

A COMPARATIVE STUDY OF MAKERERE UNIVERSITY GRADUATES OF THE FACULTIES OF ARTS AND SCIENCES

**BY
MUHAMMAD K. MAYANJA ET AL**

Background to the Study

The economic crisis that hit Uganda in the 1970s and 1980s precipitated a shock to Makerere University. The crisis hit the university in several ways: crippling under-funding, low staff pay and lack of morale, centralised management of scarce funds, deteriorating buildings and other physical facilities, shortage of equipment, chemicals and text books, cut-throat competition for the few inelastic university places and pressure for expansion despite shrinking financial resources.

As student activism resisted the introduction of cost sharing, the university's response to the shock was to privatise some places in normal regular programmes. It also launched private evening programmes and some distance education programmes. The university decentralised some powers so that the responsibility for generating funds was shared by all members of staff. This was also an incentive for those who could work hard and generate private income to have greater control over such funds.

While the Faculty of Arts (FoA) responded immediately, and recruited private students to improve its financial base, the Faculty of Science (FoS) is still lagging behind. According to Table 2 whereas FoA has 31% private students, FoS has only 8%, FoA generates 54% of its income from private students while FoS generates 4%. The sciences still lack equipment, and chemicals. A detailed review of the implementation of the Makerere University Strategic Plan 1996/97–1998/99 revealed that all the laboratory-based disciplines were generally lagging behind in adjustment. They could not run evening programmes because they still found it difficult to conduct experiments at night and carry out fieldwork. Although the staffing situation in the sciences has improved, the faculties are not in a position to pay “top-up” salary incentives because of their limited budget from private income.

Table 1: Enrolment of Government and Private Students, Budget and Staffing Position of FoA and FoS 1997/8

| | Enrolment | | | Budget (Ug. Shillings Billion) | | | Staffing | | | |
|-----|-----------|-------|--------|--------------------------------|------|--------|----------|--------|----------|------|
| | Govt | Priv. | Priv.% | Govt. | Priv | Priv.% | Est. | Filled | % Filled | SSR |
| FoA | 983 | 437 | 31 | 1.16 | 1.36 | 54 | 123 | 96 | 78 | 1:15 |
| FoS | 935 | 85 | 8 | 2.66 | 0.16 | 14 | 141 | 113 | 80 | 1:10 |

Source: Planning and Development Department, Makerere University

N.B. The Budget allocation to Science of U Shs. 2.6 is capturing the low SSR of 1:10 for FoS against 1:15 for FoA and also the good staffing position especially at the senior levels of Professor where salaries are high rather than the availability of equipment and other science requirements.

The humanities have successfully emerged from the 1980s shock of the funding crisis and their supply side in terms of funding, curriculum renewal and student enrolment has become self- sustainable. On the other hand, the Sciences are still trapped in a funding crisis with shortage of inputs and limited capacity for expansion of private fee-paying students.

Research issues

Although the supply conditions on the ground are such that the humanities are more vibrant than the sciences, the government has always emphasised the need to expand and improve science and technology education. It sees these as more critical to the development of the economy.

This study attempts to compare the performance of BA graduates (representing the humanities) to that of BSc graduates (representing all the sciences). If the supply side of FoS is still trapped in the vicious circles of under-funding, is there any visible excess demand for scientists in the employment market? Do graduates of the general science courses have a higher probability of securing employment than those of general arts courses? Are there no employment prospects for FoA graduates such that the current expansion is halted until the curriculum is fully transformed? Do graduates of FoS earn higher incomes than those of FoA? Do the graduates of FoS have a higher absorption rate in the private sector and in self-employment? These are the questions that this study seeks to answer.

METHODOLOGY

Data type and Source

The standard questionnaire developed by the Association of African Universities (AAU) was modified and administered to obtain primary data on the graduates from the arts and science faculties.

Sampling

Cluster sampling based on course, years and sex was used. In terms of years, 100 graduates in each year were selected, of which 40% were from FoS and 60% from FoA. In terms of sex, it was estimated that 20% of graduates in science-based courses are female compared with 40% in arts-based courses. These percentages were reflected in the sample.

The cut-off period for the study was 10 years (1985-1994/5) with 100 graduates selected from each year.

A representative sample was selected on the basis of the above clusters and the pattern of response was not too far different from the sample selection. Methods of reaching the graduates

The following methods were used to update the contact addresses and reach the graduates to administer the questionnaire:

- The Mass Media
- Address left behind at Convocation by the graduates
- Contact through major institutions and firms which are employing graduates.
- Through fellow graduates - the snow ball technique.

FINDINGS OF THE STUDY: TRANSITION FROM STUDY TO EMPLOYMENT

Key biographical information about the graduates:

424 graduates responded to the graduate survey questionnaire of which 286 held BA and 138 BSc degrees. The graduate break down by course and gender in Table 2 shows that only 26% of the respondents were female.

Table 2: Gender by Course of Study (per cent)

| | BA (Arts) | BSc (Sc) | Total |
|-----------|-----------|----------|-------|
| Male | 69 | 84 | 74 |
| Female | 31 | 16 | 26 |
| Total | 100 | 100 | 100 |
| Count (n) | (274) | (138) | (412) |

Question: Gender

Period taken to secure jobs

The transitional period from school to work has important indicators for the competitiveness of the course and also for the situation of the labour market.

This section focuses on the time taken to secure jobs and the number of employers contacted. In the questionnaire, graduates were asked to indicate their employment situation after being awarded FoA or FoS degrees and they had to choose from five main options for every quarter of the first year and thereafter every two years. The options were:

- Employed
- Professional education & further academic studies
- Not employed - seeking employment
- Not employed and not seeking any
- Others

FoS graduates performed a little better in the transitional period than FoA graduates. 42% of FoS graduates were able to secure employment in the six months after graduation as opposed to 33% for FoA graduates (see Table 3). If we add to this the number of graduates who went into full-time professional education and further academic studies, the percentage for FoS graduates improves to 64% against 41%.

The gap between the two categories narrows down in the subsequent time interval. For example, after one year in Table 4, 51% of FoA graduates secured jobs while the corresponding percentage for FoS is 57%.

Table 5 reveals that the average waiting period before graduates secure employment has been increasing. Prior to 1989, 34% of graduates would secure jobs within the first quarter. The percentage dropped to 22% in 1993/93.

Table 3: Career Six Months after Graduation by Course of Study (per cent)

| | BA (Arts) | BSc (Sc) | Total |
|---|-----------|----------|-------|
| Employed | 33 | 42 | 36 |
| Professional education & further academic studies | 9 | 22 | 13 |
| Not employed / Seeking employment | 52 | 35 | 46 |
| No employment and not seeking any (travels, raising children) | 5 | 2 | 4 |
| Other | 2 | 0 | 1 |
| Total | 100 | 100 | 100 |
| Count (n) | (261) | (130) | (391) |

Question: Please indicate your employment situation and your occupation after being awarded your BA or BSc degree at Makerere University.

Table 4: Career One Year after Graduation by Year of Graduation (per cent)

| | BA (Arts) | BSc (Sc) | Total |
|---|-----------|----------|-------|
| Employed | 51 | 57 | 53 |
| Professional education & further academic studies | 12 | 23 | 16 |
| Not employed / Seeking employment | 33 | 19 | 28 |
| No employment and not seeking any (travels, raising children) | 3 | 1 | 2 |
| Other | 0 | 1 | 0 |
| Total | 100 | 100 | 100 |
| Count (n) | (260) | (135) | (395) |

Question: Please indicate your employment situation and your occupation after being awarded your BA or BSc degree at Makerere University.

Table 5: Career in the First Quarter after Graduation by Year of Graduation (per cent)

| | Year of Graduation | | | | Total |
|---|--------------------|-------|-------|-------|-------|
| | 83-89 | 90-91 | 92-93 | 94-96 | |
| Employed | 34 | 14 | 22 | 25 | 25 |
| Professional education & further academic studies | 8 | 12 | 8 | 12 | 10 |
| Not employed/seeking employment | 56 | 69 | 64 | 52 | 59 |
| No employment and not seeking any (travels, raising children) | 2 | 5 | 4 | 9 | 5 |
| Other | 0 | 0 | 1 | 2 | 1 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (107) | (77) | (95) | (110) | (389) |

Question: Please indicate your employment situation and your occupation after being awarded your BA or BSc degree at Makerere University.

