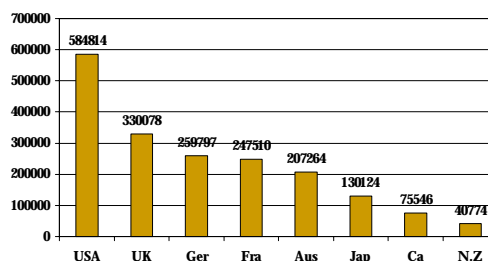


The expenditure impact of international students on South Africa

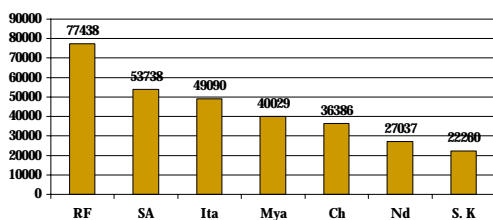
Authors: Naum Aloyo & Arnold Wentzel

Trend: Traditional destinations (Unesco 2008): 2006 international students statistics



Trend: Emerging Destinations

International students enrolments, 2006 (Unesco 2008)



In South Africa (SA)

- Large inflow from SADC and other African countries
 - A policy dilemma?
 - Legacies of the past
 - Demand of international students from Africa
- Rationalise admission of international students
 - Do they displace SA students?
 - Quotas reserved for international students
 - E.g. UJ reserves 20%, but only having 3.5% currently
 - Do they contribute positive fiscal balance to SA?
 - The object of this study

In SA cont.

- No clear policy on international students
 - But opinions of some scholars, leaders (e.g. Hall 2004, Ramphele 2002, Pandor 2002)
- Diverging findings:
 - Previous studies only regional
 - NMMU in 2004 (R57 000) (in Snowball & Antrobus 2005)
 - Rhodes in 2005 (R40 707) (Snowball & Antrobus 2006)
 - Substantial difference
 - Vital expenditure components omitted

An improved methodology

- Research 6 HEIs rather than 1 HEI
 - HEIs: UJ, UCT, Wits, UKZN, NMMU, MSA
- Mixed method survey (questionnaire)
- Some secondary info (DoE 2009, Snowball & Antrobus 2005)
- More expenditure items
- Differentiate residential universities (38 011) from Unisa (25 568)
- Consider overseas' campuses in SA

Sampling

- **Criteria: Which universities to survey?**
 - Number of international students (DoE 2007)
 - Diversity of source countries (DoE 2007)
 - Cost of survey
- **The 6 residential universities are:**
 - Home to 40% of international students
 - Together with Unisa, home to 64% of international students (DoE 2009)

Sampling Cont.

- **Acceptable sample 150-300 for a population over 10 000** (Neuman 2003)
 - In this study: 181 from residential HEIs
- **Snowball sampling**
 - Relied on network
- **Limit biases of non-random sampling**
 - Careful editing
 - Discarding suspect response

Results

- **25 different source countries**
 - Mainly from Africa, SADC
- **Most respondents from Zimbabwe, Botswana, Lesotho, Swaziland and Namibia**
 - Zimbabwe and Botswana over-sampled
 - Namibia and Lesotho under-sampled
- **Two-thirds from SADC – similar as in DoE data**

Expenditure effects

- **The population**
- **Duration of stay**
- **Direct expenditure**
- **Expenditure multiplier: indirect expenditure**
- **Total expenditure**
- **Foreign revenue**
 - Direct expenditure
 - Less SA funds

Estimating mean total cost

Item	Tuition fees	Books	Return trip	Visa	Relatives' visit	Medical aid	Living cost
Cost	26 549	4 000	703	160	200	3 912	42 643

Total Cost = R78 167

- Take into account differences (ANOVA)
- Average weighted by provincial share of students

Significant Similarities in costs: ANOVA Test Results

Item	Degree of freedom	P-value	Mean (monthly)
Phone calls	F(5,155)= 1.117	0.354	R270
Medical aid	F(5,144)= 0.531	0.753	R326
Entertainmt	F(5,139)= 0.949	0.451	R443
At 95% confidence level			

