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## Academic staff development strategies in engineering fields of study: case study of Zimbabwe

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Higher education is the basic instrument of economic growth and technological advancement in any society. The economic meltdown in Zimbabwe which climaxed 2008 with an inflation level of 231million % exacerbated the brain drain. After the economic meltdown, Zimbabwe is in the process of rebuilding the quality of staff and the staffing levels in its higher education institutions. The challenge has been the decision on the mode of study: whether to go via taught masters or masters by research; where to allow the faculty members to study: in the region, or beyond; on a fulltime or on a part-time basis or on a split-site basis. These challenges have been due to the need to have a quick but quality programme of staff development, while maximising on the resources available for staff development. A survey was undertaken of the engineering related departments in Zimbabwe universities focusing on the existing staffing levels, their qualifications, current numbers undergoing study and their levels. The challenges faced by each institution from the administrative side and from the staff side are summarised. Recommendations on staff development strategies are given in conclusion.

### Introduction

From an economic condition that led to unsustainable brain drain there was need to beef up the staffing situation in Zimbabwe universities. The strategy taken in the early 1990s was to send as many staff development fellows abroad as possible, expecting them to return after their studies to fulfil pre-agreed contractual duties. The down turn of the economy in early 2000 led to many defaulting or absconding by not returning to the country. There is thus a need to take a strategic approach in sending candidates for staff development to optimize on the number of trained staff in universities. The paper highlight the current situation in Zimbabwe's Engineering and Science related departments.

Zimbabwe currently has nine (9) state universities of which all have Engineering and or Science related departments. These universities include University of Zimbabwe (UZ), Midland State University (MSU), Harare Institute of Technology (HIT), Chinhoyi University of Technology (CUT), National University of Science and Technology (NUST), Bindura University of Science Education (BUSE), Zimbabwe Open University (ZOU) and Lupane State University (LSU) (SARUA, 2013).

### Related Literature

The related literature is divided into supply chain for academics, staff development and retention related to staff development.

### Supply Chain for academics

There is need to analyse the supply chain of academics. Academics start at the undergraduate level and proceed to postgraduate studies thereafter. Postgraduate programs involve the Masters studies which can be by taught courses with a mini-dissertation, or a Master of Philosophy through research. These programmes can be in the mode of fulltime, Part-time or Block Release. Following this level is the PhD level that can take two modes generally: PhD with a taught component and PhD by research. This level can be undertaken either as part-time or full time. A summary of the academic supply chain for Zimbabwe is shown in Figure 1 as adopted from Shafiq (2012).