Number of employers contacted

FoA graduates contacted more employers than the FoS graduates. Those from the FoA category who contacted 1-2 employers were only 16% whereas the corresponding percentage from the FoS category was 31%. On the other hand, those who contacted 5 to 21 and more employers from the FoA group were 51% against 35% from the FoS group. Clearly, the arts graduates get in touch with more employers than science graduates before they finally secure employment

Table 6: Number of Employers Contacted by Year of Graduation (per cent)

| | Year of Graduation | | | | Total |
|-------------------------------|--------------------|-------|-------|-------|-------|
| | 83-89 | 90-91 | 92-93 | 94-96 | |
| Number of employers contacted | | | | | |
| 1-2 | 36 | 29 | 18 | 17 | 26 |
| 3-4 | 21 | 13 | 18 | 21 | 18 |
| 5-6 | 21 | 14 | 11 | 18 | 16 |
| 7-8 | 4 | 6 | 5 | 4 | 5 |
| 9-10 | 7 | 18 | 22 | 15 | 15 |
| 11-20 | 8 | 13 | 17 | 15 | 13 |
| 21 and more | 2 | 8 | 9 | 8 | 7 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (89) | (79) | (65) | (71) | (304) |

Question 9: How many employers did you contact before you took up your first job after graduation?

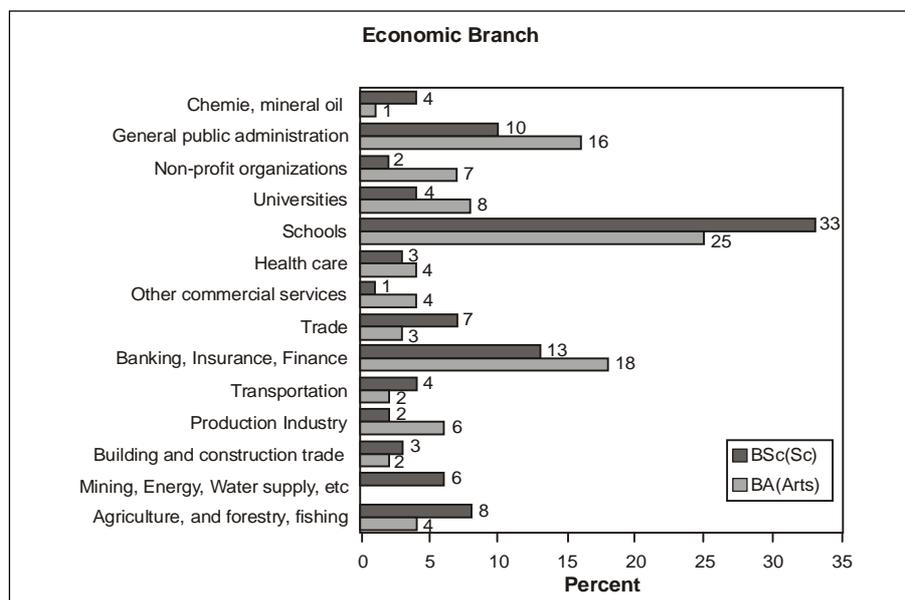
The growing job scarcity is also revealed by the number of employers contacted by the different cohorts of graduates in Table 6. According to the table, the 1983-89 cohorts of graduates who contacted 1-2 employers were 31% while the percentage of those who contacted only 1-2 had fallen to 12% in the 1994-96 cohorts. On the other hand, the percentage of those who contacted 7-21 and more employers in the 1994-96 cohort was 32 against 19 for the older cohorts of the 1983-89. Clearly, searching jobs has become more vexing and demanding due to the scarcity of jobs.

CURRENT EMPLOYMENT AND WORK

Sector of employment

The most important destinations for the graduates were education and commerce. The schools and universities took in 30% of FoA and 34% of FoS output (Chart 1). The third largest destination is the banking, insurance and finance sector, which absorbed 16% of FoA graduates and 13% of FoS graduates, followed by general administration. The manufacturing industry absorbed 3% of the graduates in 1983-89, and 7% in 1994-96. This can be taken as an indicator that the much-vaunted success story of structural adjustment in Uganda is occurring only at a slow pace. The manufacturing sector, which is so critical to economic recovery, has not yet responded to the World Bank structural adjustment prescription. According to the government of Uganda (1997/98), the manufacturing sector constituted 8.2% of gross domestic product (GDP). There are only three other sectors that maintained a two-digit share of GDP throughout the period. Clearly, the economic spread of the two categories of graduates is almost similar.

Chart 1: Economic Branch by Course of Study



Question : In which economic sector are you currently employed or otherwise professionally active? Please tick one item only. The answer should only concern your main occupation

Both FoA and FoS graduates appeared to be widely distributed in all economic branches, according to Chart 1. It should be noted, however, that the majority of graduates (86%) were in the tertiary (or service) sector. The primary sector — agriculture and forestry — absorbed only 5% while the secondary sector — industry, construction and mining and energy — together absorbed 8%. Although the tertiary sector is currently growing the most rapidly, the abysmally small proportion of those who enter the secondary sector indicates the low-level performance of Uganda’s manufacturing sector.

A trend analysis of the graduates’ destinations shows that the number of graduates entering the public sector is declining while the number joining the private sector is increasing (Table 7).

Table 7: Economic Sector by Year of Graduation (per cent)

| | Year of Graduation | | | | Total |
|------------------------------|--------------------|-------|-------|-------|-------|
| | 83-89 | 90-91 | 92-93 | 94-96 | |
| Central government | 33 | 38 | 31 | 25 | 32 |
| Local government | 9 | 13 | 13 | 10 | 11 |
| Parastatal/public enterprise | 19 | 16 | 9 | 14 | 15 |
| NGO | 6 | 7 | 18 | 9 | 10 |
| Private Employer | 26 | 17 | 27 | 40 | 27 |
| Self-employed | 6 | 5 | 3 | 2 | 4 |
| Other | 0 | 5 | 0 | 0 | 1 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (108) | (87) | (78) | (88) | (361) |

Question 18: Please state your type of employer. Please tick one item only
 In 1983-89, 33% of the graduates found their way into the central government against 25% in 1994/96, while the figures for private employers were 26% and 40% respectively. When we add together the figures for local government and public enterprises, the public service absorption rate is 61 % in 1983-89 against 49% in 1994-96. The broad private sector — including NGOs and the self-employed — absorbed 38% in 1983-89, rising to 51% in 1994-96. The proportion of those employed in the private sector has not only increased, but the private sector has also taken over from the government as the leading employer.

Table 8: Economic Branch by Course of Study, BA (Arts) BSc (Sc) Total

| | Economic Sector | | | | | | Total |
|--|-----------------|------|------|-------|------|-------|-------|
| | Agri | Indu | Comm | Educ | Admi | Other | |
| Agriculture and forestry, fishing | 100 | 0 | 0 | 0 | 0 | 0 | 5 |
| Mining, Energy, Water supply, etc | 0 | 20 | 0 | 0 | 0 | 0 | 2 |
| Building and construction trade (building constructor) | 0 | 17 | 0 | 0 | 0 | 0 | 2 |
| Production Industry | 0 | 39 | 0 | 0 | 0 | 0 | 5 |
| Transportation | 0 | 24 | 0 | 0 | 0 | 0 | 3 |
| Banking, Insurance, Finance Trade (wholesale trade and retail trade) | 0 | 0 | 68 | 0 | 0 | 0 | 16 |
| Other commercial services | 0 | 0 | 19 | 0 | 0 | 0 | 4 |
| Health care | 0 | 0 | 14 | 0 | 0 | 0 | 3 |
| Schools | 0 | 0 | 0 | 0 | 0 | 30 | 3 |
| Universities | 0 | 0 | 0 | 81 | 0 | 0 | 27 |
| Non-profit organisations | 0 | 0 | 0 | 19 | 0 | 0 | 6 |
| General public administration | 0 | 0 | 0 | 0 | 0 | 49 | 5 |
| Chemistry, Mineral Oil | 0 | 0 | 0 | 0 | 100 | 0 | 14 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (18) | (41) | (81) | (113) | (47) | (37) | (337) |

Question 19: In which economic sector are you currently employed or otherwise professionally active? Please tick one item only. The answer should only concern your main occupation.

Apart from mining and energy and water, which did not absorb any FoA graduates, the rest of the branches were fairly receptive to both FoA and FoS graduates. FoA graduates are employable in industry, transportation, banking and finance, commerce, education and other branches just as FoS graduates are also well received in these economic branches.

Promotion and Professional Development

Who was more likely to be promoted both to middle-level management and higher levels? The study included the number of subordinates and their qualification as a proxy for promotion chances of the graduates.

The interpretation of this is that, those whose were entrusted with a big number of subordinates should have been promoted.

Table 9 shows the number of subordinate staff under each graduate and also the number of graduates among the subordinates.

