Effect of Brain Drain driving factors on University Competitiveness among Universities in Burundi

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Abstract: Cette étude a été menée pour examiner l'effet des facteurs de fuite des cerveaux sur la compétitivité des universités au Burundi. Les résultats ont révélé qu'il y avait une relation positive directe entre les facteurs de fuite des cerveaux et la compétitivité des universités. Il a également été constaté que la rémunération et les opportunités de croissance avaient un effet positif significatif sur la compétitivité des universités parmi les universités Burundaises. En conclusion, les opportunités de croissance et la rémunération sont impératives pour la compétitivité des universités. Le chercheur recommande que les dirigeants des universités favorisent le contrôle de la faible compétitivité des universités grâce à des stratégies qui augmentent les opportunités de croissance ainsi que la rémunération.

This study was conducted to examine the effect of brain drain driving factors on the competitiveness of Universities in Burundi. The findings revealed that revealed that there was a direct positive relationship between brain drain driving factors and the competitiveness of universities. It was also found that remuneration and growth opportunities had a positive significant effect on university competitiveness amongst universities in Burundi. In conclusion, remuneration and growth opportunities are imperative for the competitiveness of universities. The researcher recommends that university leadership should promote control of poor university competitiveness through strategies that increase growth opportunities as well as remuneration.

Keywords: Brain drain, competitiveness, and University competitiveness

INTRODUCTION

Globally, Universities thrive on their name/brand. The name of a University is the key driver of revenue and performance. Universities with global repute are better placed in terms of market visibility and this eases their operations (Özden, 2016). In many countries where highly-competitive Universities are located, they are given an opportunity by their governments to contribute to the framing of the legal and institutional policies of the education sector, they enjoy economies of scale due to high enrolment figures, they are the first stop points for highly skilled and experienced staff and more importantly, they enjoy market superiority over their peers who operate in the same environment (Bollard et al., 2014). Highly competitive Universities easily access funds and grants for development programs while at the same time enjoying commercial autonomy as most of them can easily charge high tuition or revise their tuition without having to do too much explanation. In East Africa, Universities of this nature are very few because and these are mostly in Uganda and Kenya. Maker ere University and the University of Nairobi have gained reputation all over Africa and continue to thrive off this superiority as they rank highly among Universities all over Africa. This makes the markets under which they operate and the East African region at large more concentrated although the level of competition may not match that of concentration (Chand, 2015).

As a result, the general labour force in such a market will be on high demand and of these, the most experienced and highly qualified will be seeking more decent and reasonable working conditions, reasonable pay, an assurance of job security, a conducive working environment like library and research resources coupled with good University infrastructure like internet equipment and computer laboratories (Docquier, 2012). Unfortunately, due to the low level of competitiveness, only a handful of universities will meet these demands. Many of these workers will look out for greener pastures across the country and the ones that get offers will definitely go. This is a continuous cycle of brain drain that can only be dealt with by working towards the competitiveness of Universities within a

Country. According to Wusu (2006), about 30% of Africa's University-trained professionals and up to 50,000 Africans with PhDs live and work outside the continent and the problem is particularly acute in sub-Saharan Africa.

In Burundi, Universities continue to suffer with staffing challenges. Skilled labour is scarce due to common practice of many qualified workers leaving the country to seek greener pastures elsewhere (Nimubona, 2001; Uwimana, 2017). These ones often cite several barriers when working in Burundi including low pay, lack of career progression support from their universities, lack of liberty to consult for various entities that would be a supplementary source of income, political instability that worsens the already poor working conditions as well as political intervention in the course of them executing their duties (Hatungimana, 2007; Capuano & Marfook, 2013; World Economic Forum, 2015). The available workers demand high pay that is not affordable by most of the Universities so they all end up in one of two universities that have high enrolment volumes and reasonable revenue to accommodate them. With Kihembo (2017), the result has been a semi-concentrated university education sector but with a very low level of competitiveness which, in the end, affects the growth of the education sector and also pushes some financially stable students to attain universities education in other countries.

