The expenditure and foreign revenue impact of international students on the South African economy

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Abstract

In South Africa, there is still no clear policy of internationalisation of higher education, partly due to limited research. So far, only two efforts – at Nelson Mandela Metropolitan University (NMMU) in 2004 and Rhodes University in 2005 – have been made to determine the expenditure and foreign revenue impact of international students on South Africa. Each of these papers sampled only a single university, so they are of limited use for national impact analysis. To build on these studies, this research was conducted at six South African universities that admit the largest number of international students and also included the economic effects of spending items hitherto neglected. We show that international students (mainly from Africa) contribute significantly to South African GDP and balance of payments, but that South Africa still lags behind in exploiting and enhancing these benefits.

Keywords

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1. INTRODUCTION

Internationalisation of university education has advanced over the past decade and has gained momentum as a result of globalisation. Industrialised countries combined accept 85% of all the international students (OECD, 2004b), but some developing countries have recently become important destinations for international students.

The inflow of international students brings foreign revenue to destination countries, and has been described as a form of international trade (OECD, 2004a; Stevens, 2006). For example, in 2006, 23.6% of Australia's international trade in services was education-related, making it the second largest individual-services trade sector in Australia (Giles & Luxmoore, 2007). Other benefits of international students include the permanent enhancement of a country's human capital and increased domestic expenditure.

To reap these benefits, developed countries now compete to attract international students by adopting favourable internationalisation policies. Developing countries (especially South Africa, with its skills constraints) could benefit much by devising policies to attract more international students. According to the Department of Education's (2009) statistics, 61 954 international students were enrolled at South African public universities in the 2008/9 academic year.

Appropriate policy responses in South Africa are inhibited by lack of research on why these students are attracted to South Africa. Policy is further constrained because it is not known whether there is room or reason to increase the inflow further.

There is much debate as to the benefits of international students to South Africa, even as demand for university education from international students is growing (Ramphele, 1999; Hall, 2004; Mutula, 2002; Shindondola, 2002). Currently, South Africa's higher education system is undergoing restructuring to address the racial imbalances in admission into tertiary institutions that existed in the previous regime. Given this challenge, the admission of international students at higher institutions of learning would only be justified if they had a positive expenditure and net foreign revenue impact, and if they did not displace South Africans (in education, accommodation or public health services). Many policymakers (Pandor cited in IEASA Report 2004) and experts (Hall, 2004; Ramphele, 1999) reason that only international students gain from studying in South Africa. They fail to appreciate how South Africa gains and could gain further from the inflow of such students. While the gains to the international students and their source countries can be significant, this article is dedicated to the benefits, especially the financial benefits, South Africa gains, and stands to gain still more, from the flow of international students.

Unfortunately, the available studies have not given a clear picture on the expenditure effects of international students, as they have generated rather different estimates. A study conducted at NMMU estimated total spending of an international student in South Africa in 2004 as R57 000 per annum. Snowball and Antrobus (2005:2006) conducted a study which sought to determine the expenditure effects of international students compared to South African students at Rhodes University in 2005. The result was a much lower annual figure of R40 707 as the average total spending of an international student in South Africa, which they concluded to be less than what the local students spent.

Moreover, these studies have other methodological limitations. They omit vital components of students' spending. Each was carried out at single location/university (Eastern Cape), and

neither is therefore suitable for a national impact analysis. Lastly, a comparison of the spending of local and international students would be useful only if international students displaced local students, which is not necessarily the case. Moreover, according to the administrator at the University of Johannesburg in charge of international student registration (G. Kotze, personal communication, June 3, 2009) some universities, such as the University of Johannesburg (UJ), adhering to regulations from the Department of Home Affairs, discretionally give preference to South Africans when it comes to admission. Furthermore, as this study revealed, local students get preference for on-campus accommodation, so most of the respondents (80%) reside off-campus and spend most of their money on rent. Their demand for rental units has led to an expansion of accommodation, as some owners of properties around the campuses have converted their premises into student residences. This suggests that foreign students do not necessarily displace local students on campus, as resources are allocated to them only on a marginal basis. Instead, they create additional income opportunities for the community living close to the campus and surrounding areas.

This study corrects these methodological problems by offering a more informed basis for policy on international students and exports of educational services. It determines the expenditure flows of international students in South Africa in a way that better reflects the variety of spending patterns at different universities and regions in South Africa. Furthermore, it incorporates spending components that had been ignored by earlier studies. The study concludes by establishing to what extent South Africa benefits from international students in terms of expenditure and receipts of foreign revenue, and whether it would be beneficial to encourage further inflows.