Table 9: Subordinates and their Qualifications by Course of Study (per cent)

| | BA (Arts) | BSc (Sc) | Total |
|---|-----------|----------|-------|
| No | 33 | 26 | 31 |
| Yes | 67 | 74 | 69 |
| Total | 100 | 100 | 100 |
| Count (n) | (229) | (114) | (343) |
| Number of subordinate employees | | | |
| 1-5 | 39 | 55 | 45 |
| 6-10 | 22 | 23 | 22 |
| 11 and more | 39 | 22 | 33 |
| Total | 100 | 100 | 100 |
| Count (n) | (149) | (87) | (236) |
| Number of subordinated employees with a university degree | | | |
| 1-5 | 77 | 90 | 81 |
| 6-10 | 8 | 5 | 7 |
| 11 and more | 15 | 5 | 12 |
| Total | 100 | 100 | 100 |
| Count (n) | (73) | (39) | (112) |

Question 24: Do you have subordinates?

According to Table 9, 74% of science graduates had subordinates working under them whereas the corresponding percentage among BA graduates was 67%. In general, therefore, FoS graduates had slightly more promotion opportunities than FoA graduates.

The middle part of Table 9 shows that proportion of FoS graduates with 1-5 subordinates was 55%, against 39% for FoA graduates and therefore FoS graduates had more chances to climb into middle-level management than those from the FoA. The FoA graduates, however, performed better than FoS graduates in the higher bracket of subordinate supervision. 39% of FoA graduates had 11 or more subordinates against 22% for FoS graduates. The same message is also carried in the bottom part of the Table 9 where the percentage of BA graduates with 11 or more high-level subordinates is three times that of FoS graduates.

The conclusion which emerges is that whereas FoS graduates had more chances of promotion to middle-level management, FoA graduates performed better at the top level of management.

The gender promotion pattern, according to Table 10, was similar to the BA/BSc. axis. Women had more promotional chances to middle management but men had more chances for promotion to top management. 53% of female FoA and 69% of FoS female graduates had 1-5 subordinate staff against 43% and 26% respectively for men. At the apex of the number of subordinates, which is our proxy for promotional chances, 23% of female FoA graduates and 15% of female FoS had 11 and more subordinate staff against 37% and 43% for male FoA and FoS respectively. Hence, promotion to higher-level management was skewed in favour of male graduates.

Table 10: Subordinates and their Qualifications by Gender and Course of Study (per cent)

| | Gender and Course of Study | | | | Total |
|--|----------------------------|-----------|----------|------------|-------|
| | Male-BA | Female-BA | Male-BSc | Female-BSc | |
| No | 34 | 25 | 32 | 32 | 31 |
| Yes | 66 | 75 | 68 | 68 | 69 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (157) | (95) | (66) | (19) | (337) |
| Number of subordinate employees | | | | | |
| 1-5 | 43 | 53 | 26 | 69 | 44 |
| 6-10 | 20 | 24 | 30 | 15 | 23 |
| 11 and more | 37 | 23 | 44 | 15 | 33 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (102) | (74) | (43) | (13) | (232) |
| Number of subordinate employees with a university degree | | | | | |
| 1-5 | 76 | 91 | 81 | 83 | 82 |
| 6-10 | 8 | 6 | 10 | 0 | 7 |
| 11 and more | 16 | 3 | 10 | 17 | 11 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (50) | (33) | (21) | (6) | (110) |

Question 24: Do you have subordinates?

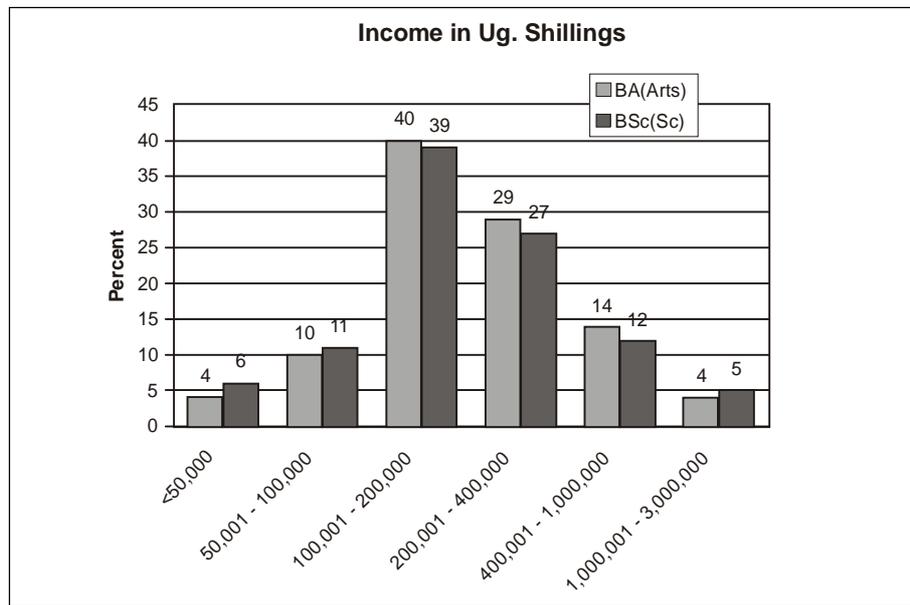
Remuneration and Fringe Benefits of Graduates

An examination of the primary and side income by course also revealed that, both FoA and FoS graduates earned more or less within the same range. (See Chart 2.)

According to Chart 2, 17% of the FoS earned Shs 100,000 or less per month. The corresponding percentage of FoA graduates was 13%. The majority of graduates earned within the range of Shs 100,000 and Shs 400,000, namely

66% of FoS graduates and 68% of FoA graduates. At the apex of the income structure, 17% of BA graduates earned between 400,000 and 3,000,000 against 17% of BSc graduates. In general, the earning level was within the same range although the FoA graduates tended to be more concentrated in the higher income bracket. However, the FoS graduates had a higher percentage of those who fell in the higher income bracket for secondary sources, which edged out and possibly, surpassed the minor advantage by FoA.

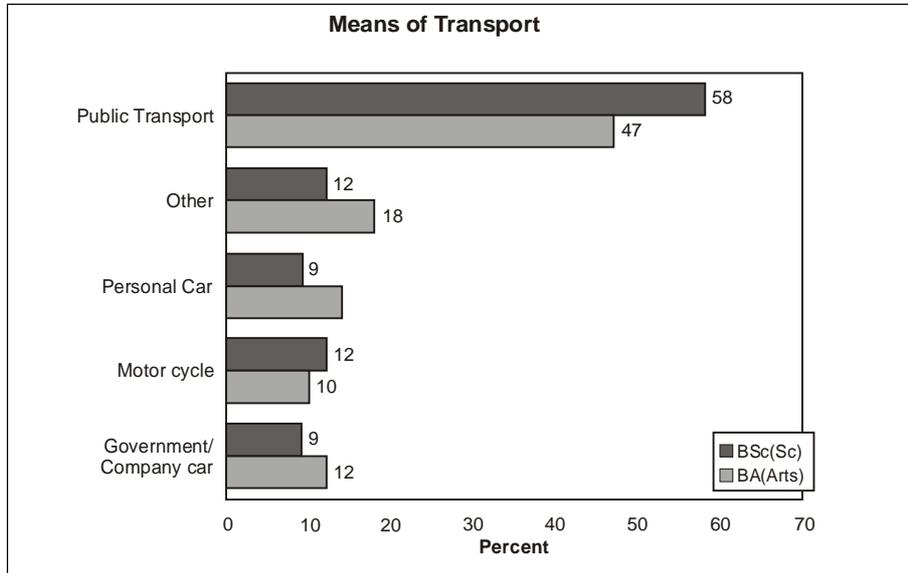
Chart 2: Income in Ugandan Shillings by Course of Study



Question : Income

Further probing into the material conditions of the graduates, using the proxy of access to either a personal car or an official car, revealed that the percentage of FoA graduates with cars was more than that of FoS graduates. According to Chart 3, 25% of FoA graduates either had personal cars or official cars, against 18 % for FoS graduates. This tends to reinforce the earlier finding that the percentage of BA graduates in top management positions was much higher than that of BSc graduates.

Chart 3 : Means of Transport by Course of Study



Question : Which of the following means of transport do you use from home to office?

Similarly, car accessibility by gender also tends to be skewed in favour of male graduates according to Table 11.

Table 11: Means of Transport by Gender and Course of Study (per cent)

| | Gender and Course of Study | | | | Total |
|--------------------------|----------------------------|-----------|----------|------------|-------|
| | Male-BA | Female-BA | Male-BSc | Female-BSc | |
| Personal car | 12 | 7 | 19 | 15 | 12 |
| Government / Company car | 9 | 9 | 16 | 5 | 10 |
| Motorcycle | 13 | 13 | 3 | 10 | 10 |
| Public Transport | 47 | 57 | 46 | 65 | 50 |
| Other | 19 | 14 | 17 | 5 | 16 |
| Total | 100 | 100 | 100 | 100 | 100 |
| Count (n) | (158) | (95) | (70) | (20) | (343) |

Question 27: Which of the following means of transport do you use from home to office?