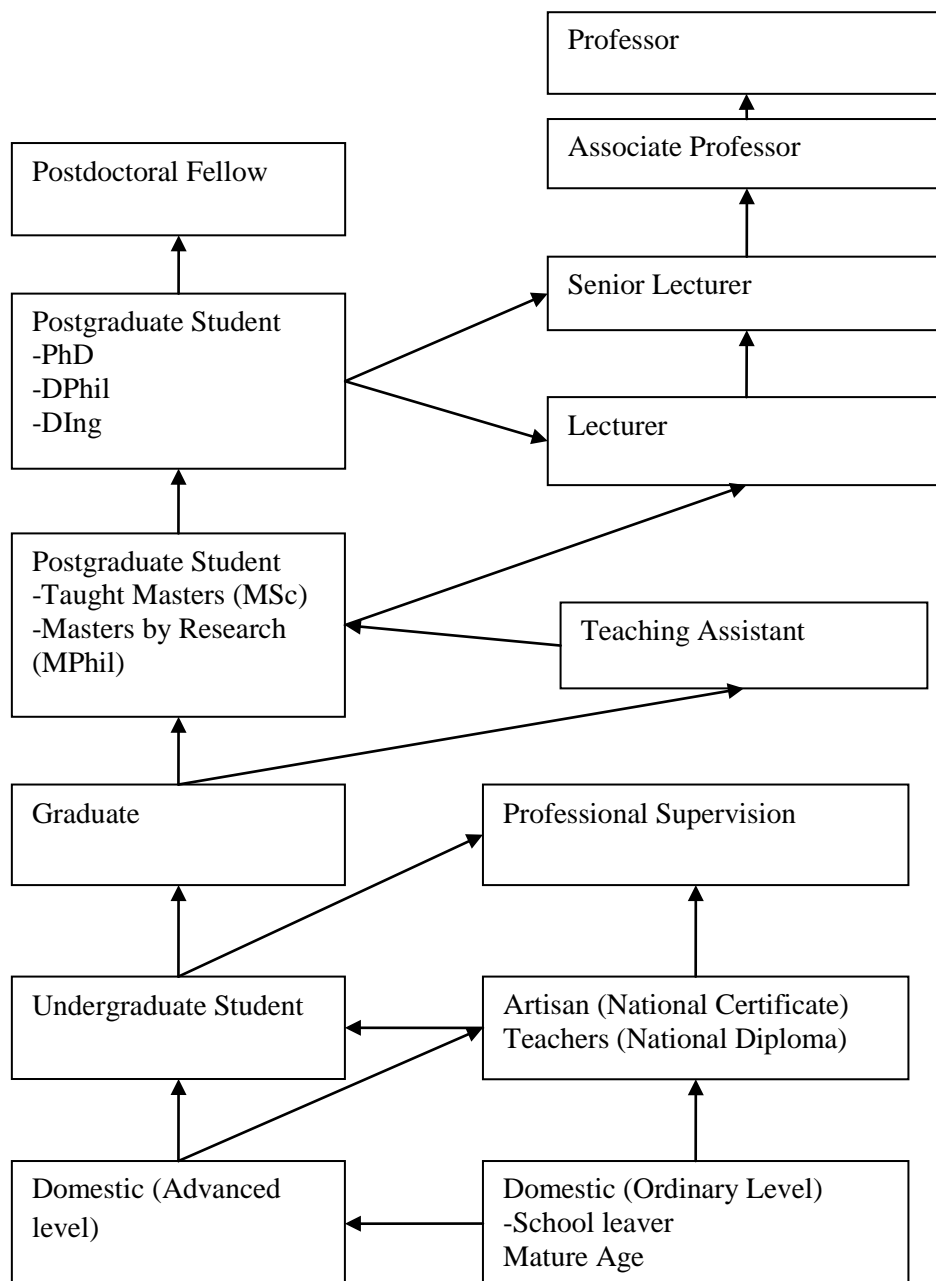


Figure 1: Supply Chain for Academics in Zimbabwe (source authors)

## Staff Development

Higher education institutions, such as universities, colleges and polytechnics, are labour intensive organisations; they depend on people for the delivery of their services. The quality of the staff in institutions of tertiary education is thus central to their effectiveness, in the same way that it is to all people-centred organisations. In considering any strategy for developing human resources an institution must consider all its staff; administrative and support personnel can play crucial roles in helping students to learn, and in enabling and facilitating an environment that favours learning (Fielden, 1998). Trinity Saint David University recognises that an effective process of staff development is critical in ensuring that the University successfully meets the goals and objectives of its strategic plan, and that individuals are empowered to develop their skills in relation to the requirements of their roles (Trinity Saint David 2011). In Zimbabwe academic scenario staff development has concentrated on training at Masters and PhD level to answer to the quality of teaching staff after brain drain.

## Retention

Retention is referred to as an organization’s effort to keep in employment those employees of whom the organization has a positive evaluation and who would normally only leave the organisation through voluntary resignation (Mengel 2001). Cascio (2003) describes retention as initiatives taken by management to keep employees from leaving the organization, such as rewarding employees for performing their jobs effectively; ensuring working relations between employees and managers; and maintaining a safe, healthy work environment.

Dockel (2003) identified compensation, job characteristics, training and development opportunities, supervisor support, career opportunities and work-life policies as critical factors for retention. Compensation can be divided into monetary rewards which can be basic salary, incentives and contact leave allowances. Non-monetary rewards include flexible working hours, medical aid and pension. Job characteristics include skill variety and job autonomy. This is a factor most desired by academics. The retention factors were analysed and ranked in terms of the most considered factor as summarized in Table 1.