Significant differences in costs: ANOVA test results

Item	Highest mean (R)	Lowest mean (R)	P-value
Total	UCT, 5706	NMMU, 3738	0.018
Rent	UJ, 2476	NMMU 1720	0.012
Transport in SA	UCT, 1169	MSA, 345	0.034
	UCT, 1169	NMMU, 288	0.020
Food & grocery	Wits, 1216	NMMU, 640	0.034

At 95% confidence level

Expenditure determination

- **Direct expenditure = living costs + other costs**
 - Population for residential HEIs = **38 011**
 - a) Total cost at the 6 residential HEIs
R78 167 x Population = **R2.97 billion**
 - Population for Unisa = **25 568**
 - b) Study fees at Unisa
R6 520 x population at Unisa = **R167 million**
- **Total direct expenditure a+b = R3.1 billion**
- **Indirect expenditure via the expenditure multiplier**
 - = 0.3 X R3.1 b = **R941 million**
 - value of multiplier from Quantec

Total expenditure

- **Direct expenditure + indirect expenditure**
 - = **R4 billion**
 - A positive balance
- **Still a very small portion of GDP = 0.18%**
- **But impact is multiplicative:**
 - Skills, employment, entrepreneurial growth and research and cultural linkages (more positive balance)

Foreign revenue determination

- **Funds originating from SA**
 - Some 9% benefitted from scholarships/bursaries from SA sources = R282 million
 - Funds from wages in SA = R313 million
 - Total funds from SA = R595 million
- **Foreign revenue = total direct expenditure minus funds from SA = R2.54 billion**

Foreign revenue in perspective (the dti, 2009 & own results)

	Export item (R Billion)	Rank	% of total	% growth (2007-2008)
Gold	11.53	2	8.4	16.00
Motor cars	6.77	4	4.9	34.30
Coal	6.74	5	4.9	12.80
Diamonds	4.57	7	3.3	3.70
Higher education	2.54	10	1.8	-
Grapes	1.71	14	1.2	164.20
Vehicle parts	1.65	15	1.2	3.10
Wines	1.16	18	0.8	-2.20

Foreign revenue in perspective: 2006 figures (Boag, 2008 & own results)

	GDP (USD Billion)	Foreign Revenue (USD billion)	Foreign Revenue as % of GDP
USA	13 844	21.75	0.16
UK	2 137	8.58	0.40
CA	1 266	3.23	0.25
Aus	761	8.06	1.06
SA	283	0.32	0.11
N. Z	112	1.27	1.13

Concluding remarks

- Positive fiscal balance: total expenditure impact, foreign revenue, skills etc.
- Minimal opportunity cost
- Foreign revenue from higher education ranks at least 10th amongst all SA export items, but with no proper recognition
- SA amongst top 8 destinations, but with one of the least positive expenditure impacts
- Results can be improved by researching more HEIs

Discussion

The world economy is changing as knowledge supplants physical capital as the source of present (and future) wealth....As knowledge becomes more important, so does higher education,"
World Bank (2006)

Spending weighted

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

How ANOVA works (outline)

ANOVA measures two sources of variation in the data and compares their relative sizes

- variation BETWEEN groups
 - for each data value look at the difference between its group mean and the overall mean

$$(\bar{x}_i - \bar{x})^2$$

- variation WITHIN groups
 - for each data value we look at the difference between that value and the mean of its group

$$(x_{ij} - \bar{x}_i)^2$$

The Null

Assumption: Each group is approximately normal, hence

H_0 : The means of all the groups are equal.

H_a : At least one of the means is different

- Doesn't say by how much or which groups differ.
- Can follow up with "multiple comparisons"

So How big is F?

Since F is

Mean Square Between / Mean Square Within

A large value of F indicates relatively more difference between groups than within groups (evidence against H_0)

Once it is indicated that groups do not all have the same means, we can compare them two by two using the 2-sample t test

Clearest difference: Largest mean vs lowest mean