Therefore, brain drain can be described as the process in which a country loses its most educated and talented workers to other countries through migration (Rapoport, 2012). With Kihembo (2017), brain drain is the loss of highly skilled professionals from a source country to a recipient country. This trend is considered a problem, because the most highly skilled and competent individuals leave the country, and contribute their expertise to the economy of other countries. The country they leave can suffer economic hardships because those who remain don't have the "know-how" to make a difference (Rapoport, 2012).There are various causes of brain drain, but they differ depending on the country that's experiencing it. The main causes include seeking employment or higher paying jobs, political instability, and to seek a better quality of life (Rizvi, 2005). Causes of brain drain can be categorized into push factors and pull factors. The push factors are negative characteristics of the home country that form the impetus for intelligent people migrating from Lesser Developed Countries (LDC). In addition to unemployment and political instability, some other push factors are the absence of research facilities, employment discrimination, economic underdevelopment, lack of freedom, and poor working conditions (Batista et al., 2012). Pull factors are the positive characteristics of the developed country from which the migrant would like to benefit. Higher paying jobs and a better quality of life are examples of pull factors. Other pull factors include superior economic outlook, the prestige of foreign training, relatively stable political environment, a modernized educational system to allow for superior training, intellectual freedom, and rich cultures (Mountford, 2009). These lists are not complete; there may be other factors, some of which can be specific to countries or even to individuals.

It is essential to understand the notion of competitiveness in general and the notion of higher education institution competitiveness in particular. The concept of competitiveness widely used implies the ability or feature of an object to be better than others in its capacity, in an array of similar objects. Services, companies, industries, regions, employees can be deemed through a prism of competitiveness. In this case,Irshad (2016) states that competitiveness of various objects has different meanings. In particular, the competitiveness of goods is treated as the ability to satisfy buyers' needs, the country's competitiveness presumes the ability to create and increase national product, to take a particular place in the international division of labour, and the competitiveness of an industry implies the ability to increase its share in the gross domestic product. In other words, competitiveness means the ability of a company or industry to cope with competition. To be competitive is to occupy the dominant or growing positions on the market (internal and external). The competitiveness of a company is defined as a level of competency with regard to other competitors by the following parameters: technology, staff knowledge, and skills, the level of strategic and operational planning, quality (of management systems, production, and products), communication.

At first glance, it seems obvious that brain drain is a significant cost to emerging economies. However, some academic observers (Rapoport, 2012; Chand, 2015) have argued that brain drain is beneficial. They posit that the possibility of migration encourages investment in education because of the potential high returns abroad from educated migrants. Arguably, brain drain can thus eventually increase income equality in the country of origin.

Available data suggests that one of the greatest challenges that countries face to maintain or advance their competitiveness levels is to ensure a flowing and sustainable human capital accumulation (Chiswick, 2011). The challenge is not only to invest and develop local talent but also to provide opportunities for that talent to realize its full potential and to continuously improve the set of skills available. In addition, the data shows that, ultimately, countries that accumulate their home-grown human capital with a balanced intake of overseas talent are able to achieve higher levels of competitiveness (Docquier, 2012). In this sense, brain drain seems to deprive countries of the necessary human capital which would enable them to safeguard their competitiveness. When brain drain is prevalent in a developing country, there may be some negative repercussions that can affect the economy. These may include loss of tax revenue, loss of potential future entrepreneurs, and shortage of important, skilled workers. The exodus may also lead to loss of confidence in the economy, which will cause persons to desire to leave rather than stay as well as loss of innovative ideas, loss of the country's investment in education and the loss of critical education services (Bollard et al., 2011).

Brain drain is particularly acute in sub-Saharan Africa. The migration of young and educated workers takes a large toll on a region whose human capital is already scarce. The concentration of migrants among those who are educated is higher than in other developing economies. The migration of highly-skilled workers entails a high social cost, as is evidenced by the departure of doctors and nurses from Malawi and Zimbabwe, which may mean welfare losses beyond those that are purely economic. The costs and benefits of the brain drain and circulation of talent are hotly debated. International mobility of skilled workers can generate global benefits by improving knowledge flows and satisfying the demand for skills. The contribution of foreign skilled workers to economic growth and achievement in host countries, in particular to research, innovation and entrepreneurship, is increasingly recognised witness the number of foreign-born US Nobel Prize winners or creators of global high tech companies, such as Intel or eBay, and other successful start-ups (Gibson, 2014). It is important to distinguish between emigrants from OECD countries and those from developing countries.