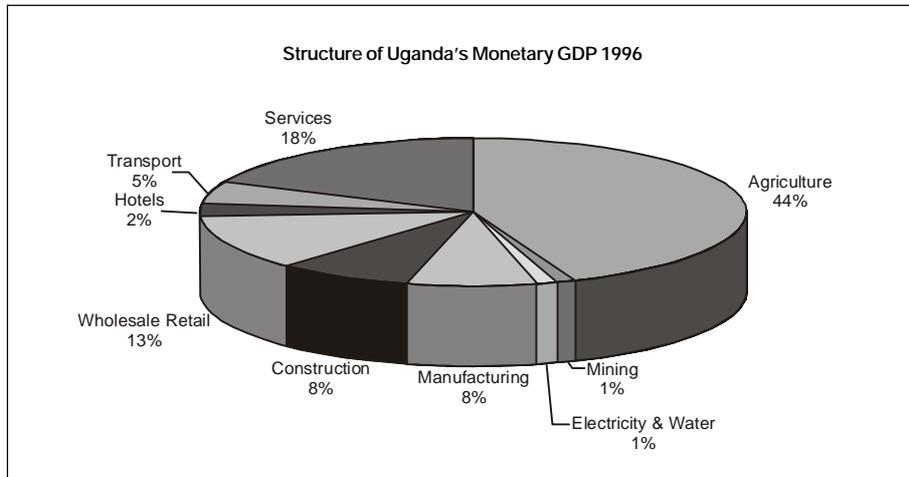
According to Table 11, 21% of male BA graduates had personal or official cars against 16 % female BA graduates. A similar pattern was also found among science graduates where 35% of male graduates had personal or official cars against 20% of female graduates. Clearly, male graduates from both FoA and

FoS degrees had more chances of acquiring personal or official cars than their female counterparts.

JOB REQUIREMENTS AND USE OF QUALIFICATIONS

The match between the qualifications and the job requirement is at the heart of the debate on higher education and work. The critical issue is whether or not the training at first-degree level should be professionalised to impart skills or should provide general education to prepare graduate to respond to their specific circumstances. Should graduates be trained to train themselves or should they be equipped with specific vocational skills as demanded in the labour market of the day? Are the demands of the labour market precisely known? Will the economy remain static so that the same demands of today continue tomorrow? For example, in Uganda today, there is a big, peasant agricultural sector, which, according to Chart 4, was 45% of GDP. If we go by the demands of the labour market today, we may gear university education to the peasant economy! What drives the other - the university or the economy?"

Chart 4: Structure of Uganda's Monetary GDP 1996



Use of Professional Knowledge and Skills

The graduates were asked to state the extent to which they used the knowledge acquired during their time in the university using a scale of 1-5 where 1 was to a very high extent and 5 not at all.

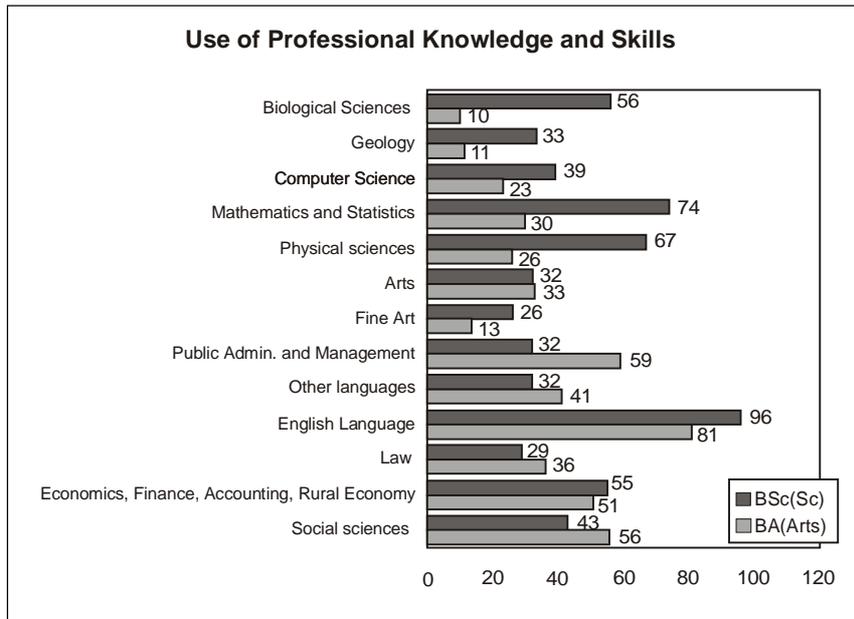
According to Chart 5, graduates of the FoA and the FoS all ranked their disciplines high. . Thus for BA graduates, subjects such as economics, law and languages were given high approval while BSc graduates gave similar assessments for subjects such as mathematics and biological sciences.

There are exceptions, however, the most striking one being physical sciences and economics, finance and banking. According to Chart 5, the FoA graduates' rating for physical science was slightly higher at 33% for response 1 and 2 than that of FoS graduates with 32%. On the other hand, FoS graduates gave a higher approval of the applicability of economics, finance and banking at 55% for the response 1 and 2 against 51% for FoA graduates. This could be taken as an indication of the considerable number of graduates who were either placed in jobs demanding just a university-level education rather than specialised disciplines, or those who were misplaced in their jobs.

The English language came out best in the assessment by both FoS, with a 96% rating for response 1 and 2, and FoA with 80%. It is, however, quite striking but not unexpected that the rating by FoS was more positive than that of FoA. This is because scientific terminology is generally difficult to translate into local languages and hence the English language is indispensable for FoS graduates, unlike terminology in the humanities that can be easily translated.

The rating for computer science was also quite striking with 74% for FoS and 30% for FoA. First, prior to 1995/96, computing for undergraduates was only provided in some disciplines in the Faculty of Sciences. So, unless the FoA graduate undertook post-graduate work or went to computer schools, they would never have had training in computing. It is, therefore, quite plausible that FoS graduates should give a higher approval of computing than FoA graduates.

Chart 5 : Use of Professional Knowledge and Skills Acquired during Studies by Course of Study



Question : To what extent do you use knowledge acquired during your studies at Makerere University in the following areas (if applicable) for your present job? Scale of answers from 1=to a very high extent to 5=not at all.

The other possibility is that the majority of establishments where both FoS and FoA graduates worked were not using computers. Apart from large establishments, most of the organisations and enterprises are not using computers in Uganda. The schools that are the largest destination for the graduates normally have one computer in the head-teacher’s office and it is not accessible to the teachers. The low computerisation rate both in the university and also in the work place may explain the low ranking of computer science, especially by FoA graduates.

A look at the trend of applying technical knowledge learned in Table 12 reveals an outstanding improvement in applicability, with the exception of English language, mathematics and statistics. The other fields were being more and more applied as time went by. For example, the rating of the utilisation of economics, finance and banking improved from 41% to 56% between 1983-89 and 1994-96 while physical science improved from 22% to 45% during the same period.

Computer science had a unique pattern according to Table 12. Its rating for response 1 and 2 started at the peak level of 63% in 1983-89 then it plummeted to 36% for the generation of 1990-91 before climbing to 50% for the youngest cohorts of graduates of 1994-96. This pattern clearly reveals that the period 1990/91 was the lowest ebb of academic degeneration at Makerere University. It is also possible that the older generations in higher positions of responsibility appreciated the use of computers more than the younger generation. However, in recent times, the rating for use of computers improved among the younger generations as well.

The improving utilisation of technical knowledge can be attributed to the growing modern sector, which makes use of such specialised knowledge. Much as Uganda still has a small modern sector, it is nevertheless expanding and the greater use of specialised knowledge of graduates reflects this fact.

