60.90	121
It is not lucrative	3	10.34	1	3.33	5	25.00	2	6.25	3	13.64	10	7.52	24
	29	100	30	100	20	100	32	100	22	100	133	100	266

Table 13: Suggested ways of Increasing Course Satisfaction by Department

Suggestion	URP		SVG		EM V		ARC		BL D		QTS		Total
	n	%	n	%	n	%	n	%	N	%	n	%	
Advocacy	6	3.26	0	0	0	0	0	0	0	0	0	0	6
Curriculum change	21	11.41	17	20.24	15	17.24	12	13.79	12	10	2	2.02	79
Entrepreneurship	14	7.61	5	5.95	7	8.05	9	10.34	10	8.33	5	5.05	50
Equipment	6	3.26	4	4.76	2	2.30	3	3.45	0	0	4	4.04	19
Government	3	1.63	0	0	0	0	0	0	0	0	0	0	3
ICT	46	25	18	21.43	13	14.94	25	28.74	16	13.33	45	45.45	163
Learning environment	13	7.07	2	2.38	1	1.15	4	4.60	1	0.83	3	3.03	24
Less workload	2	1.09	2	2.38	3	3.45	2	2.30	0	0	0	0	9
Mentoring	5	2.72	2	2.38	2	2.30	2	2.30	1	0.83	2	2.02	14
Practical	62	33.70	32	38.10	41	47.13	28	32.18	73	60.83	37	37.37	273
Regulation	1	0.54	0	0	2	2.30	0	0	3	2.50	1	1.01	7
Unbundling	5	2.72	2	2.38	1	1.15	2	2.30	4	3.33	0	0	14
Total	184	100	84	100	87	100	87	100	120	100	99	100	661