The risk of a brain drain damaging rich countries is arguably lower, but it does exist. Canada may well lose skilled workers to the United States and import skilled human capital from other countries. As skilled migration between advanced countries is often temporary, there may be a double gain from the circulation of the highly skilled. In sending countries in the developing world, the challenge is greater. For these countries, capturing benefits mostly depends on attracting back skilled emigrants and providing opportunities for them to use their new technological competencies. Returnees also can bring valuable management experience, entrepreneurial skills and access to global networks. They may even bring venture capital. But this is looking on the bright side (Chiswick, 2011).

Mostly, the problems caused by the brain drain in poorer sending countries are great. Migrants from developing countries are generally more likely to stay in the host country than migrants from advanced countries (Chand, 2015). Survey evidence on the share of foreign PhD graduates in science and technology who stay abroad show that 79% of 1990-91 doctoral recipients from India and 88% of those from China were still working in the United States in 1995. In contrast, only 11% of Koreans and 15% of Japanese who earned science and engineering (S&E) doctorates from US universities in 1990-91 were working in the United States in 1995. In the longer term, however, return flows of people and capital may not only offset some potential negative effects of international migration but also constitute an economic development strategy in its own right. In Chinese Taipei, for example, half of all the companies emerging from that economy's largest science park, Hsinchu, were started by returnees from the United States. And in China, the Ministry of Science and Technology estimates that returning overseas students started most Internet-based ventures (Bhaghwati& Hamada, 2013).

The relative success of Chinese Taipei, Korea and Ireland in fostering return migration has been attributed to the opening of their economies and policies to foster domestic investments in innovation and R&D. Developing countries with some infrastructure in R&D, like India, are more likely to attract the return of migrants, as well as money and business contacts. "Scientific diaspora" and "immigrant entrepreneur networks" can also help sending countries capture benefits and know-how from emigrants overseas. Grass roots initiatives in South Africa and Latin America have been developed to link researchers abroad to networks in their home countries. Indian professionals in the US have been the primary drivers of knowledge and capital flows to India (Ozden, 2016). The Indian government has contributed to the emergence of these private networks through legislative and tax rules that encourage remittances and investment from Indians abroad. The diaspora idea has been put to work by advanced countries too, like Switzerland, whose online network; Swiss-List.com was established to encourage

networking among Swiss scientists in the US and to foster contacts with peers in Switzerland.

Nadeem (2011) noted that Governments can do quite a lot to address the causes of the brain drain. Science and technology policies are key in this regard. Developing centres of excellence for scientific research and framing the conditions for innovation and high tech entrepreneurship can make a country attractive to highly skilled workers, both from within the country and from outside. The task is not easy and it takes time; India's investment in human resources in science and technology and own R&D capabilities dates from the 1950s. China has recently launched a project to develop 100 universities into world-class institutions that not only provide higher education training, but also academic employment and research opportunities (McGraw, 2018).

In the OECD, the UK government plans to increase the salaries of post-doctorates by 25% and increase funding for the hiring of university professors. In France, some 7,000 teaching-researcher posts have been created since 1997 to retain talent and encourage the return of post-doctorates working abroad (McDonald, 2016). The European Commission is looking to improve the attractiveness of the European research area and has doubled the amount of funding devoted to human resources in the Sixth Research Framework Programme to € 1.8 billion. The risk of a brain drain is real. Yet countries can create opportunities for research, innovation and entrepreneurship at home and stimulate a return flow of migrants and capital, as well as win access to international innovation networks. According to McGraw (2018), with the right mix of policies and sustained international co-operation, several countries could, as one Indian official pointed out, see the "brain drain" be transformed into a brain bank.

Based on the above literature, there is enough literature on the relationship between brain drain and competitiveness. However, in the reviewed studies, some studies report brain drain without providing what relationship it has with university competitiveness. This is in addition to context gaps with limited clarity on the causes of brain drain in Burundi and other report organizational competitiveness not university competitiveness as intended by the current study. Also, some reviewed studies did not provide deeper insights in the relationships as they were particularly quantitative. There is a need to conduct such studies within the Burundian context as none of the reviewed studies were particular to universities in Burundi.