Table 1: Retention Factors and how they are ranked (Dockel, 2003)

Retention Factors	Frequency of factors in High Technology literature	Rank Order of frequency
Training and development opportunities	32	1
Supervisor Behaviour support or feedback	25	2
Career opportunities	23	3
Skill variety	20	4
Quality of life/ Work/ Life policies	19	5
Job autonomy	17	6
Job Challenge	15	7
Base Salary	14	8
Total (Including other factors not listed)	339	Range 1 to 9

Ng’ethe et al, (2012) developed a conceptual model for retention summarized in Figure 2. It is realized that most of the institutional staff development policies have not looked at the retention issue, but used bonding as the route to retain staff.

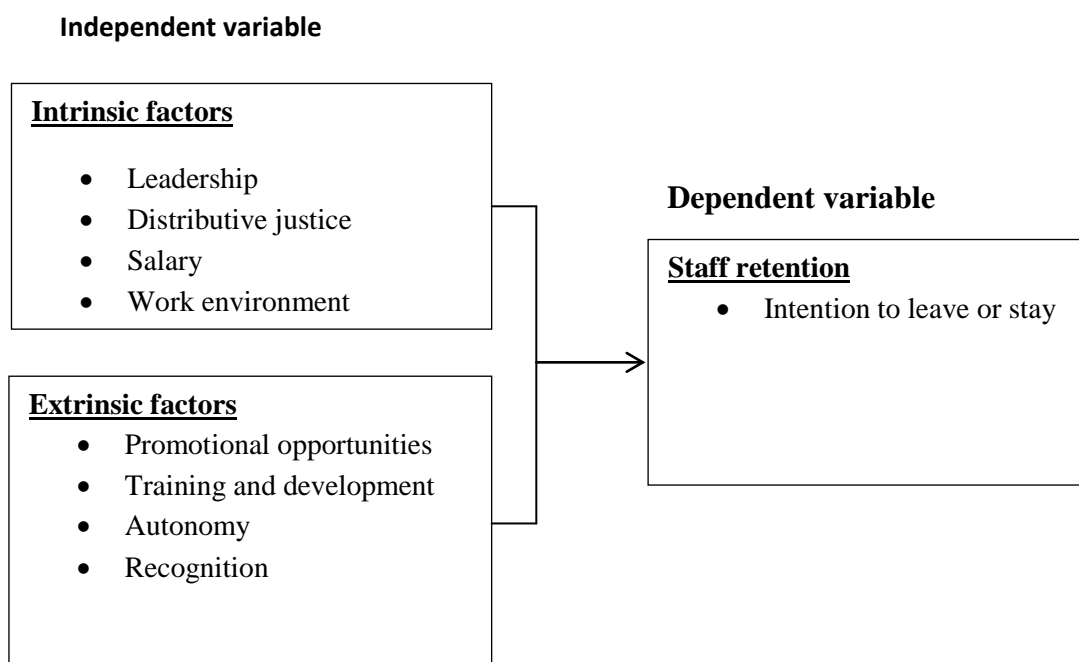


Figure 2: Conceptual Framework (Ng'ethe et al, 2012)

The elements that affect retention factors are age, trust, gender, job levels, scarce skill, ageing workforces, economic conditions, recruitment, career mobility and career success (Van Dyk, 2011). Govaerts et al (2011), found a positive relationship between age and retention. Younger employees are significantly more likely to leave their current organization than older employees. This is the situation in Zimbabwe where the large numbers of the staff are young.

Naris and Ukpere (2010) showed that signing of staff development agreement forms did not motivate staying. Others work for agreed periods and others pay back the money owed to universities. Private companies were willing to buy them out. Some said they were not given opportunities to apply skills and knowledge. Staff members were sent on developmental programmes without a plan in place as to what the person is expected to do to boost a university's academic profile. Tettey (2006; 2009) highlighted how students and faculty members sent abroad do not return due to pull and push factors such as: opportunity to apply acquired knowledge and better service conditions.