2. METHODOLOGY

The research was mainly conducted through self-administered questionnaires. In addition, the researchers used data on spending by visiting relatives from the 2005 NMMU study as a secondary source (see Snowball & Antrobus, 2006). The research involved both quantitative and qualitative analysis. The mixed approach was necessary, as some aspects of the study required elaborate description that can best be achieved through qualitative analysis, while some aspects required precise numbers, and here the quantitative approach was more suitable (for details, see Westat, Frierson, Hood & Hughes, 2002).

2.1   Estimating the population

The number of international students in South African universities for the 2008/9 academic year was 61 954 (Department of Education, 2009). Almost 90% of these students came from other African countries. As can be seen in **Figure 1**, there has been an upward trend in international student enrolments, and this number represents a peak.

The total number of international students at South African residential public universities in 2008 was 36 386 (this excludes 1 942 students for whom information was missing, most of them likely to be international students). It also excludes the small number of international students registered at private institutions (such as Monash South Africa). Monash currently has one of the largest enrolments of international residential students among private HEIs. If the 1 625 international students at Monash South Africa are added, foreign residential students total 38 011. This number was adopted as the population to estimate the total national expenditure

of international residential students.
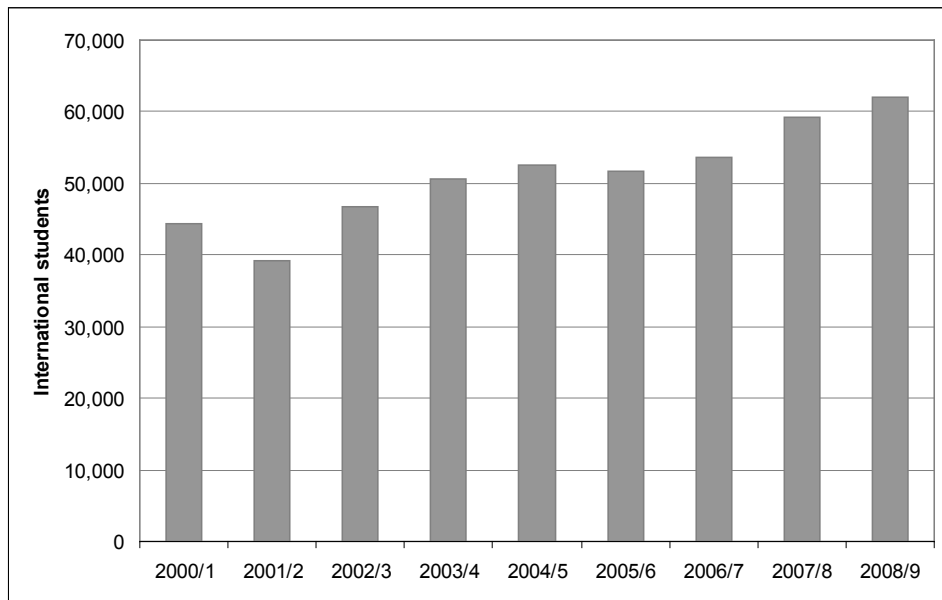
FIGURE 1:   Total number of international students at public HEIs in SA, 2000-2008

Source: *Department of Education (2009)*

There were 25 568 international students enrolled at Unisa, a non-residential university. To estimate the national expenditure impact, international students at Unisa had to be treated separately, because some of them study by distance-learning, which does not necessarily oblige them to stay in, or even enter, South Africa. More often than not, the students pay module fees only and not tuition fees. Estimating the expenditure of international students at Unisa in the same way as that of students at residential universities would inflate the results of the study. However, given the large number international students at Unisa, if their spending impact is completely ignored, the expenditure of international students would be significantly underestimated. For the sake of being conservative, the researchers decided to include only an estimate of the study fees of international students at Unisa.

2.2   Sampling

In order to expand the narrow sample base of previous studies, this study was conducted at six universities in South Africa and surveyed 181 international students. To obtain a wider regional spread and avoid biases associated with the concentration of international students from one country at a particular university, the research targeted universities with a diversity of international students in four of the five provinces where the majority of international students reside (see **Table 1** for the distribution by province). For this reason North West University (NWU) was excluded, because even though it hosted 11.7% of the 36 386 international students at public universities in 2008, almost 80% of them were from Namibia (perhaps due to proximity). The study also ensured that the universities selected were, collectively, home to at least 30% of the international student at higher education institutions (HEIs) in South Africa (as recommended by Westat et al., 2002).