METHODOLOGY

This study adopted descriptive and cross-sectional research design. The study used a sample size of 99 persons from the study population of 132. This has been arrived using Sloven's sample size determination formula and follows a confidence level of 95% which gives a margin error of 5%. Data was collected using a self-administered questionnaire. The validity of the research instrument was explored using the Content Validity Index (CVI) while the reliability of the research instrument was explored using the Cronbach Alpha Coefficient. Results showed that the research instrument was both valid and reliable as indicated by the Cronbach Alpha values and the Content Validity Indices which were above 0.700 for all cases. Data collected from the field was coded and analysed using SPSS (Statistical Package for Social Science) version (22.0). The data was then presented using cross tabulation to describe sample characteristics, and correlation was used to establish the relationship between the study variables while regression analysis was used to establish the combined effect on the study variables.

RESULTS AND DISCUSSION

Descriptive statistics

Table1: Descriptive Statistics of Brain Drain driving factors

	Mean	Std. Deviation
Remuneration	2.7854	1.47621
Political Environment	3.2049	1.47760
Growth opportunities	2.5854	1.45817
Working Conditions	2.4341	1.37976
Job security	2.7805	1.47050

The results in table 1 above show that brain drain was measured using five dimensions and these focused on remuneration, political environment, growth opportunities, working conditions, and job security. The respondent agree on political environment (mean=3.2049, St. dev.=1.47760); and disagree with remuneration (mean=2.7854, St. dev.=1.47621); Growth opportunities (mean=2.5854, St.dev.=1.45817); working conditions (mean=2.4341, St.dev.=1.37976); and Job security (mean=2.7805, St.dev.=1.47050).

Table 2: Descriptive Statistics of University Competitiveness

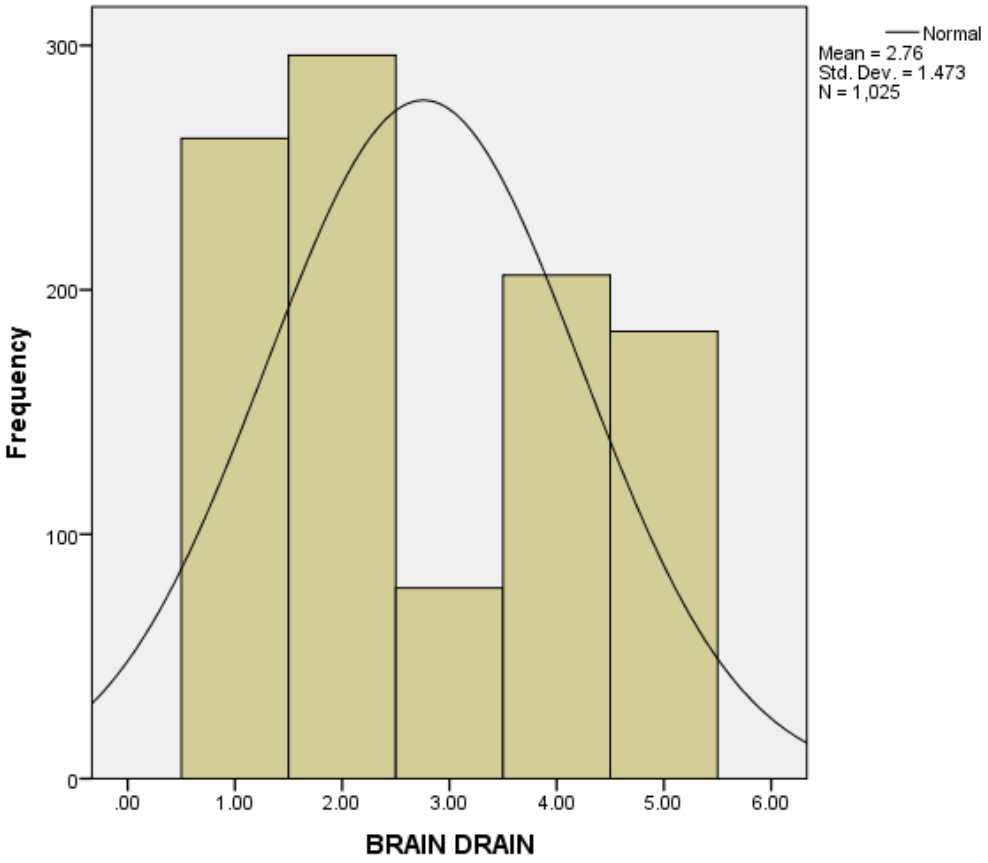
	Mean	Std. Deviation
Pricing	3.5854	1.33900
Enrolment volumes	3.4927	1.43014
Course packaging	3.2146	1.49600
Human Resource Quality	2.9659	1.49306

