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THE OCCUPATIONAL PRESTIGE OF ENGINEERING: PERCEPTIONS OF STUDENT ENGINEERS IN NIGERIA

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ABSTRACT

Within the framework of occupational prestige assessment, a survey was carried out amongst future engineers in Nigeria to determine their perception of engineering profession relative to a range of occupations. A questionnaire was administered to 100 undergraduate engineering students. Eight occupations were rated on six dimensions, i.e. levels of intelligence required, income, social status, responsibility, relevance or usefulness to the society, and the proportion of women. The results indicate that future engineers in Nigeria believe their profession possesses relatively high social status, together with Bank Manager and Medical Doctor, and is differentiated from the proximate professions of Engineering Technologist and Motor Mechanic. These results lead to the conclusion that engineering in Nigeria is held in high esteem – it has a clear identity and professional status, and, with the increasing proportion of women, it is likely to be regarded as an equally desirable future occupation for both genders.

1. INTRODUCTION

It is common knowledge that the pride of any profession is that it occupies a higher social status relative to other professions. According to Daniel(1), social position in the society is determined to a great extent by occupation (or one's parents' occupations) rather than inherited status. Some high profile professions, including law, medicine and accountancy, are associated with power, prestige, privilege and high material reward. A person's character, level of intelligence, or education, ability and personal acceptability are evidently assumed from an occupational label(1,5). Therefore, a profession's social status is often of interest to its practitioners and engineering is no exception.

A number of studies have examined the perceptions of some professions i.e. what is known about the profession and the range and extent of the services it provides, by their current prospective practitioners(4), allied professionals(2) and general public(3) and have elicited information from diverse groups. The general consensus is that the public and even some professionals are either unable to differentiate allied occupations or have wrong

perception of them. Mechanical engineering, for example, is often confused with vehicle repair works (that is regarded as purely automobile engineering) in Nigeria.

It is a characteristic of a profession to know and understand its strength in terms of employment opportunities and marketability of its services. Consideration of these is necessary not only in terms of service uptake, but also in terms of its desirability as a prospective occupation. Some professions have been evaluated relative to others(5). A few other studies have evaluated practitioners' perceptions of their profession, particularly related to other occupations(4). None is known to the authors to have studied the standing of engineering profession and how engineers perceived their profession relative to other occupations in the society.

This present study examined the perceived prestige of engineering relative to other occupations – specifically medicine and surgery, banking and journalism amongst university engineering students in Nigeria.

2. RESEARCH METHODOLOGY

The study was designed within the tradition of occupational prestige assessment. It consisted of a questionnaire in which occupations/professions were assessed and compared on dimensions. The dimensions employed consisted of the key variable level of social standing, in addition to level of intelligence/education, level of responsibility, level of income, and relevance to the society. A sixth dimension, proportion of women in the profession, was also included. While not strictly a measure of occupational standing, its inclusion reflected observations by a number of authors regarding gender differences associated with professions and the perceived standing of those professions(2). The eight professionals used were school teacher, medical doctor, motor mechanic, bank manager, engineer, technologist, journalist and office cleaner.

The main research questions addressed were:

- How is engineering perceived by future engineers?
- What is its position relative to other professions?
- Is it a material-rewarding profession?

2.1 Subjects:

The study used a convenience sample of 100 undergraduate engineering students from one university in Lagos, Nigeria. Students were from years three to five of their degree courses. It is believed that students in other universities, being from the same society, would have the same understanding and perception as the sample.

2.2 Questionnaire, procedure and instructions:

The questionnaire involved the rating of the eight professionals on each of the six dimensions described above. The ratings were carried out using a six point, bi-polar interval scale of tick-boxes with "low" at one extreme and "high" at the other. Each professional was rated separately on a scale of low [1] to high [6] on level of responsibility, level of intelligence, etc. The authors administered the questionnaires to volunteer student groups with instructions pre-determined in order to ensure consistency. In addition, the first page

of the questionnaire explained the purpose of the project, namely, to determine peoples' perceptions of various occupations, illustrated the use of the rating scale, and assured anonymity. The questionnaires were administered to each student cohort following a group lecture for each respective year-group.

2.3 Analyses

The Microsoft Excel package was used in the analyses. The mean rating for each of the professionals was obtained for the six dimensions from the scale ratings given by the respondents. The combined dimensions rating for each professional was also calculated.

Please see charts under Appendix A, page 373

3. RESULTS

The survey response rate was 98% as very few students in each year declined to participate. The results obtained from the calculation of the mean rating of each of the professionals for each of the six dimensions are presented in Figure 1A – F. The graphical presentation effectively differentiated the professions on each dimension.

3.1 Level of Intelligence

The perceived level of intelligence for the different professions (Figure 1A) placed orthodox Medical Doctor at the highest level, and Office Cleaner at the lowest. Engineer was ranked second, with a rating of 5.6. Engineering students differentiated favourably between their own profession and those of the Technologist and Motor Mechanic (ranked sixth and seventh respectively). They placed themselves between medical doctors and bank managers.