TABLE 1: **International students at public universities by province**

Province	Number of public HEIs	Total international students	Share of international students
Gauteng	5	11 567	31.8%
Western Cape	4	8 613	23.7%
Eastern Cape	4	5 144	14.1%
North West	1	4 246	11.7%
KwaZulu-Natal	4	3 323	9.1%
Free State	2	2 754	7.6%
Limpopo	2	739	2.0%
Mpumalanga	0	0	0.0%
Northern Cape	0	0	0.0%
Total	22	36 386	100%

Source: *Department of Education (2009)*

International students were surveyed at six universities in an attempt to estimate their domestic expenditure. Together, the five chosen public universities are home to 38% of the residential international students in South Africa (i.e. excluding Unisa) and this rises to 40% if Monash is included. **Table 2** shows the universities included in the study.

Table 2: Universities selected for the study

University	Province	Number of respondents
University of the Witwatersrand (Wits)	Gauteng	14
Monash South Africa (MSA)	Gauteng	40
University of Johannesburg (UJ)	Gauteng	37
University of Cape Town (UCT)	Western Cape	21
Nelson Mandela Metropolitan University (NMMU)	Eastern Cape	41
University of KwaZulu-Natal (UKZN)	KZN	17
		181

Source: *Survey*

Monash South Africa (MSA), a private institution, was included because it hosts a significant number of international students who are registered in private higher education institutions. Moreover, MSA was surveyed because it is a residential university. As stated before, Unisa students were not surveyed – only their module fees were taken into account. If Unisa students are taken into account, then 64% of all international students (residential and non-residential) are registered at the selected universities.

Snowball sampling (see Neuman, 2003) was used, as it enabled the researchers to survey universities in distant provinces through proxies (networks of other international students). The sample size as recommended by Neuman (2003) is between 150 and 300 respondents. Although the initial intention was to employ quota sampling (see Neuman, 2003; De Vos, Strydom, Fouche & Delport, 2006) to give fair representation to smaller groups (such as exchange students) it was not possible to obtain this information from all the universities surveyed, and the snowball

sampling method failed to net a substantial ratio of exchange students. However, since these groups comprise a small proportion of the population, this should not have had a significant effect on the results.

Sample bias was reduced by repeated attempts at reaching respondents, prompt and careful editing of the completed questionnaires and comparing the characteristics of the respondents and non-respondents in order to identify any suspected differences. In cases of glaring differences, the suspect questionnaires were discarded and new respondents sought (Westat et al., 2002).

2.3 Characteristics of respondents

The study gathered a wide range of personal information (e.g. gender, age, university, qualification) about the respondents. Constraints of space allow for only the source country distribution to be reported here (detailed results are available from the authors).

The respondents were from 25 different source countries. Zimbabwe yielded the largest number of respondents, followed by Botswana, Kenya, DRC, Zambia, Swaziland and Lesotho. Respondents from Zimbabwe in any of the six institutions either formed the majority or second majority. **Table 3** shows the percentage of international residential students from the five most important source countries, and their share of respondents in the sample.

Table 3: Source countries of respondents

Country	% of international residential students in SA	% of respondents in sample
Namibia	16.2%	2.8%
Zimbabwe	15.8%	24.9%
Lesotho	9.8%	5.0%
Botswana	9.3%	15.5%
Swaziland	4.9%	4.4%
SADC	68.9%	69.1%
Other African countries	17.1%	23.2%
Non-African countries	13.9%	6.6%

Source: *Department of Education (2009), survey results*

Students from Namibia were underrepresented due the exclusion of NWU from the sample (for the reasons given above). Those from Zimbabwe and Botswana were somewhat overrepresented, probably due to the fact that students from these two countries are spread fairly evenly across most South African universities (as opposed to Namibian students, who are mostly found at NWU). The representation from SADC countries as a whole was very close to their actual share of residential international students, which was encouraging given that the SADC is the largest source. Overall, African students were somewhat overrepresented relative to students from Europe, Asia and the Americas.