The results in table 2 above show that University competitiveness was measured using four aspects namely pricing, enrolment volumes, course packaging, and human resource quality. The respondents disagree only for one element of university competitiveness such as human resource quality (mean=2.9659, St. dev. =1.49306); however, they agreed on pricing (mean=3.5854, St. dev. =1.33900), enrolment volumes (mean=3.4927, St. dev. =1.43014), course packaging (mean=3.2146, St. dev. =1.49600).

Normal Distribution of the variables

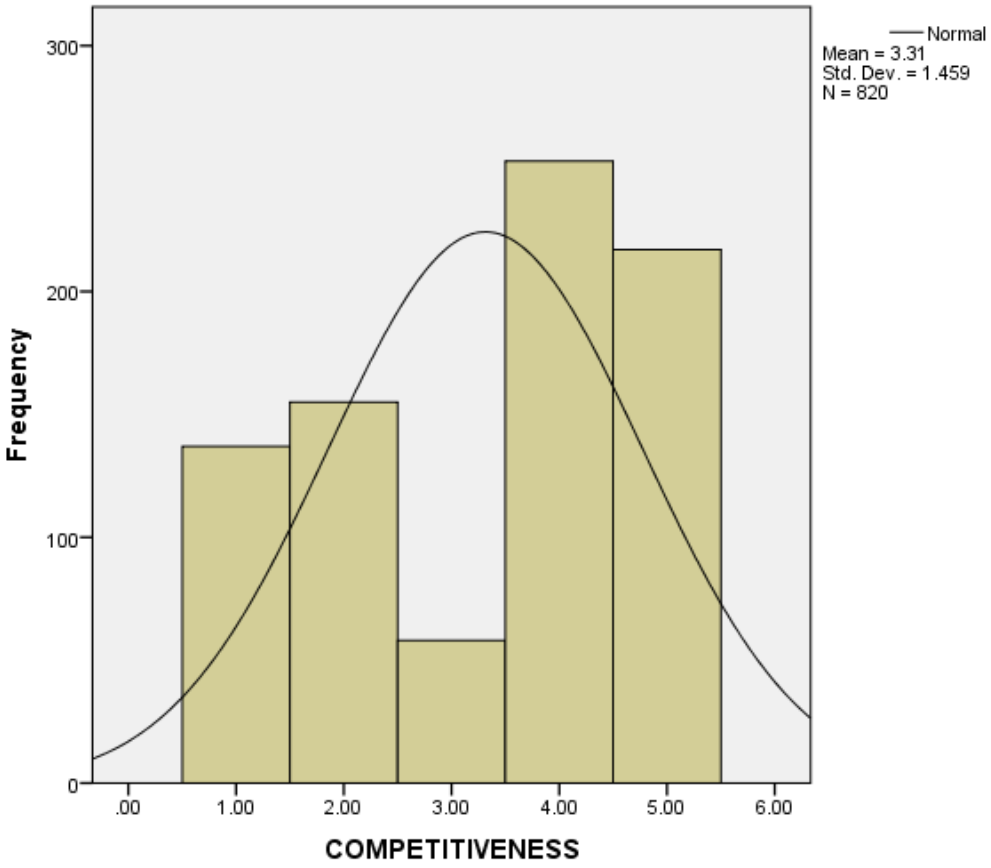
The histogram of Brain drain driving factors and university competitiveness are shown below and depict that the sample values are normally distributed.

Figure 1: Normal distribution of Brain drain driving factors



The results in figure 1 above indicate that respondents did not differ much in ranking brain drain driving factors as low, thereby indicating that the used dimensions of brain drain did not support university competitiveness as the computed mean was 2.76. This implies that the management of universities should improve remuneration, growth opportunities, working conditions, and job security as ranked below the average.

Figure 2: Normal distribution of University competitiveness



The results in figure 2 above show that the computed mean for university competitiveness was 3.314 thereby proving that it was perceived to be just average. This implies that there is a need to increase human resource quality as an aspect of university competitiveness.

Correlation and regression results

Correlation and regression analysis were performed using SPSS version 22.0 to find out the relationship between brain drain and university competitiveness, and their effect.