## Methodology

A questionnaire survey was conducted on the current situation and challenges facing staff development efforts in Zimbabwe universities. Summary of the questions used are:

- i. Number of academic Staff in the Department (please tick)
- ii. Number of non-academic Staff numbers in the Department (please tick)
- iii. Current highest qualification as of 31st February 2013 by their numbers (please state number in each level).
- iv. Number of staff studying and their mode of study (Please state number in each category)
- v. Where are they studying? (specify the number and their location)
- vi. Who is currently a sponsoring staff development fellow for fees? (specify number)
- vii. Who is currently a sponsoring staff development fellow for upkeep? (specify number)
- viii. How are the staff development staff bonded ?

- ix. What is the retention rate in the past five years?
- x. What could be the cause of the trend of the retention rate you stated in the previous question?
- xi. Any other issues of staff development that you would recommend?

Purposive sampling was used where engineering and science departments in Zimbabwean universities were targeted. The questionnaires were distributed using emails and colleagues in each institution made a follow-up and collected the responses.

## Results

The results revealed the numbers of staff in each target department and their qualification. The number of staff members that were studying and their level of study were assessed. The location and the mode of study were also assessed.

### Highest qualifications for departments

As shown in Figure 3, 15% of the staff members hold a PhD degree while 7% and 44% are holders of MPhil and taught Master's respectively. 34% of the members of staff are holders of a Bachelor's degree. Most of the members of staff who are either studying towards a PhD or Master's degree qualification are 38% and 55% respectively as shown in Figure 4.