3. EXPECTED COSTS AND BENEFITS OF INTERNATIONAL STUDENTS

The expected benefits from the inflow of international students are similar to those of the inflow of foreign labour, without some of the expected costs. The benefits include inflow of foreign currency and increased expenditure (which increases the demand for labour). Some of the benefits of increased expenditure might be reduced, as income is remitted to relatives outside the host country, but the reverse is true in the case of international students, as most of them are beneficiaries of foreign funding from the sending governments, relatives at home and other private sponsors.

The inflow of foreign nationals is often disliked in the destination country as it is believed to cause negative externalities, such as competing down the wages and displacing the locals in the labour market and public services. It can be argued that the negative externalities in the case of international students are negligible, especially for South Africa. First, international students put little pressure on public resources, as they are not entitled to government transfers. International students are also required by South African law to be members of a medical aid, so they are less likely to utilise public hospitals. Second, opportunities to study at a South African university and to stay in campus accommodation are only extended to international students if they do not displace a South African student. Third, international students may work for a maximum of 20 hours a week in South Africa. This study shows that only a quarter of the respondents obtain some employment, so it is unlikely that they displace South Africans in the labour market. Since only a few are employed, international students cannot significantly affect the supply of labour. Indeed, their increased spending increases the demand for labour, which is more likely to result in increased wages for local workers.

International students should ultimately enhance skill levels, since "student mobility is the precursor of skilled migration" (Castles & Miller, 2003). This research found that most of the international students in South Africa return to their home countries on concluding their studies. In this study, however, 38% of the respondents indicated that they would like to remain permanently in South Africa. Those who remain and stay in South Africa for long periods would have the net positive welfare impact expected from highly-skilled immigrants, such as employment creation, tax revenue, increased productivity and innovation, given their skills profiles (for the skills exposition, see Borjas 1994). Of the three critical skills areas (Engineering, Sciences, and Commerce) where skills are most wanting in South Africa, the survey found that 67% of international students were registered in these courses. According to the Department of Education (2009), almost a quarter (22%) of all international students in South Africa study towards postgraduate qualifications. However, this paper aims to determine only the quantifiable impact of international students (in terms of expenditure and foreign currency inflow). The potential skills impact of international students is more difficult to quantify, but is discussed in Aloyo and Wentzel (2011).

4. ESTIMATING THE EXPENDITURE IMPACT

The data on international students' expenditure was analysed using SPSS and Microsoft Excel. The different categories of spending of international students were added together to determine their direct expenditure. To determine the total spending effect of international students, direct expenditure was added to indirect expenditure, which itself is derived from the direct expenditure (for the methodology see Snowball & Antrobus, 2006, Vickers & Bekhradnia, 2007,

Black, 1991). To determine net foreign revenue inflows, funds deemed to originate from inside South Africa were deducted from international students' direct spending.

4.1 Main expenditure categories of international students

4.1.1 Living expenditure of international students

Before generalising, it is important to determine the similarities and differences in respondents' spending between universities in order to determine whether it is prudent to apply the findings from one or more universities to the whole of South Africa. This was done by testing for the equality of the means of total spending at the six universities by using variances. This is determined by establishing between-groups (all the six universities) mean spending variances and within-groups (each university's) mean spending variances using one-way ANOVA.

Between-groups variation is the variation due to the interaction between the groups' means. If the groups' means are close to each other, the variation will be small. If the "between" variance is smaller than the "within" variance, then the means are really close to each other and we may not reject the claim that they are all equal.

If a decision is made to reject the null hypothesis, then at least one of the means is different. The null hypothesis is that all sample means are equal, while the alternative hypothesis is that at least one of the means is different. Inference for the variances in sample means is made by observing the p-value of the ANOVA test. If p-value < .05 the null hypothesis is rejected and the conclusion is that the differences in mean spending for the six universities are too large and statistically significant to be ignored. If p-value > .05, the alternative hypothesis is rejected.

As shown in **Table 4**, significant similarities in spending on phone calls, medical aid and entertainment were observed for all the six universities, and the alternative hypothesis was duly rejected for these items. The similarities of the mean spending on medical aid could be attributed to the fact that international students mostly use the same medical aid companies (the majority (60%) of them are on Ingwe Health Plan), settling for similar quotes, given that some of these companies specialise in the provision of medical aid services to international students.