Table 12: Use of Professional Knowledge and Skills Acquired during Studies, by Year of Graduation

| | Year of Graduation | | | | Total |
|--|--------------------|-------|-------|-------|-------|
| | 83-89 | 90-91 | 92-93 | 94-96 | |
| Social sciences (psychology, sociology, politics) | 2.9 | 2.6 | 2.5 | 2.6 | 2.6 |
| Economics, finance, accounting, rural economy | 2.7 | 2.5 | 2.8 | 2.5 | 2.6 |
| Law (elements relevant to subject) | 3.4 | 3.2 | 2.8 | 2.6 | 3.0 |
| Knowledge of English language | 1.6 | 1.8 | 1.8 | 1.6 | 1.7 |
| Knowledge of other languages | 3.5 | 3.7 | 2.3 | 3.3 | 3.2 |
| Public administration and management | 3.1 | 3.1 | 2.4 | 2.5 | 2.8 |
| Fine art | 4.3 | 4.0 | 3.8 | 3.6 | 4.0 |
| Arts (history, geography, philosophy, literature and journalism) | 3.5 | 3.8 | 2.8 | 3.0 | 3.3 |
| Physical sciences (physics and chemistry) | 2.6 | 3.5 | 3.1 | 3.5 | 3.1 |
| Mathematics and statistics | 2.4 | 2.9 | 2.7 | 2.7 | 2.6 |
| Computer science | 3.7 | 3.7 | 3.2 | 3.1 | 3.5 |
| Geology | 4.4 | 4.3 | 3.8 | 3.7 | 4.1 |
| Biological sciences (botany, zoology) | 3.5 | 3.9 | 3.0 | 3.9 | 3.6 |
| Count (n) | (105) | (81) | (76) | (84) | (346) |

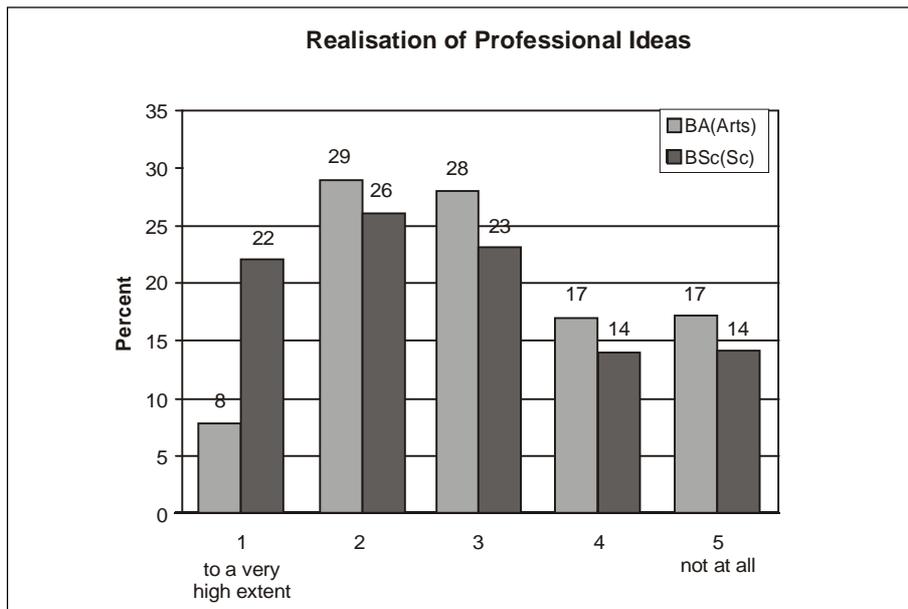
Question 33: To what extent do you use knowledge acquired during your studies at Makerere University in the following areas (if applicable) for your present job? Scale of answers from 1 = to a very high extent to 5 = not at all.

Realisation of Professional Ideas

Asked to assess the extent to which they were able to attain the careers they expected at the time of graduation, BSc graduates (with a mean score of 2.7) seem to hold a higher opinion than BA graduates (with a mean score of 3.1). According to Chart 6, the percentage score for response 1 and 2 for FoS graduates was 48% while that of FoA graduates was 38%.

In Table 13, with gender-specific data by course for the graduates' assessment of their career expectations, females (with a percentage score for response 1 and 2 for BA of 49% and 45% for BSc) were more satisfied in relation to their expectations than males with BA score (37%) and BSc. (37%).

Chart 6 : Realisation of Professional Ideas by Course of Study
 Error! Not a valid link.



Question : To what extent have you been able to realize the career you expected at the time of graduation? Scale of answers from 1=to a very high extent to 5=not at all.

Table 13: Realisation of Professional Ideas by Gender and Course of Study (per cent; arithmetical mean)

| | Gender and Course of Study | | | | Total |
|-----------------------------------|----------------------------|-----------|----------|------------|-------|
| | Male-BA | Female-BA | Male-BSc | Female-BSc | |
| Realisation of professional ideas | | | | | |
| 1 to a very high extent | 9 | 22 | 8 | 20 | 13 |
| 2 | 28 | 27 | 29 | 25 | 28 |
| 3 | 30 | 23 | 28 | 20 | 27 |
| 4 | 19 | 15 | 14 | 10 | 16 |
| 5 not at all | 15 | 12 | 21 | 25 | 16 |
| Arithmetical mean | 3.0 | 2.7 | 3.1 | 3.0 | 2.9 |
| Count (n) | (162) | (98) | (72) | (20) | (352) |

Question 36: To what extent have you been able to realise the career you expected at the time of graduation? Scale of answers from 1=to a very high extent to 5=not at all.

Realisation of career expectations has a set of factors behind it. First, it reflects the ambition and aspiration of graduates. It seems the BA graduates are more ambitious than their FoS counterparts and this may be the reason why they feel less satisfied with their career achievement. Otherwise, given that the BA graduates in some cases were doing as well as the BSc graduates and in some respects even better, it is difficult to find a satisfactory explanation for being less satisfied with their career achievement.

Secondly, in addition to ambition, the group looks at itself in relation to its reference group. It would appear that the women graduates are more satisfied than the men, not only because they are less ambitious than them, but also because in comparison with other women who are less educated, they are stars. Women are still more disadvantaged in many respects and to a certain extent oppressed by cultural attitudes. Being from an oppressed group, women who attain higher education leapfrog so many encumbrances to reach a new height of freedom at par with men that when graduate women compare themselves with illiterate women, they have cause to be more satisfied.

Finally career satisfaction also depends on the specific conditions in each establishment where the graduates work. This includes the type of management, the degree of freedom, the motivation system of the establishment and the general culture in the organisation. All these factors must be included in the complex effort to explain the responses on career satisfaction in Table 14.

General Professional Satisfaction

The general level of professional satisfaction and appropriate use of university qualifications also shows the same pattern in Tables 14, 15 and 16 with science graduates still ahead of arts graduates, and women feeling more professionally satisfied than men.

Table 14: General Professional Satisfaction by Course of Study (per cent; arithmetical mean)

| | BA (Arts) | BSc (Sc) | Total |
|-----------------------------------|-----------|----------|-------|
| General professional satisfaction | | | |
| 1 to a very high extent | 8 | 19 | 11 |
| 2 | 27 | 34 | 30 |
| 3 | 39 | 28 | 35 |
| 4 | 17 | 13 | 16 |
| 5 not at all | 9 | 5 | 8 |
| Arithmetical mean | 2.9 | 2.5 | 2.8 |
| Count (n) | (238) | (119) | (357) |

Question 38: Altogether, to what extent are you satisfied with your professional situation? Please also take into account in your statement any professional sidelines. Scale of answers from 1=to a very high extent to 5=not at all, 9 = no answer.

Table 15: General Appropriateness of the Professional Situation by Course of Study (per cent; arithmetical mean)

| | BA (Arts) | BSc (Sc) | Total |
|---|-----------|----------|-------|
| General appropriateness of the professional situation | | | |
| 1 | 18 | 19 | 19 |
| 2 | 36 | 37 | 36 |
| 3 | 23 | 26 | 24 |
| 4 | 15 | 11 | 14 |
| 5 | 7 | 8 | 7 |
| 8 | 0 | 0 | 0 |
| Arithmetical mean | 2.6 | 2.5 | 2.6 |
| Count (n) | (228) | (112) | (340) |

Question 39: To what extent is your position and status appropriate to your level of education? Please take into account all aspects which you think are important, for example the admission requirements for a profession, the chance of using qualifications, the professional and social position, further professional perspectives, etc. Scale of answers from 1=completely to 5=not at all.

Table 16: General Professional Satisfaction by Gender and Course of Study (per cent; arithmetical mean)

| | Gender and Course of Study | | | | Total |
|-----------------------------------|----------------------------|-----------|----------|------------|-------|
| | Male-BA | Female-BA | Male-BSc | Female-BSc | |
| General professional satisfaction | | | | | |
| 1 to a very high extent | 9 | 21 | 4 | 10 | 11 |
| 2 | 26 | 34 | 29 | 35 | 29 |
| 3 | 38 | 28 | 42 | 25 | 36 |
| 4 | 19 | 11 | 12 | 25 | 16 |
| 5 not at all | 8 | 5 | 12 | 5 | 8 |
| Arithmetical mean | 2.9 | 2.4 | 3.0 | 2.8 | 2.8 |
| Count (n) | (160) | (99) | (73) | (20) | (352) |

Question 38: Altogether, to what extent are you satisfied with your professional situation? Please also take into account in your statement any professional sidelines. Scale of answers from 1 = to a very high extent to 5 = not at all, 9 = no answer.

Assessment of Employment and Work

While the graduates' material condition, which was discussed in chapter 6, is significant, the total sum of their success and satisfaction includes several other non-quantifiable characteristics. This section takes up those psychological aspects that also constitute an indispensable component of motivation.