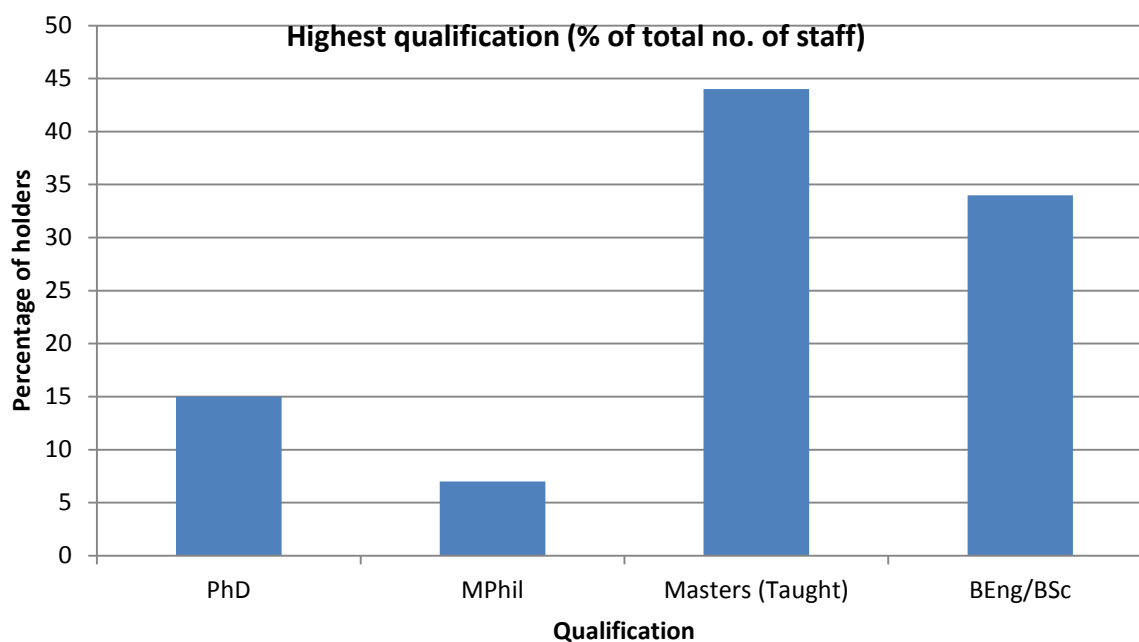


Figure 3: Percentage of highest qualification of university staff

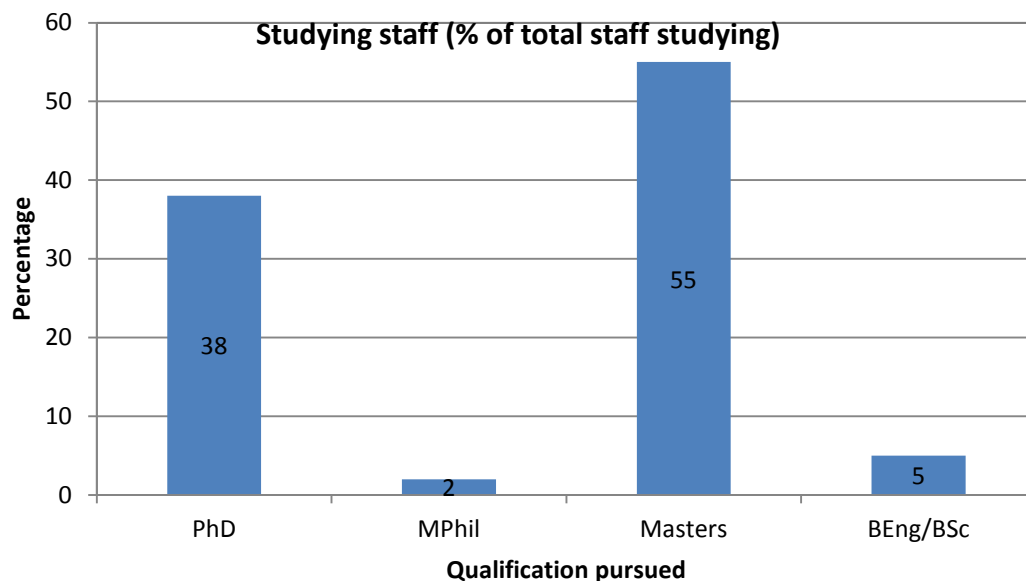


Figure 4: Percentage of studying staff against pursued qualification

### Countries or regions in which members of staff are studying

Accounting for 44% of PhD students, South Africa leads the way as the “preferred” country for members of staff to pursue their PhDs as shown in Figure 5. This is due to the fact that South Africa is more technologically advanced in relevant infrastructure (universities and industry) and human resources more than any other African country, a basic requirement for PhD studies. Furthermore, South Africa is geographically close to Zimbabwe and this offers an advantage for members who have to come back to Zimbabwe to either teach at their respective universities or to visit their families. 48% of members studying towards PhDs are doing so in countries other than the ones listed in the survey. These “other” countries are mainly Zimbabwe and Kenya. Europe and America account for 4% each.