Table 4: Statistically significant similarities in spending means across HEIs

Item	Degree of freedom	Significance (p-value)	Mean (amount per month)
Phone calls	$F(5,155)= 1.117$	0.354	R270
Medical aid	$F(5,144)= 0.531$	0.753	R326
Entertainment	$F(5,139)= 0.949$	0.451	R443

Source: *Analysis of survey results*

A similar conclusion can be drawn regarding phone calls, as there are only a few telephone companies in South Africa selling similar airtime vouchers, and the respondents are normally distributed over the usage of the services provided by the phone companies at all the six HEIs. This implies that in future research one need only find information on these items at one university (or from a modal medical service provider such as Ingwe Health Plan in this study) and apply it to all the other universities.

For the means of the other categories of spending, the selected universities have different variances. However, the ANOVA does not tell us where the differences lie. Determining that there are indeed differences is one thing, but a way is needed to ascertain the source of the differences (Pallant, 2005). Using Dunnett's T3 test it was determined which particular groups differ from the others among the six universities. Where $p < .05$, the mean of a particular spending category in one HEI is dissimilar and statistically significant from the mean in the same category at other HEIs. The results of this test are summarised in **Table 5**. Significant differences in mean spending among universities in total spending, rent, food and transport within South Africa were observed.

Table 5: Statistically significant differences in spending means

Item	Highest mean		Lowest mean		p-values
Total	UCT	R5 706	NMMU	R3 738	0.018
Rent	UJ	R2 476	NMMU	R1 720	0.012
Transport in South Africa	UCT	R1 169	MSA	R345	0.034
	UCT	R1 169	NMMU	R288	0.020
Food/groceries	Wits	R1 216	NMMU	R640	0.034

Source: *Analysis of survey results*

The relatively low spending amongst NMMU respondents could be due to the low cost of living around Port Elizabeth, where the university is situated, and in the Eastern Cape generally, as judged from the mean spending on rent, food and transport within South Africa. The relatively high spending level amongst the respondents from UCT could be due to the high cost of living around Cape Town and the Western Cape. It could also be due to the fact that among the respondents who indicated that they are employed, those from UCT earned the highest salaries, which would increase their demand and change their tastes to more expensive goods.

The two previous studies on the impact of international students on South Africa were both conducted at a single university (NMMU in 2004 and Rhodes University in 2005) in the same province (Eastern Cape). Given that the present study found the living expenses at NMMU (and perhaps, by extension, the Eastern Cape) to be the lowest amongst the six HEIs, using the data from these earlier studies might lead to an underestimation of the national expenditure impact of international students, as Snowball and Antrobus (2006) recognised.

To avoid problems associated with sampling from a single locality, this study surveyed institutions in four of the five largest host provinces. Based on the responses, the mean monthly living expenditure per category was calculated by province (see **Table 6**). The mean for Gauteng is the average of the means for Wits, UJ and Monash. The Western Cape was represented by UCT, KwaZulu-Natal by UKZN and the Eastern Cape by NMMU. For the other provinces (Limpopo, North-West and Free State) the lower Eastern Cape mean was adopted.

The study adjusted some of the responses, where appropriate. In the case of necessities, such as food and rent, if a respondent did not provide a spending amount, the average amount for that category was allocated. Furthermore, unusually high expenditure on "rent" at UCT was noted and the value of the lower bound mean at the 95% confidence interval was adopted instead.

Spending on medical aid was calculated separately because it is not a monthly living expense, but paid up-front as a lump sum. The low between-group variance implies that the overall mean of monthly spending can be used to calculate the annual lump sum – which comes to R3 912 per

residential student (R326 × 12).

Table 6: Mean monthly spending per category by province

Province	Weight	Rent	Transport in SA	Food
Gauteng	31.8%	2 064	665	983
Western Cape	23.7%	2 476	1 169	1 100
KwaZulu-Natal	9.1%	1 849	710	835
Eastern Cape	14.1%	1 720	288	640
Other provinces	21.3%	1 720	288	640
Weighted average (monthly)		2 020	655	876
Estimate of annual amount		20 203	6 552	8 759

Source: Survey results

In order to obtain a national average of monthly living expenditure, a weighted average was calculated (using each province's share of international students in **Table 1**) for those items that had a between-group variance that was too high (see **Table 6**). The two monthly items with low between-group variance (phone calls and entertainment) was then added by taking their means as given in **Table 4**. This generated an average monthly amount of R4 264 per residential student. Since most of the respondents travel back to their home countries at least once a year during holidays, the monthly expenditure was multiplied by only 10 months to determine the annual living expenditure as R42 643. Some respondents may remain in South Africa for the full 12 months per year, but this adjustment was done to avoid unintentionally inflating the expenditure estimate.

