

The problem of migration of skilled persons has increased during recent years because of many factors. Out of these factors, recent liberalization by developed countries regarding visa policies, globalization, awareness among skilled persons regarding international markets, and unavailability of sufficient services and suitable opportunities in domestic country are the main contributing factors. This exodus is triggering threat of brain drain and hence adversely impacting local growth and economic development. However, there are benefits or indirect effects of this skilled migration such as worker remittances, integration of local economy into global economy, etc. but the adverse impacts of this migration outweigh positive effects.

Since the last decade, government of Pakistan is trying to improve education levels by continuously investing in education schemes. The emphasis is on higher education through various scholarships programs and schemes of Higher Education Commission (HEC) in the fields of natural, social and behavioral sciences. These scholarship schemes include about 5000 PhD level scholarships awarded for study in technologically advanced countries (largest program in developing world) and some 3000 local PhD scholarships have been awarded. The world's largest Fulbright Scholarship program (US \$150 million) was launched with joint funding (HEC/USAID). All these schemes have a total cost of more than 14,522.35 million Pakistani Rupees.

All these efforts have been successful in increasing the number of PhD's in almost all fields. Productive use of these skilled persons can give high returns in the short run as well as in the long run. Present study aims to analyze the possible migration of new PhDs in Pakistan. These include persons who studied abroad as well as persons who attained their PhD degree locally. The study will focus on reasons and impacts of possible migration of these highly skilled persons from Pakistan to developed economies and will analyze what policy options can be used to stop this brain-drain and how to maximize the indirect (positive) effects of this migration by encouraging return migration, retention of manpower and productive utilization of remittances.

### **Objectives**

The main focus of this study will be to find out reasons and factors that contribute to the migration and possible migration of highly qualified persons from Pakistan. The possible reason might be the better facilities at the receiving end. These facilities include better working environment, job satisfaction, health facilities and other socio economic conditions that affect an individual's life. If these conditions are not satisfactory in the home country the chances of migration will be higher.

This study will also look at the outcome and impacts of the possible migration on the economy of the country that is investing huge amount of money on human capital formation. Mainly the study will closely look at:

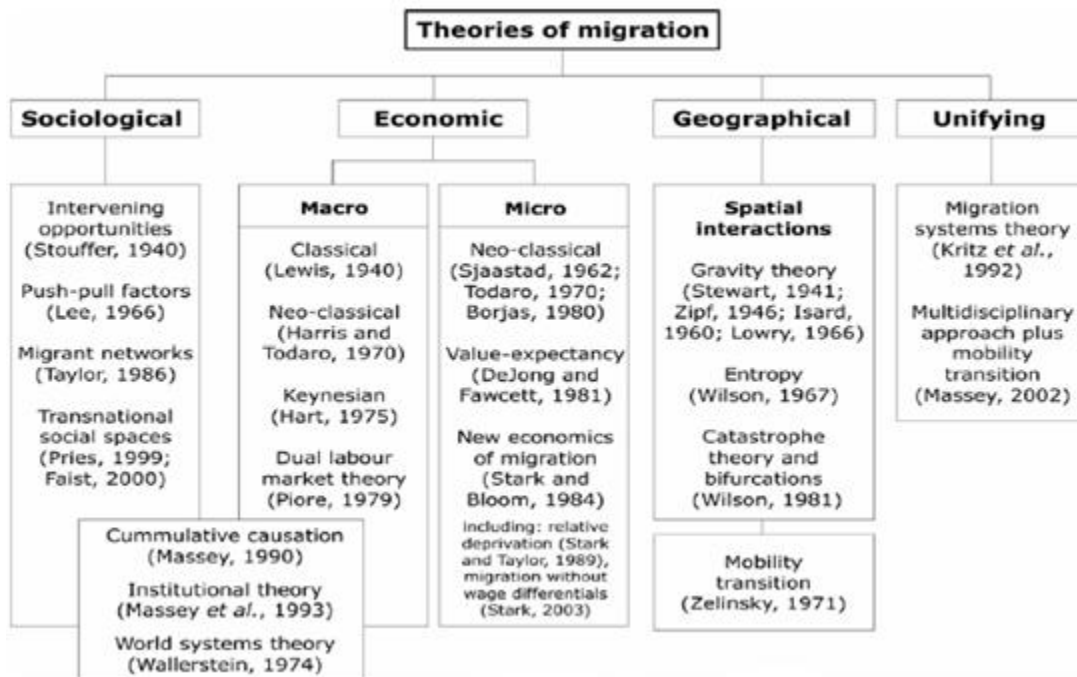
- Possible reasons of migration of highly qualified persons from Pakistan
- Possible economic and socio-economic impacts of migration of highly qualified persons on origin country

- Possible economic and socio-economic impacts of migration of highly qualified persons on receiving country

## Review of Literature

A number of theories explain various reasons for migration. A short summary of the theories based on sociological, economic, geographical and unifying reasons is presented in Figure 1. These theories indicate age, gender, education, monthly expenditures, political stability of origin and destination country, population structure of origin and destination country, health facilities at origin and foreign countries, employment opportunities at origin and destination country, and wage at origin and foreign country as the main contributing factors for migration.

**Figure 1: Theories of Migration**



Source: Bijak(2006)

## Methodology

The study will employ advance econometric techniques based on micro-data. It will try to estimate contribution of each possible factor to migration that has been discussed in the literature previously. We can write:

$$P(Mig) = f(Age, Gender, trips, exp, CY, H_D, H_F, E_D, E_F, P_D, P_F, X)$$

Where,

$P(Mig)$  = Probability of migration

$Age$  = Age of the individual

$Gender$  = Dummy variable for the gender (1 for male and 0 for female)

$trips$  = Dummy variable for foreign trips (1 if have foreign trip and 0 if don't have foreign trip)

$exp$  = experience (in the last job)

CY = Consumption expenditures to income ratio in the domestic country  
E<sub>D</sub> = Employment opportunities in domestic country  
E<sub>F</sub> = Employment opportunities in foreign country  
H<sub>D</sub> = Domestic health facilities  
H<sub>F</sub> = Health facilities in the foreign country  
P<sub>D</sub> = Political stability in the home country  
P<sub>F</sub> = Political stability in the foreign country  
X = control variables

It will try to find out how each of the above variables affects the probability of migration. For example, what are the chances of migrating abroad if the person is young, what role gender plays in determining the probability of migration, do number of foreign trips play a role in taking decision to migrate.

However, exact functional form and model will be decided after the complete data set is collected as Lee (1998) suggests that the choice of a 'proper' method should depend on the availability of good-quality data sets. Longer series of observations enable using the time series approach, while for shorter samples or less reliable data, the expert-based probabilistic scenarios are recommended. In order to synthesis these methodologies, Tuljapurkar *et al.* (2004) suggests that the new directions in demographic forecasting should include hybrid models, combining time series and the expert-based scenarios.

## Data

Data is collected from old and new PhDs from all over the Pakistan. The data collection is done using survey questionnaire. It is intended to collect data from around 500 PhDs from all over the Pakistan. Stratified sampling technique is employed to collect the data. The data set comprise information for the variables mentioned in the sections of methodology.

Note that data collection is still under process so it is hard to present any preliminary findings at this stage.

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