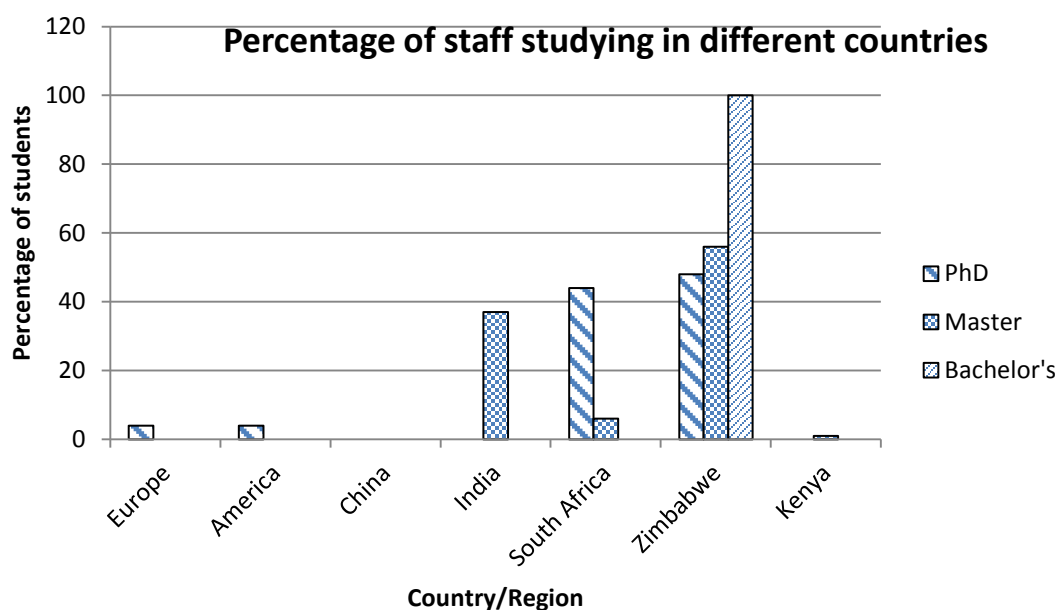


Figure 5: Percentage of Staff studying against countries of study

## Sponsorship

From the survey, the government of Zimbabwe is presently sponsoring Master’s, MPhil or PhD students through local universities. As for tuition fees sponsorship, 33% of the PhD students are being sponsored by the university that employs them while another 33% are sponsored by the host university (where they are studying for a PhD) as shown in Figure 6. About 25% of the PhD students pay their own fees. In 50% of the instances, local universities sponsor fees for their staff studying towards a master’s degree whilst 36% of such members are self-sponsored. Generally members of staff studying at the university that employs them are exempted from paying academic fees.

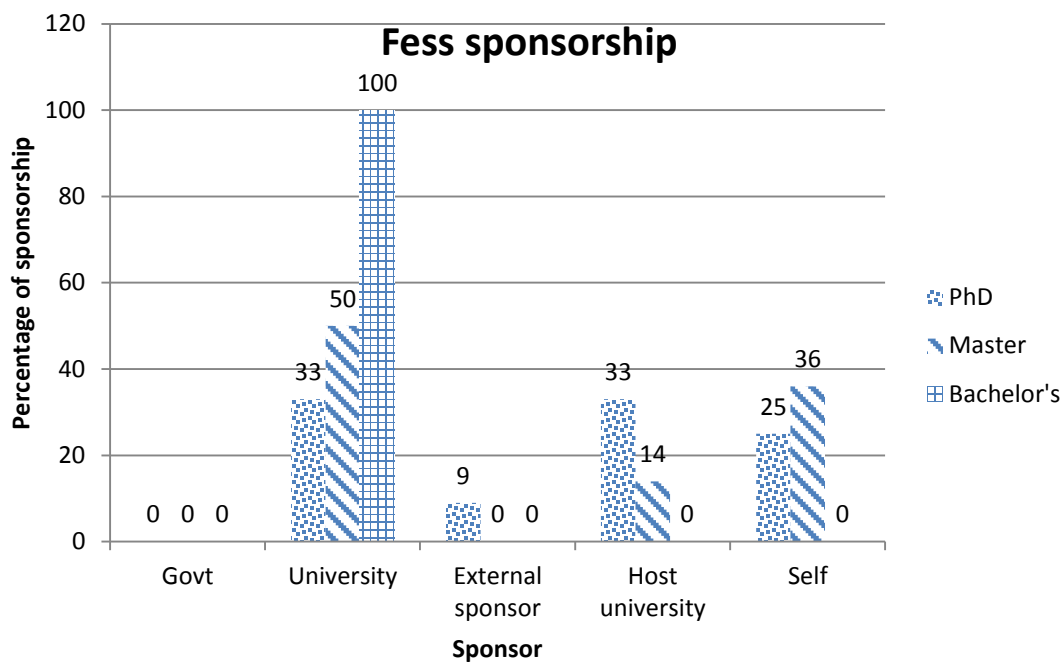


Figure 6: Tuition fees Sponsorship

For upkeep sponsorship (living expenses), a massive 75% of PhD students sponsor themselves whilst 17% are sponsored by the university that employs them as shown in Figure 7. Host universities account for the sponsorship of the other 8% of PhD students. Presently the upkeep of staff members studying towards a master’s degree is largely either self-sponsored (43%) or sponsored by the universities (36%). Universities generally do not sponsor master’s students for upkeep unless such members have been seconded by the university to another country to study. The authors feel the low percentage of staff sponsored by universities has led to staff development fellows accepting bursaries and scholarships from host universities thus breaking the obligation of the fellow returning to local university. In cases of universities that have opted to send fellows to places like India the motivation has been bilateral agreement between Zimbabwean and Indian government which would pay full sponsorship including upkeep.

