

# Unravelling the Relationship between Skilled Emigration Rates and Human Capital Formation in the Developing World

Syed Hasan Bokhari

The University of Nottingham, School of Economics, United Kingdom

*"In our world in which the generation of new knowledge, and its application to change the human condition is the engine which moves human society further away from barbarism, do we not have need to recall Africa's hundreds of thousands of intellectuals back from their places of emigration in Western Europe and North America, to rejoin those who remain still within our shores! I dream of the day when these, the African mathematicians and computer specialists in Washington and New York, the African physicists, engineers, doctors, business managers and economists, will return from London and Manchester and Paris and Brussels to add to the African pool of brain power, to enquire into and find solutions to Africa's problems and challenges, to open the African door to the world of knowledge, to elevate Africa's place within the universe of research the information of new knowledge, education and information."*  
(South African President Thabo Mbeki in his 1998 African Renaissance Speech)

This research explores the links between human capital development and international migration in developing countries. Literature reveals that this relationship is two way: development affects migration and migration affects development. However, the focus of this study is on the effects of human capital on migration. And the question being posed is: **How do skilled emigration rates respond to changes in native human capital development?**

## Introduction

The primary variable of interest, considered as an indicator of human capital development, is **the proportion of post secondary educated natives**. However, predictions are tested using various other indicators as well, such as enrolment rates and government spending on education. Differentiation is made between two groups of workers, that is, the top skilled workers (tertiary educated) and the next best group of workers (secondary educated), while investigating the responsiveness of emigration rates to human capital formation in the countries of origin. The purpose of this study is not just to draw a comparison between the two groups but also to investigate how emigration rates change in response to various human capital development indicators in developing countries and consequently, to find out whether investment in human capital is a useful policy for controlling brain drain.

## Methodology

The model is based on the approach adopted by Docquier et al. (2007) introducing a multiplicative decomposition of the brain drain into two components: degree of openness of sending countries and the schooling gap. Openness is simply the average emigration rate in the economy defined as the ratio of the total number of emigrants to the total number of natives. The second component, schooling gap, is the ratio of the proportion of skilled emigrants by the same proportion among natives. This ratio is always higher than one, indicating that emigrants are more educated than natives in all developing countries. Therefore, from the decomposition, brain drain is simply the product of the openness index and the schooling gap.

## Estimation Technique

The economics literature on international migration distinguishes many potential determinants of labor mobility which may be categorized in to the following four broad categories: country size, level of development of the sending country, socio political environment of the sending country, and geographic/cultural proximity between developing and developed countries. The regressions employed in this research used these four sets of explanatory variables that are common in the empirical literature. In a three equation system, the dependent variables were openness index, schooling gap for tertiary educated workers and schooling gap for secondary educated workers using the same set of explanatory variables.

## Data

A panel dataset was constructed for 135 developing countries (46 low income, 52 lower middle income and 37 upper middle income economies according to the World Bank Country Classification System for the years 1990 and 2000. Data for average emigration rates and schooling gaps was collected from the Docquier and Marfouk (2005) dataset.

## Results

**A simple panel regression model estimated using pooled OLS** revealed that given a one percent increase in the proportion of post secondary educated natives the schooling gap for tertiary educated workers decreases by 0.61% while for the secondary educated it decreases by 0.1475% (i.e. tertiary emigration rates are approximately 4 times more responsive). A **random effects model** also predicted a negative relationship between human capital and emigration rates and also tertiary emigration rates to be approximately 3 times more responsive than secondary emigration rates. A **pooled OLS model estimated using tertiary enrolment rates as the main human capital indicator** predicted tertiary emigration rates to be 9 times more responsive than secondary emigration rates. Using **secondary enrolment rates** as the variable of interest in a pooled OLS model predicted tertiary emigration rates to be 1.9 times more responsive than secondary emigration rates. Finally, **cross section models** estimated using data for the years 1990 and 2000 both predicted tertiary emigration rates to be approximately 4 times more responsive than secondary emigration rates.

## Findings

**Based on predictions of the estimated empirical models, a negative relationship between human capital formation and skilled emigration rates in developing countries was found. Also, it was established that the responsiveness of emigration rates to human capital formation increases as the skill level increases (that is, emigration rates for the tertiary educated workers are more prone to fall, given an increase in the proportion of educated natives in the source country as compared to the emigration rates for the secondary educated).** These findings are promising because models tested using different human capital development indicators (secondary and tertiary enrolment rates) besides the proportion of educated natives and also for different groups of interest, give consistent predictions. Across all the models, human capital formation leads to a decline in skilled emigration rates in developing countries. This means that if the governments are to adopt a policy of curtailing brain drain, then the investment in native human capital formation can be employed as an effective tool to impede the outflow of the top skilled workers from the economy. This link has attracted a lot of attention not just in developing world but also in some of the OECD countries where the inability to control migration has increased efforts on migration management, including the role of economic development at origin as a device for reducing migration pressures

Docquier et al. (2007), 'Brain Drain in Developing Countries', *The World Bank Economic Review*, Vol. 21, No.2, pp. 193-218.

Docquier and Marfouk (2005), Abdeslam. 'International migration by educational attainment – Release 1.1'.