One possible approach would be to use Maslow's hierarchy of needs. The assumption would be that chapter 6 took care of the physiological need by addressing the graduates' material condition and this chapter would tackle the rest of the hierarchy. However, an exclusive Maslow's hierarchy of needs approach may not exactly bring out the most pertinent issues related to the assessment of employment and work and we shall, therefore, examine these needs under the following broad headings:

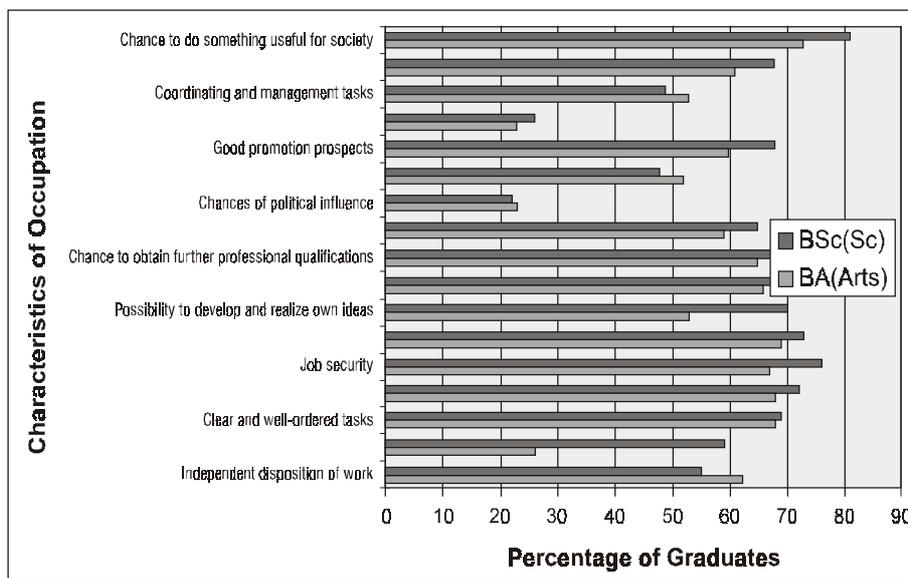
- Social/security needs
- Professional satisfaction
- Attitude to self-employment
- Anticipated career changes

Social/Security Needs

Under social/security needs, we consider job security, income, a good working atmosphere and promotion. The classification again is not watertight for there

are broad areas of overlap which are also prevalent in Maslow's hierarchy. According to Chart 7, the FoS graduates' assessment came out slightly better in all the above four aspects. For example, on job security while the best rating of response 1 and 2 constituted 76%, that of FoA was 67%. On income, the best score of FoS graduates was 65% against 59% for FoA graduates.

Chart 7 : Importance of Characteristics of Occupation and Personal Situation, by Course of Study



A further breakdown of data by sex in Table 17 reveals a slightly similar pattern for female versus male graduates of both FoS and FoA. In all four cases, female graduates gave a higher approval of the social/security variables. For example, on job security, the best rating of response 1 and 2 was 75% for female FoA graduates against 64% for male FoA graduates, while that of FoS graduates was 77% for females against 70% for males.

Table 17: Importance of Characteristics of Occupation, by Gender and Course of Study (per cent; responses 1 and 2)

| | M. BA | F. BA | M. BSc | F. BSc | Total |
|--|-------|-------|--------|--------|-------|
| Independent disposition of work | 63 | 59 | 59 | 36 | 59 |
| Chance for scientific work | 32 | 62 | 12 | 45 | 39 |
| Clear and well-ordered tasks | 72 | 70 | 61 | 64 | 68 |
| Possibilities of using acquired qualifications | 65 | 73 | 76 | 68 | 70 |
| Job security | 64 | 75 | 70 | 77 | 69 |
| Social status and respect | 67 | 72 | 69 | 77 | 69 |
| Possibility to develop and realise own ideas | 53 | 69 | 54 | 73 | 59 |
| Good working atmosphere | 65 | 71 | 71 | 73 | 68 |
| Chance to obtain further professional qualifications | 61 | 74 | 75 | 64 | 68 |
| High income | 59 | 63 | 65 | 77 | 62 |
| Chances of political influence | 27 | 18 | 14 | 40 | 23 |
| Demanding job tasks | 58 | 47 | 36 | 56 | 50 |
| Good promotion prospects | 57 | 67 | 64 | 75 | 63 |
| Lots of free time | 19 | 29 | 29 | 14 | 24 |
| Co-ordinating and management tasks | 53 | 51 | 52 | 40 | 52 |
| Possibility of team work | 58 | 71 | 70 | 55 | 64 |
| Chance to do something useful for society | 76 | 84 | 66 | 65 | 76 |
| Count (n) | 181 | 111 | 82 | 22 | 396 |

Question 42: How important are the following different characteristics of an occupation for you personally? Scale of answers from 1=very important to 5=not at all important, no answer.

Professional Satisfaction

For the purposes of this study, professional satisfaction as examined from the perspective of the characteristics in Chart 7 includes the following:

- Independent disposition of work
- Chance for scientific work
- Clear and well-ordered tasks
- Use of acquired qualifications
- Realisation of own ideas
- Chance to obtain further professional qualification.
- Demanding job tasks
- Co-ordinating and Management Tasks

The pattern of assessment according to Chart 7 was that apart from the following characteristics where the FoA graduates held a higher opinion than FoS graduates; FoS graduates recorded slightly better ratings

- Co-ordinating and Management Tasks
- Demanding job tasks
- Independent disposition of work

From the foregoing discussion, a pattern begins to emerge whereby:

(i) FoS graduates are:

- more secure in their jobs and therefore more satisfied.
- more averse to risks such as demanding job tasks and co-ordinating and management tasks.
- more oriented towards professional growth including well- ordered tasks, use of acquired qualifications and realisation of own ideas.

(ii) FoA graduates on the other hand are:

- more ready for more demanding job tasks including management,
- less secure in their jobs, and
- have slightly reduced chances of professional growth and of remaining in their discipline.

However, the fact that FoA graduates had less chances of realising their own ideas and using acquired qualifications could be viewed as a reflection of the declining opportunities for demanding jobs for FoA graduates due to growing volume of graduates. This also implies an increase in the number of graduates in positions and tasks not necessarily requiring a degree.

A gender breakdown of the data in Table 17 also reveals that the above pattern was driven by a preponderance of males among FoA graduates while female FoA graduates were closer to FoS graduates. The converse — female FoS graduates being somehow nearer male FoA graduates — is also observed in some characteristics. For example, in Table 17, FoS female graduates revealed stronger traits of ambition than their FoS male counterparts in the following areas: demanding job tasks, clear well-ordered tasks, chances of political influence, and a lot of free time.

Anticipated Career Changes

Finally, the graduates were asked to assess employment and work in light of anticipated changes within the next three years. According to Table 18, there were a number of respects in which both FoA and FoS graduates were in agreement and also those where they differed. The most frequently anticipated change was career advancement, pinpointed by 28 BSc. and 22 BA graduates. This is also closely related to the demand for either part-time study, which was reported by 30 BA graduates, or full-time study demanded by 17 FoS graduates. Thus, both FoA and FoS graduates were in agreement on assigning top priority to career advancement.

Table 18: Anticipation of Career Changes, by Course of Study (arithmetical mean)

| | BA (Arts) | BSc (Sc) | Total |
|---|-----------|----------|-------|
| No major change | 17 | 21 | 18 |
| Change my employer | 28 | 11 | 22 |
| Change my area of work assignment | 21 | 11 | 18 |
| Start a full-time course of studies | 19 | 17 | 18 |
| Study part-time | 30 | 13 | 24 |
| Increase sideline activities | 25 | 23 | 24 |
| Reduce sideline activities or limit them | 2 | 2 | 2 |
| Start my own business | 17 | 22 | 19 |
| Not to be self-employed any longer | 6 | 3 | 5 |
| Get employed | 6 | 7 | 7 |
| Discontinue employment | 1 | 1 | 1 |
| Achieve career advancement | 22 | 28 | 24 |
| Achieve a more secure occupation | 3 | 8 | 5 |
| Achieve better use of my qualifications | 9 | 12 | 10 |
| Obtain higher income | 12 | 15 | 13 |
| Start a less strenuous job | 1 | 0 | 1 |
| Obtain a better chance of pursuing continuous learning | 5 | 12 | 7 |
| Take over a job more closely linked to my study and expertise | 1 | 8 | 3 |
| Other | 1 | 1 | 1 |
| Total | 229 | 215 | 224 |
| Count (n) | (247) | (130) | (377) |

Question 44: What kind of career changes do you anticipate within the next three years? Multiple replies possible

The second major change anticipated by both FoA and FoS graduates was to increase sideline activities, which is also closely related to starting their own business activities. This reflects the job insecurity that they expressed earlier on.