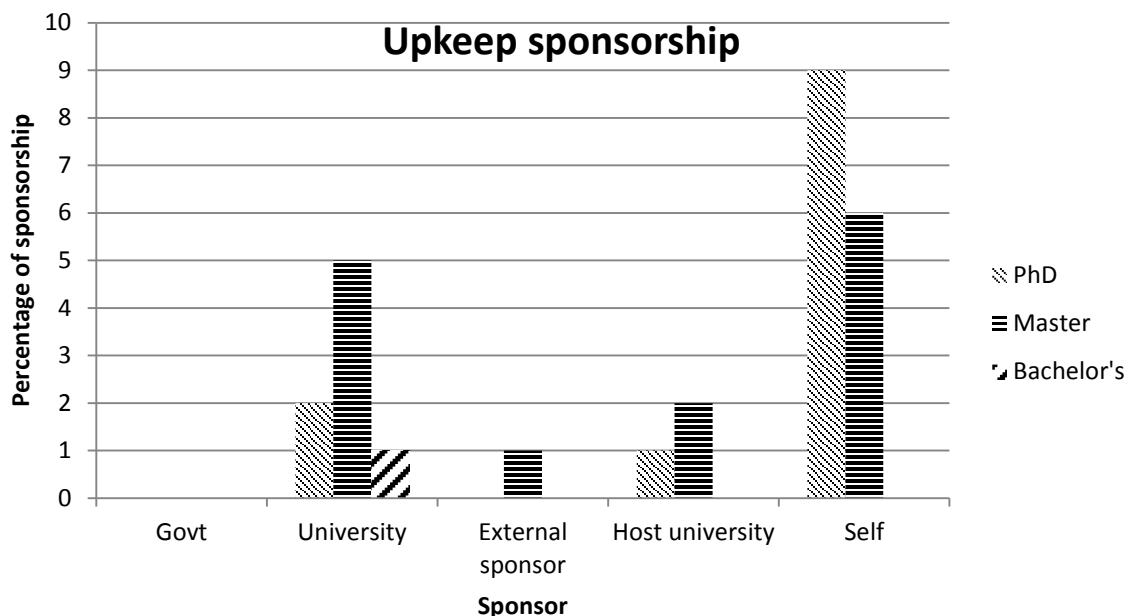


Figure 7: Upkeep sponsorship

### Reasons for trend in retention rate

The retention rates for PhD, MPhil and taught Masters hovers around 60% as shown in Figure 8. The retention rate obviously shows that some members of staff are lost from their institutions or country regularly for various reasons. Chief among these reasons is that members of the academic staff are not satisfied with uncompetitive remuneration and working conditions in general, especially in comparison with regional and international averages. Where attractive packages are offered elsewhere, members of staff tend to seek such greener pastures. Some of the unfavourable working conditions include lack of staff development sponsorship as seen in the analysis of tuition fees and upkeep sponsorship (Figure 6 and Figure 7). Circumstances in the socio-economic climate also determine movement of staff, either for staff development or for greener pastures.

In the past five years it can be argued that universities have performed above average in retaining staff. This is attributed to the generally improving salaries since 2010. On the other hand, there is also a feeling that there are no jobs elsewhere and therefore certain members of staff are stuck with the academic institutions that employ them. This argument suggests that if opportunities would crop up within the country, region and beyond, members of staff would not hesitate to leave. For unknown reasons, some members are just reluctant to apply for jobs elsewhere, even when opportunities arise. Family commitments also play a major role in determining whether or not members of staff will leave their positions. The university staff whose family members are advancing educationally (be it at secondary or tertiary levels) in Zimbabwe are likely to be held back from relocating to regions that offer more favourable working conditions. This analysis shows that retention of members is not based on the choices or motivation of members to stay, but is rather based on circumstances.