4.1.2   Tuition fees charged by the institutions to international students

The international tuition fees for 2008 at the selected universities, including Unisa, were estimated from the information available on the web pages of some universities (UCT, 2008; UKZN, 2008; NMMU, 2008; Wits, 2008, Unisa, 2008; Monash, 2008). UJ did not have the fee information on the web but it was available at the faculty offices and at the Student Finance Department of the university.

It was clear that there are wide differences between institutions, so no single institution's tuition fee could be taken as representative. At some institutions such as UJ, MSA and NMMU, international students are required to pay all fees in full prior to registration. Moreover, depending on how the institution categorises students, all the institutions charge a premium above the tuition fees that South African students pay. Some institutions like UCT charge SADC foreign students the same fees as South African students. Exchange students pay higher tuition fees in most instances than local students or those from the SADC and the rest of Africa.

To calculate the average tuition fee per international student, the total revenue from international students from the six selected residential universities, excluding Unisa, was calculated (using the published fee structures and total number of international students at each institution). This total revenue (R405 555 567) was then divided by the total number of international students at these institutions (15 276). This resulted in an estimated average annual tuition fee of R26 549 per residential student, after consideration of the different fees paid by postgraduate and undergraduate students, calculation of which is too detailed to

include here.

Apart from paying tuition fees, international residential students also buy books and stationery. Only three institutions, Wits, UCT and UJ, gave an estimate of book and stationery expenditure per student as R5 500, R4 000 and R4 000 respectively. This study adopted the lowest estimate of R4 000 in keeping with the practice of maintaining conservative figures.

Unisa charges different fees according to level and degree programme. On average, an undergraduate registers for three modules per year and for each module an international student is charged a fee of R1 990 inclusive of an international levy of R330. This translates into a total cost of R5 970 for an undergraduate degree programme per year for an international student. Master's, doctoral and MBA students pay higher study fees of R7 820, R8 200 and R14 260 respectively. Unisa also charges a matriculation exemption fee of R300 and a levy of R450 for additional study material. Since this study could not determine the number of international students registered in each programme, it adopted the lower undergraduate fee of R5 970 per student per year, and not the higher fees paid by the postgraduates. On top of this, R450 for additional study materials and a R100 exemption certificate fee (if the R300 exemption certificate fee is spread over three years) were added. This brought the total estimated study fee at Unisa to R6 520 per international student per year, which was added separately to the direct expenditure effect. In arriving at this figure, the study excluded the library access fee of R45, the SAQA levy of R3 780 for postgraduate students and the R660 levy per module for non-African international students. This helps to keep the estimated results conservative, but it is highly recommended that a future study incorporate this information.

4.1.3 Return-trip to home country as source of revenue

Many international students return to their home countries during holiday periods. Since it is difficult to determine the ownership of the vehicles plying the roads, only revenue from air transport was considered in order to avoid overestimation of the expenditure impact. Some taxis and buses could be owned by foreigners. Air transport is treated differently, since even if some opt to use foreign airlines, they still pay airport tax (sometimes amounting to as much as $^2/_3$ of the ticket price). Moreover, many foreign internationals are from Africa where South African Airways is dominant in the air transport industry. Even if foreign airlines are used, these airlines have offices in South Africa where locals are employed and other expenditures, such as rent, tax and bills, are incurred as well. In brief, the leakages from air transport are minimal and can be considered together with other import leakages accounted for in the expenditure multiplier.

Among the respondents, 72 travelled at least once per year by air to their home countries. To determine the revenue from air trips this was multiplied by the median airfare rate of R5 700 (as determined from the survey results) for a return trip. This worked out to a total of R5 700 × 72 = R410 400 for the 72 respondents. The median was used because it was the lowest measure of the central tendency in this item, thus keeping the estimates conservative. This revenue was divided by the total number of respondents to obtain the average estimate of a return trip of a typical international student in South Africa, thus R410 400 ÷ 400 = R2 267.

In practice, most SADC students (who formed 69% of the respondents in this survey) do not often travel by air to and from South Africa. To exclude them, the R2 267 was further multiplied by 31% (100% minus 69%) to find a conservative estimate of air travel expenditure by an international student. This yielded R703 as the annual spending on the return trip to the source country by an international student.