The third most important anticipated change was different in each degree programme. FoA graduates looked forward to changing their current areas of work while FoS graduates were for “no change”. FoS graduates seemed to be more satisfied with their present condition while the FoA category was on the look out for better alternatives that could be due to their ambition.

According to Table 19, while male FoA graduates did not differ very much from the group, the response pattern of female FoA graduates was more or less similar to the FoS aggregate response. The third most popular step of female FoA graduates was to achieve career advancement in the same position.

Table 19: Anticipation of Career Changes by Gender and Course of Study (arithmetical mean)

| | Gender and Course of Study | | | | Total |
|---|----------------------------|-----------|----------|------------|-------|
| | Male-BA | Female-BA | Male-BSc | Female-BSc | |
| No major change | 18 | 23 | 16 | 9 | 18 |
| Change my employer | 31 | 7 | 21 | 27 | 22 |
| Change my area of work assignment | 21 | 8 | 25 | 23 | 18 |
| Start a full-time course of studies | 19 | 17 | 18 | 18 | 18 |
| Study part-time | 32 | 13 | 29 | 14 | 25 |
| Increase sideline activities | 25 | 24 | 25 | 18 | 24 |
| Reduce sideline activities or limit them | 2 | 1 | 1 | 5 | 2 |
| Start my own business | 15 | 21 | 22 | 27 | 19 |
| Not to be self-employed any longer | 0 | 3 | 19 | 5 | 5 |
| Get employed | 5 | 5 | 9 | 18 | 7 |
| Discontinue employment | 1 | 1 | 1 | 0 | 1 |
| Achieve a career advancement | 19 | 31 | 30 | 18 | 24 |
| Achieve a more secure occupation | 4 | 9 | 3 | 5 | 5 |
| Achieve better use of my qualifications | 12 | 12 | 5 | 14 | 10 |
| Obtain higher income | 10 | 16 | 17 | 9 | 13 |
| Start a less strenuous job | 1 | 0 | 0 | 0 | 1 |
| Obtain a better chance of pursuing continuous learning | 4 | 14 | 6 | 5 | 8 |
| Take over a job more closely linked to my study and expertise | 1 | 8 | 1 | 5 | 3 |
| Other | 1 | 1 | 0 | 0 | 1 |
| Total | 221 | 214 | 248 | 218 | 224 |
| Count (n) | (165) | (108) | (77) | (22) | (372) |

Question 44: What kind of career changes do you anticipate within the next three years? Multiple replies possible

This again confirms the earlier line of argument that women BA graduates were more conservative or less ambitious than their male counterparts. However, female FoS graduates displayed a different attitude altogether, compared with BA women and the general FoS attitude. The most important anticipated steps for FoS women graduates, in order of preference, were:

- Start my own business — 27.
- Change my employer — 27.
- Change my area of work assignment — 23.

FoS women graduates did not attach much importance to the continuity of their present status. They could also be said to be either ambitious or dissatisfied with their career. How could it be that the same FoS programme moulded women differently from men? The absolute number for women is perhaps too small to be the basis for such a radical conclusion. However, this finding deserves further study.

Attitude towards self-employment

The respondents were asked to give their opinion of self-employment using a scale of 1-5 where 1 was the highest approval and the results are shown in Table 20.

Table 20: Rating of Self-Employment, by Course of Study (per cent; responses 1 and 2)

| | BA (Arts) | BSc (Sc) | Total |
|--|-----------|-----------|-----------|
| People having their own business/being self-employed achieve a relatively high income | 46 | 49 | 47 |
| People having their own business/being self-employed have long working hours | 64 | 58 | 62 |
| Graduates establish their own business/are self-employed mainly because they have not found any other employment | 53 | 45 | 50 |
| Higher education does not really prepare graduates sufficiently for owning a business/being self-employed | 62 | 42 | 55 |
| Favourable long-term job prospects exist for people having their own business/being self-employed | 40 | 46 | 42 |
| Count (n) | (224) | (116) | (340) |

Question 43: How far do you agree with the following statements concerning work in one's own business/being self-employed? Scale of answers from 1=completely applicable to 5=not at all applicable.

Generally, FoS graduates gave a slightly higher approval rating for self-employment than FoA graduates. According to Table 20, the proportion that felt self-employed graduates earned higher incomes was 49% of FoS graduates against 47% for FoA graduates. Similarly, FoS graduates were less threatened by long working hours in self-employment, while their disagreement with the

statement that higher education does not prepare graduates for work was less pronounced at 42% against 62%.

However, the margin of favourable ratings was very small, which indicates that both FoA and FoS graduates did not rate self-employment highly.

Another tracer study on Makerere graduates found that the self-employed graduates were earning less than those employed in both the public and the private sector (Mayanja, 1997), Self-employed graduates in enterprises newly established by young graduates faced a number of odds which made them unable to be as lucrative as public or private enterprises.

Their problems included: shortage of cash and therefore low working capital, effect of inertia, operating below economies of scale due to size, lack of experience, inability to use full potential.

One of the critical elements in self-employment is initiative and creativity, which we earlier identified as part of the general BA and BSc. programmes. Also, self-employment requires versatility in knowledge. It is one thing to be fully equipped with these skills and another thing to venture into self-employment. Venturing into self-employment must be related to the graduates' attitude, which is less easily traceable in the graduates' training.

Self-employment is more demanding and therefore calls for hard work. At the same time, it is not likely to be lucrative in the short run due to the factors enumerated earlier. It requires a lot of patience and sacrifice because its benefits are long term and this is why most graduates opt for the line of least resistance through employment in the service of others, at least as a precursor to capital mobilisation.

In conclusion, therefore, both FoA and FoS graduates have more or less the same attitude towards self-employment and they were all averse to the risk it entails. This undermines the argument that FoA graduates are more ambitious than FoS graduates. If they were really ambitious, they would likely be better disposed towards self-employment.

Impact of FoA and FoS graduates on the economy

By way of summing up, we examine the graduates' impact on the economy. Our simplified method of measuring their impact is to relate the absorption rate of FoA and FoS graduates to the share of the different sectors in total GDP.

Table 21, which analyses the absorption of graduates in different sectors of the economy, reveals that university graduates still bypass the main productive sectors in which the majority of Ugandans are engaged. Agriculture, which constitutes 44% of monetary GDP and 60% of total GDP and includes the subsistence sector, absorbed 8% of FoS graduates and 4% of FoA graduates, making an average of 6%. The FoS graduate absorption rate of 6% in mining was the only exception that could not be matched by FoA graduates. Manufacturing, which constitutes 8% of monetary GDP, absorbed 2% of FoA and 3% of FoS graduates.

On the other hand, public service, which includes education, health and public administration and constitutes 18% of monetary GDP and 14% of total GDP, absorbed 45% of both FoA and FoS graduates. The banks and insurance companies — with an estimated 3% share of monetary GDP, absorbed a disproportionately large share of the graduates — 18% for FoA and 20% for FoS graduates.

Table 21: Absorption rate of FoA and FoS Graduates by Economic Sector - Monetary and Non-monetary GDP 1996/97

| Sector | Agric. | Manufc. | Mining | Constr. | Transp. | Trade | Banks Insur. | Service Govt., Educ. |
|-----------------------|--------|---------|--------|---------|---------|-------|--------------|----------------------|
| Share in Monetary GDP | 44 | 8 | 1 | 8 | 5 | 10 | 3 | 18 |
| Share in Total GDP | 60 | 6 | 1 | 6 | 4 | 8 | 2 | 14 |
| Absorption of FoA | 4 | 2 | - | 2 | 2 | | 18 | 45 |
| Absorption of FoS | 8 | 3 | 6 | 3 | 4 | | 20 | 45 |
| Total absorption rate | 6 | 2.5 | 3 | 2.5 | 3 | | 19 | 45 |

Source: Own calculations

No figures are available for a breakdown of GDP into the formal and informal sectors and the graduate survey did not probe this aspect. But if GDP could be disaggregated into the formal and informal sectors and the absorption rate of FoA and FoS into these sectors qualified, it would show the same pattern as that of agriculture. Hence, very few graduates are having an impact on the informal sector and the rural agricultural sectors. Regrettably, therefore, the university's contribution to agriculture, industry, and construction, which makes up 73% of total GDP, is extremely limited. FoS graduates performed slightly better but on the whole, the university is not making an impact on the majority of Ugandans in the agricultural and the informal sectors.