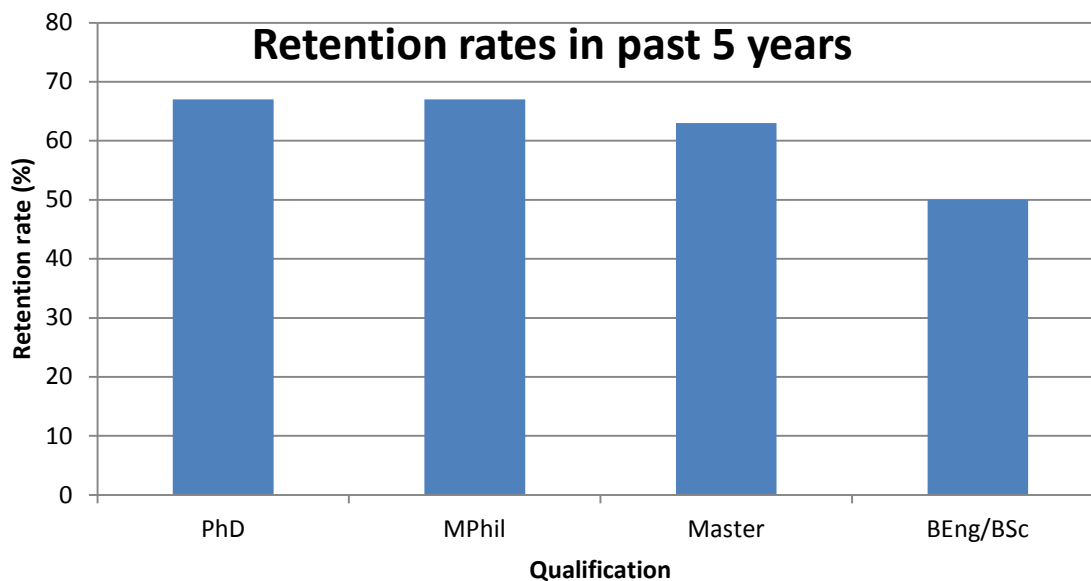


Figure 8 Percentage of retention rate against qualification for the past 5 years

### Recommendations by Respondents

The following were recommendations from the respondents:

- i. Government should support further studies of the staff in engineering, science and technology related disciplines in order to improve their quality.
- ii. Universities should also encourage and support new members of staff to do higher degrees and offer them study leave.
- iii. Upcoming universities require a rigorous staff development and staff exchange programme in collaboration with established universities in order to improve their academic profile.
- iv. Adequate research grants, requisite research facilities and travelling grants to industry and universities within and outside the region not only have the potential to improve research output, but also to keep staff motivated and help those members of staff carrying out research for higher degrees.
- v. Most of the staff development fellows undertake projects that are relevant to the host university due to the technology and equipment available there. This makes it very difficult for continuity by staff developed fellows to continue their research at local universities and later be able to have a track record through which they can attract big grants for collaborative research.

### Recommendations by Authors

The following are recommendation by authors:

- i. Collaborative research that would lead to staff development in the split site mode thus reducing the likelihood of brain drain
- ii. Sponsorship not only to the staff development fellow but to equipment at local universities as this would foster continuity in research on both universities and possible funding from international organisations that are seeking South- South collaboration as there will be signs of activity on both universities.

## Conclusion

The paper set to highlight the need to consider a staff development strategic plan by first reviewing the academic supply chain and the factors that affect retention. A survey to establish the situation on the ground was undertaken and results tabulated. Recommendations on the methods to retain staff development fellows upon returning to local country were given which looked at creating a conducive environment and conditions of service instead of using contractual obligation which has always been defaulted. The long term strategy would be south-south collaboration which would involve investing in equipment in local universities that match counterparts in Southern Africa region.

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