Table 3: Correlation results between brain drain and university competitiveness

Correlations		
		University Competitiveness
Brain drain	Pearson Correlation	.732**
	Sig. (2-tailed)	.000

**. Correlation is significant at the 0.01 level (2-tailed).

The results in table 3 above indicate that there is a positive relationship between brain drain driving factors and university competitiveness (r=0.732, p=0.000<0.01). This means that improvements brain drain driving factors are associated with improvement in university competitiveness amongst the universities in Burundi. This is in line with the findings of Docquier (2012), that countries that accumulate their home-grown human capital with a balanced intake of overseas talent are able to achieve higher levels of competitiveness. With Bollard (2011), brain drain may lead to loss of confidence in the economy, loss of innovative ideas, and loss of critical education services. This is supported also with the findings of Rapoport (2006) that the migration of academics from African universities to universities in Europe and the United States of America is having a damaging effect on the continents' higher education. This result agreed to by the current researcher is illustrative of the fact that improvements of remuneration, political environment, growth opportunities, working conditions, and job security need priority given that they are followed by rises in the competitiveness levels among universities.

Table 4: Multivariate regression results for the effect of brain drain driving factors on University competitiveness

	Standardized Coefficients Beta (β)	Sig.
(Constant)		.000
Remuneration	.199	.018
Political Environment	-.015	.891
Growth opportunities	.577	.000
Working Conditions	.123	.136
Job security	.025	.788
Adjusted R^2=0.727 F=109.668 P=0.000		
Dependent Variable: University competitiveness		

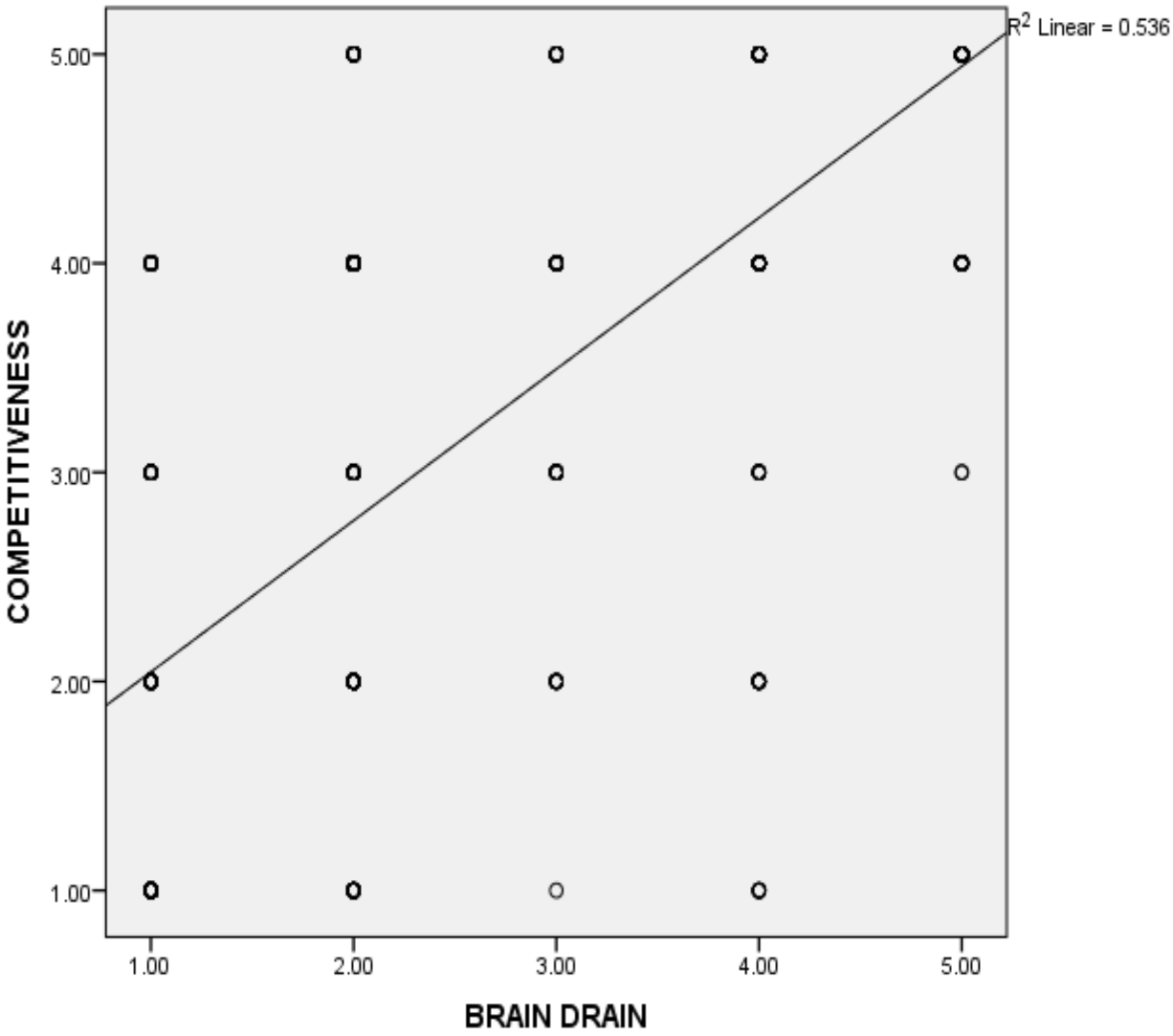
The results in table 4 above show that brain drain driving factors namely remuneration, political environment, growth opportunities, working conditions, and job security explained 72.7% of the variation in university competitiveness in Burundi (Adjusted R^2=0.727). This means that 27.3% of the variation was accounted for by other factors not considered under this model. Study results on the overall rejects the null hypothesis that brain drain driving factors have no significant effect on university competitiveness amongst universities in Burundi (F=109.668, p=0.000). There is thus sufficient evidence that brain drain driving factors has a statistically significant effect on university competitiveness amongst universities in Burundi.