4.1.4   Study permit and government revenue

The issuing and renewal of study permits is a source of revenue to the South African government. To estimate the amount of revenue the government has collected from the respondents, the total transactions (new applications and renewals) of the respondents was estimated to be 205 transactions per year. This estimation took into account the fact that sometimes respondents have to renew their permits up to four times during the period of their studies.

If this total number of transactions is multiplied by the price of renewal/issuance, R425, a total sum of R87 125 is realised. To get an average cost per student this figure is divided by the number of respondents (181). This translates into R481 if distributed over the years the student has been in South Africa. If one assumes that an average student takes three years to complete a programme, then the average yearly student expenditure on visa acquisition and renewals is about R160 (481 ÷ 3). This figure forms part of the expenses of a foreign student in South Africa.

4.2   Total expenditure determination

Total annual expenditure was determined by adding international students' direct expenditure to the indirect expenditure. To determine indirect expenditure, direct expenditure must first be established.

Table 7 contains six main categories of international students' spending from which the direct annual total expenditure per international student was calculated. The major expenditure components are living expenses, tuition fees and stationery. Although expenses related to back-home yearly travel, visiting relatives and visa applications were small, they nevertheless comprised important components of an international student's annual spending.

Table 7:   Estimated annual direct expenditure (ZAR) by residential international students in South Africa (2008)

Monthly living expenses	42 643
Up-front living expenses (medical aid)	3 912
Tuition fees	26 549
Books and stationery	4 000
Return trip to source country	703
Visiting relatives' expenses (Snowball & Antrobus 2005)	200
Visa applications and renewals	160
Total	78 167

Source: *Analysis of survey results, Snowball and Antrobus (2005)*

The figure of R78 167, which was established as the total yearly direct spending of an international student, is higher than the R40 707 (of the Rhodes study) and the R57 000 (of the NMMU study). The reasons for this discrepancy are many. Inflation in South Africa, as measured by CPI, more than doubled from 1.4% in 2004 to 11.5% in 2008. This alone cannot explain the difference, however. If the NMMU estimate increased at the rate of CPI-based inflation, it would have been R73 619 at the end of 2008.

Both the previous studies also ignored some critical international student expenditures, such as annual expenditure on books and stationery, medical aid and visa application and renewal fees

(all included here). Other components, related to international students that were probably ignored by earlier studies are the return trips to source countries and bribery (ignored in this study as well) for services obtained from public offices. These studies were also conducted in the Eastern Cape, where the cost of living is lower.

4.2.1 Direct expenditure and foreign revenue receipts

The estimate of annual expenditure per international student (R78 167) was then multiplied by the population of registered international students (38 011) in South Africa (excluding Unisa), as outlined above. This resulted in direct expenditure of R2 971 204 818 in 2008. To this figure, R166 703 360 (R6 520 × 25 568), the estimated total international student study fees at Unisa, was added. Total direct expenditure by international students in South Africa then came to R3 137 908 178.

However, not all of this direct expenditure originates from overseas. Firstly, 9% of international students obtain South African funding in the form of scholarships and bursaries. In keeping with maintaining conservative estimates, it is assumed that South African funding covers all of the expenses of these students, so 9% of the direct expenditure (R282 411 736) needs to be excluded. Secondly, the income earned by those international students employed in South Africa forms part of their direct expenditure, and although it is earned in exchange for their skills services, it is nevertheless excluded since it originates in South Africa. Since 46 of the 181 respondents had some employment, the total number of working students was estimated to be 9 660 (46 ÷ 181 × 38 011). If the number of working students is multiplied by their median annual earnings (R32 400), this income is estimated to be R312 992 234. Deducting income from South African scholarships and employment reduces direct expenditure by a total amount of R595 403 970, which can be called "funds from South Africa".

To determine the total amount that flows in as foreign revenue, funds from South Africa were deducted from the direct expenditure to obtain R2 542 504 208. This amount can also be said to represent South Africa's exports of university education. Although "funds from South Africa" do not originate from abroad, they nevertheless form part of the respondents' total direct expenditure in South Africa and therefore lead to growth of the indirect expenditure and the GDP, which would not have happened in the absence of these international students.