Although it is tempting to blame the university on the basis that it is duty bound to serve society or the market, we are more inclined to believe that the problem has more to do with the structure of the economies in Africa. There may not be too much to be done to orient the university to the subsistence and informal sectors. Our view is that it is the subsistence and informal sectors that need to be reorganised in such a way as to be impacted by the university in terms of absorption of graduates and adoption of new technology. However, it is beyond the scope of this study to delve into the economy and how it should be structured in order for the university to have a positive impact on it.

CONCLUSIONS

This study was sparked off by the general feeling that the field of humanities, which had expanded admission, had become saturated with graduates and that any further expansion would have serious consequences. The government and leading educationists had made repeated calls to discourage students from taking up humanities and instead opt for natural sciences and professional studies. Science education, however, has failed to respond promptly to the higher education liberalisation drive and it is still locked up in the funding trap. The limited supply of science graduates would even make them more competitive in the job market.

Humanities, on the other hand, which were feared to be over-saturated, have responded positively to the higher education liberalisation drive in Uganda. The number of graduates in humanities is even projected to increase further and double by 1999 from its pre-liberalisation level of 1996.

The general finding is that notwithstanding some differences here and there, FoA graduates succeeded in getting jobs as much as FoS graduates. The major differences were between graduates of various generations but not courses. Thus, FoS graduates had slightly better chances of securing jobs immediately after graduation but FoA graduates had better chances of career growth and promotion to top management.

The main conclusion of the study, therefore, was that the graduates of the FoA were as competitive in the world of work as those of FoS. We must, however, put in some measure of caution and admit that the full impact of the graduate expansion in FoA is yet to be felt as the rate of expansion of intake reached its maximum capacity by 1999. Its full effect will be felt three years later when they graduate and enter the world of work.

RECOMMENDATIONS

In light of the foregoing discussion, there are no proper grounds for fearing the ongoing expansion in the humanities. First, the country cannot go wrong with a high quota of well-educated people, capable of spreading and absorbing new knowledge. Education has not only quantifiable benefits but also externalities such as adaptability to change, family planning and other values. After all, due to globalisation, the brain drain is no longer seen in a negative light and we should think not only of the closed labour market of Uganda but the global labour market.

Secondly, the study reveals that FoA graduates, despite their number, were as competitive as FoS graduates. A study of the German economy shows that over 85% of graduates are absorbed into the tertiary or service sector.

The current curriculum response in the Faculty of Arts is a step in the right direction. Both depth i.e. 3.1.1 and breadth i.e. 3.2.2 of knowledge should continue to be pursued. There should, however, be greater flexibility and mobility from one course to another. Students should be given all kinds of options, within and outside the faculty. A combination of a broad course that offers general knowledge and competency with one professional/vocational course that develops specialist knowledge and skills under the 3.2.2 degree structure would be an ideal mix.

For example, those who want to take geography and tourism should do so, while those who want to take tourism alone should also be given that option. Those who want to combine one subject in arts (such as economics) and another subject in science (such as statistics) should also be facilitated. To this end, the ongoing transfer from the term to the semester system with course units and credit examination is also another step in the right direction. The semester system is more flexible and can accommodate all kinds of course combination including mobility from one faculty to another.

It is also recommended that more post-graduate training opportunities at both Masters and Diploma levels should be created. In the process, training at post-graduate level should be largely profession-oriented. The university should also intensify its short-term training courses. However, short-term courses will make more sense if they are accommodated in the credit accumulation system to build up to an academic award for a Masters or a Diploma. They would be pursued for their intrinsic, skill=imparting value as well as for the purpose of upgrading the academic and professional level of the recipient.

FoS should revisit its curriculum and reorganise it to handle more than one cohort of students. Instead of having one group studying during day, two groups could rotate to enable both groups to take theory as well as laboratory and field work so as to create room for more private students.

It is possible, however, that even if science became more creative, the realistic costs of running laboratory/practical courses might be prohibitive. Considering the supply and demand of FoS graduates, characterised by the slow adjustment of science education to the privatisation drive and the lack of any clear demand for science graduates in the world of work, more creativity is needed along with greater local orientation in designing the science curriculum, as well as affirmative action.

We believe that the lack of any clear advantage for scientists in the economy is not an indication of the deficiency of the science course but rather a symptom of a fundamental problem in the economy. There is, therefore, no question of abandoning the emphasis on investing in science education. The way forward is to build up a cadre of scientists in various areas of specialisation. It is the economy that must be re-examined. While the structural adjustment programme has achieved macro-economic stabilisation, its impact on the production sector is highly questionable. In the post-structural adjustment period, there may be need for another indigenous effort at structural reform to create a more production-oriented economy that will absorb more scientists.

the government must commit itself to building on the demand side mechanisms and incentives to utilise effectively the science potential of Makerere University. The market must be induced to send positive signals to students that science education pays off later so that students can be enticed to sponsor themselves and meet the high cost of science education.

The education system, or for that matter, science education and the economy, can be compared to the chicken and the egg. To stir the economy into vibrancy, one can either intervene through human resource development or through the economy itself.

While there is wide consensus on the need for affirmative action in science, many people, especially the politicians who make the critical decisions, do not seem to know what type of affirmative action is feasible. Affirmative action in science education must come through the budgetary process. The most rational approach is to abandon the rigid line budget and adopt the unit cost-based budget.

The unit cost budget would make it possible to target science education. A realistic unit cost for FoS would take into account the chemicals, equipment and industrial training requirements and staff incentives would be worked out so that the government pays a generous package for sciences and also increases the number of students it sponsors at all levels. This would include sponsorship for post-graduate levels where many programmes are running below capacity due to lack of students who can sponsor themselves.

Affirmative action in the manufacturing sector and in science and technology education is the way forward for enabling FoS graduates to succeed in the world of work.

On this basis, therefore, intervention is advocated in science education as a starting point for the economy to leapfrog its present under-development trap. Finally, in order to improve on the fit between the knowledge and skills of graduates and the demands of the labour market, there is need for continuous research into the prevailing socio-economic conditions through surveys of graduates and their employers. It may well be that the usefulness of periodic manpower surveys has been largely undermined by the privatisation drive and the best barometer for the labour market and the education system's output of graduates are the graduate/employer surveys. Universities in Africa must regularly conduct different graduate surveys to monitor the requirements of the labour market.

BIBLIOGRAPHY

- Keysall P.K, Poole A., and Kuhu A. (1970) Six years After Sheffield, UK Higher Education, Research Unit, Sheffield University UK.
- Kwesiga J.C.M (1992) Access of Women to Higher Education, An Analysis of Inequalities, Barriers and Determinants, PhD. D Thesis University of London.
- Makerere University (1995/96), Recurrent Budget, Makerere University.
- Makerere University (1996), Strategic Plan 1996/97-1998/99. Kampala.
- Makerere University (1997) Minutes of the special Council Meeting held on 11th June 1997. Kampala.
- Makerere University Faculty of Arts (1997), Report of the Faculty workshop on Strategic Management Planning. Kampala Uganda.
- Makerere University (1997) Minutes of the 71st Meeting of the finance committee held on 27/06/97. Kampala.
- Makerere University Faculty of Arts (1997), Revised Day and Evening programmes for the BA (Arts) degree, Feb 1997. Kampala.
- Makerere University (1997), Minutes of the 77th University Council Meeting. Kampala
- Makerere University (1997), Review of the Implementation of Makerere University Strategic Plan 1996/97-1998/99. Kampala
- Mayanja, M. (1992), Makererian in Rural Development, Dissertation for Master's Degree in Economic Policy & Planning, Makerere University. Kampala
- Mayanja, M.K. (1997), The social background of Makerere University students and the potential for cost sharing', Journal of Higher Education.
- Ministry of Public Service, (1994), Outline Plan for the Reconstruction of Makerere University. Kampala
- Opio F. and Obwoma M. (1996) Employment and Poverty Reduction in Uganda. EPRC Seminar Workshops and Conference Proceedings. Kampala.
- Passi F.O., (1994), Implementing Change to improve the Financial Management of Makerere University, Uganda No.82, IIEP/UNESCO, Paris
- Plicht, H., Schdber, K. and Schveyer, F.(1994) Zur Ausbildungsadäquanz der Beschäftigung von Hochschulabsolventinnen und -absolventen' Mitteilungen aus der Arbeitsmarkt-und berufsforschung, 27 pp 197-198
- Schultz, T. (1988), 'Education investment and returns' in Chenery H and Srinivasan TN (eds) "Handbook of Development Economics, North Holla.
- Selvin, H.C. and Hagstrom, W.O.: Determinants of support for civil liberties; British Journal of Sociology. Vol II, 1960
- Tilq, J.G.B. (1993), "Financing higher education in India: principles, practice and policy issues", in Higher Education, 26:43-67.
- World Bank, (1993), Strengthening Uganda's Policy Environment for Investing in University Development.
- World Bank, (1993), Higher Education: The Lessons of Experience.