The study indicated that political environment (β=-0.15, p=0.891>0.05); working conditions (β=0.123, p=0.136>0.05); and job security (β=0.025, p=0.788>0.05) as brain drain driving factors had an insignificant effect on university competitiveness amongst universities in Burundi. This result is however not in line with what Wusu (2006) had earlier established that the number of Africans heading out of the continent due to the deterioration of social, political and economic conditions. This result compares well with earlier result by Rizvi (2006) that the drivers of mobility are economic, cultural, and political issues. This is also in line with the findings of Ramlall (2003) that people are strive to work and to stay in those institutions that provide good and positive environment, where employees feel that they are valued and making difference.

The only two aspects of brain drain driving factors that is remuneration (β=0.199, p=0.018<0.05); and growth opportunities (β=0.577, p=0.000 <0.05) had a positive significant effect on university competitiveness amongst universities in Burundi. Of the statistically significant aspects of brain drain driving factors, growth opportunities (β=0.577) had the highest significance followed by remuneration (β=0.199). This result compares well with Irshad (2016) established that remuneration plays significant role in attracting and retaining good employees specially those employees whose give outstanding performance or unique skill which is indispensable to the organization. The result is in line with what Graddick (1988) who reported that growth opportunities motivate employees and help the organization to gain and sustain the competitive advantage. This is supported also with the results of Kyriakidou and Ozbilgin (2004) reported that career development is mutual benefited process as it gives

imperative outcomes to employer and employee. Then, Prince (2005) found that to gain and maintain competitive advantage, organizations required talented and productive employees and these employees need career development to enhance and cultivate their competencies. These results demonstrated a needed response by managers that promote control of poor university competitiveness through strategies that increase growth opportunities as well as remuneration.

Figure 3: Scatter Plot with Regression Line a positive slope



The scatter plot of the actual data shown above clearly depicted the regression line showing a positive slope, which indicated a direct positive relationship between brain drain driving factors and university competitiveness.

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

The findings of this study revealed the existence of a positive significant relationship between brain drain driving factors and university competitiveness amongst universities in Burundi and rejected the null hypothesis as brain drain have no significant effect on university competitiveness in Burundi and accepted the alternative hypothesis as brain drain have a significant positive effect on university competitiveness amongst universities in Burundi.

RECOMMENDATIONS

- ✓ The administration of the university should focus on growth opportunities and remuneration strategies as found as the predictors of university competitiveness.
- ✓ The managements should ensure the formulation and implementation of strategies to address the needs of workers amongst universities.

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