3.2 Level of Income

On remuneration or material reward, engineering was placed third (Figure 1B) with a mean rating of 4.8. Consequently, engineering students expect engineers to earn less than bank managers and medical doctors. Technologist, an allied professional to the engineer, was ranked at the same level with Secondary School Teacher. The least paid professional was expected to be the Office Cleaner.

3.3 Level of Social Status

In social standing, engineering maintained its third position (Figure 1C) as in level of income dimension with a mean rating of 5.0. As expected, Bank Manager and Medical Doctor earning more than others were also ranked above them in social standing. Motor Mechanic, however, displaced School Teacher and Technologist to the sixth and seventh positions respectively. Office Cleaner remained lowest in ranking.

3.4 Level of Responsibility

Figure 1D puts the engineer marginally below Medical Doctor in level of responsibility but above the Bank Manager. Engineering students clearly ranked themselves, with a mean rating of 5.4, well above Technologist and Motor Mechanic. Office Cleaners, though still ranked last, was rated much higher than the levels considered above. Hence, expected to be averagely responsible.

3.5 Level of Relevance

This connotes level of usefulness of a profession to the society. The mean ratings at this level were generally very high for all occupations with the Office Cleaner still having the lowest rating of 3.7 (Figure 1E). But, it appears a little bit absurd to find engineering students putting

teaching on a par with their profession in usefulness to the society, with a mean rating of 5.4, and above a Bank Manager. Technologist was placed almost at the same level with the Motor Mechanic and marginally above the usually lowest-placed Office Cleaner.

3.6 Proportion of Women

For the first time, cleaning profession displaced six others in the proportion of women. Unlike in the past when engineering was regarded as exclusively male affair, the results showed an increase in the proportion of women in engineering profession with a mean rating of 1.9. This is, however, above the Motor Mechanic that is surprisingly not scoring zero. Medical Doctor and Bank Manager occupied the intermediate position, that is, neither male nor female dominated.

3.7 Combined Dimensions – rating

Overall, engineering was ranked third with a mean rating of 4.7, marginally behind the Bank Manager and Medical Doctor with 4.8 and 5.3 respectively. Technologist and Motor Mechanic, were ranked sixth and seventh respectively with scores of 3.6 and 3.1.

4. DISCUSSION

This present study aimed to determine the occupational prestige standing of engineering as perceived by Nigerian engineering students in relation to other professions. The results indicated that engineering students in Nigeria rated their profession highly.

The high response rate of 98% which is attributable to the direct method of questionnaire distribution and retrieval, suggests the results can be considered good representative of the population sampled.

Among the Nigerian engineering students, their profession was seen as having high standing for all the dimensions except proportion of women. Within the technological field, it was positioned well above both technologist and motor mechanic and has high overall prestige standing among the 'big three' of medical doctor, bank manager and engineer.

In Nigeria, the major factor that influenced perceived occupational status was level of income, although levels of education and relevance also appeared to be important factors. This probably influenced the perpetual low positions of motor mechanic and office cleaner. Besides, the cleaner's position may be attributed to female – dominance. In(2), female – dominated occupations tend to be perceived as having lower levels of power and prestige.

With regard to the proportion of women in the profession, Nigerian engineering students saw engineering almost becoming equally desirable to both genders. The previous 'male dominance' status of yesteryears is being neutralised by the increasing proportion of women seeking admission into the field especially in the areas of Chemical and Electrical/Electronics Engineering.

Some year effects emerged in the analyses, and mainly indicated that with progress during the course, students' perceptions of other occupations modified considerably. The changes in their perceptions of engineering related mainly to level of income where bankers and medical doctors were believed to be earning much higher than engineers. Nevertheless, 93% still regarded engineering as a rewarding career.

The results of this present survey reveal the high regard in which future engineers in Nigeria hold their profession – a regard which it is plausible to assume is a reflection of its high perceived standing amongst qualified engineers.

5. CONCLUSION

The results of this study indicate that, in spite of the increasing number of engineers changing to banking due to high remuneration, 'the student engineers' perceptions of their profession is still high – still is high. This may be as a result of experience and contact with various professionals including practising engineers and members of other occupations during the Student Industrial Work Experience Scheme (SIWES). The high regard in which these future engineers hold their profession can be considered very healthy for the profession's future in Nigeria.

Unlike in the past when the profession was regarded as exclusively male affair with a few classes having one or two strange female students, the results show an increase in the proportion of women in engineering especially in Chemical and Electrical/Electronics Engineering fields), with a mean rating of 2 out of 6. This is an indication that engineering is likely to be regarded as an equally desirable future occupation for both genders in the country.

In terms of further research, it would be informative to determine the standing of one branch of engineering in comparison with other branches; and to establish how widely engineering is differentiated from proximate occupations in terms of the services it provides. In this context, a study is in progress among university engineering undergraduates and general public in Nigeria.

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