As established by this study, South Africa's earnings of foreign revenue of more than R2.5 billion in 2008 from the export of education is larger than the R1.7 billion a similar study at the NMMU found in 2004 (Snowball & Antrobus, 2005). Apart from the other reasons stated at the beginning of this section for the lower findings in the earlier studies, a further reason is that the number of international students has increased from about 53 000 in 2004 to approximately 62 000 in 2008.

4.2.2 Indirect expenditure

The next step is to derive the indirect expenditure from the direct expenditure. This is based on the fact that the initial spending (referred to here as direct spending) leads to induced and multiplicative expenditure by agents who benefit from the international students' expenditure. Economists have devised what is called regional economic multipliers to determine this additional expenditure. It is not the aim of this study to detail how a multiplier is derived; suffice it to say that it is generally based on and inversely related to the leakages from the economy, such as imports, taxes and savings. The value of the multiplier usually lies between 1 and 2. A similar study in the UK used a multiplier of 1.5 (Vickers & Bekhradnia, 2007). Black (1991) estimated regional multipliers for the former homelands that ranged between 1.3 and

1.7. The latest available estimates of the final demand multiplier in South Africa are for 2005. The 2005 multiplier is 1.2633 (as estimated by Quantec), and this value was used in this study to determine the indirect expenditure. This means that the direct expenditure leads to an addition of 0.2633 of its own value to the GDP. Hence, the indirect expenditure, which in this case is 0.2633 × R3 137 908 178 = R826 211 223, is added to the direct expenditure. Thus:

Total expenditure = direct expenditure + indirect expenditure = R3 964 119 401.

This means that the presence of international students in South Africa contributed almost R4 billion to South Africa's GDP in 2008. This amount is only 0.17% of South Africa's GDP in 2008, which was just over R2 274 billion according to Quantec (2009). However, there is enough capacity to expand this growth sector as has been done in other countries. To put it in perspective: the impact of international students in South Africa is smaller than South Africa's exports of animals and animal products in 2008 (R5 billion), but larger than the country's export of wood and wood products which was R3.4 billion in 2008 (Department of Trade and Industry, 2010). The impact is felt not only in the growth of the GDP, but also in other areas of the economy like growth in skills, employment, enterprise and government revenue.

In comparison to the countries that have created policies to facilitate the inflow of international students, the South African figure is dismal. For, example Australia generated a foreign revenue amount of approximately R60.4 billion (or 0.07% of its GDP) from the export of education in 2006. The UK, the second largest recipient of international students after the USA, received in excess of R100 billion (or 0.02% of GDP) in 2006 (Giles & Luxmoore, 2007).

The small shares of GDP of the developed countries reflect the relatively large size of their economies compared to the earnings from exports of higher education. The relatively higher percentage for South Africa indicates that its export of higher education is a growth sector, just like tourism, agriculture, energy, trade and transport.

5. CONCLUSION

This paper set out to determine the quantifiable expenditure impact of international students on South Africa, which it estimated as R3.1 billion per year (in the form of tuition fees, personal spending and administrative processes). Added together with its induced effects, this spending creates a growth sector contributing almost R4 billion to the country's GDP. The largest part of the direct student expenditure of around R2.5 billion flows in as foreign revenue.

Throughout, care was taken to keep the estimates conservative. The spending by Unisa students was kept low to account for the fact that not all of them enter South Africa. International students at private HEIs like Varsity College, Damelin and Midrand Graduate Institute were also not considered. In addition, estimates of book expenditures and cost of cross-border transport were probably lower than the real amount. Spending on items such as bribery was not included.

Despite the conservative approach, the estimates of this study still came out higher than those of previous studies, and the effect of inflation alone does not explain the difference. Previous studies omitted important expenditure items and were conducted in a single region (where the cost of living was found to be the lowest). The result was that the impact was underestimated, and thus would have misled policymakers. This study addressed these problems by surveying students from 25 different countries at six major residential universities across the country. It took care to avoid sample bias and ensure that previously omitted expenditure items were

included.

Not included in this paper (but the subject of a future paper) is the biggest benefit of international students – their contribution to alleviating the skills constraints in South Africa. Indications are that about 40% of international students would like to remain in South Africa after their studies, which is even more positive if one considers that the majority of them are studying in the fields in which South Africa is experiencing skills shortages.

There is, therefore, both further room and sufficient reason to encourage international student inflows to South Africa. Unfortunately, policies at both HEI and governmental levels (the subject of our next study) do not seem to recognise this. This study will provide more accurate information on which to base internationalisation policies that recognise the current and future contribution of international students.

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