

## SPATIAL ORIENTATION AND EFFICIENCY OF MIGRATION IN SRI LANKA

Manori K. Weeratunga<sup>1</sup>, Irangi Samarakoon<sup>2</sup> and Lakshman Dissanayake<sup>3</sup>

**Abstract:** Migration is an important component in terms of understanding population change of a geographical area. Internal migration has been identified as a vital force in development with its characteristic of transfer of knowledge and skills through the point of destination to origin and vice versa. The main objective of the study is to identify the migration flows as well as to recognize the inter-district efficiencies of migration in Sri Lanka, which has not been examined before. Although migration flows have been identified with percentage of migrants flows in the General Report of the 2012 Population Census, inter-district of migration efficiencies have not been examined demographically with use the formula use to calculate inter-region migration efficiencies. of A meaningful way to understand mobility between regions is to calculate efficiency of migrations between a given region and the rest of the country which has been effectively and with the use of proper demographic techniques have been presented in this study. The results of the study reveal that the spatial orientation of migration (in the present study the spatial orientation is district as the unit of analysis) is towards Western Province of the country where capital city of Sri Lanka as well as Industrial zone is located. However, Vavunia, which is a war-affected district has gained inward mobility because of return migrants after the conclusion of the war in 2009. Although migration efficiency of Jaffna district is relatively high, the flow is outward by losing about 60 out of 100 people to the rest of the country. The importance lies in the recognition of spatial dynamics ( how migration behaves over defined physical space(s)) in the implementation of social and infrastructure policies as well as the labour market policies.

**Keywords:** Internal migration, Spatial orientation, Efficiencies of migration

### Introduction

Migration is recognized as an important component of population change. Migration is currently built-in to the global development framework, recognizing well-managed migration's integral role in and immense contribution to sustainable development. The Sustainable Development Goals stimulate policy planning and implementation across countries, identifying the interrelationships between migration and development and the vital contributions of migrants<sup>4</sup>. Migration provides a driving force for sustainable

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<sup>1</sup> Senior Lecturer and Head, Department of Demography, University of Colombo, No: 94, Cumaratunga Munidasa Mawatha, Colombo 03, Sri Lanka.

Email: [manori.demo@gmail.com](mailto:manori.demo@gmail.com) Tel: +94729518989

<sup>2</sup> Lecturer, Department of Demography, University of Colombo, No: 94, Cumaratunga Munidasa Mawatha, Colombo 03, Sri Lanka.

Email: [irangi@demo.cmb.ac.lk](mailto:irangi@demo.cmb.ac.lk) Tel: +94716669917

<sup>3</sup> Senior Professor of Demography (Chair), Department of Demography, University of Colombo, No: 94, Cumaratunga Munidasa Mw., Colombo 03, Sri Lanka.

Email: [l.dissanayake@demo.cmb.ac.lk](mailto:l.dissanayake@demo.cmb.ac.lk) Tel: +94710628840

<sup>4</sup> <http://unofficeny.ion.int/2030-agenda-sustainable-development>

development through the effects of globalization. It decreases unemployment and enrich human capital.

During the recent past, internal migration has gradually been accepted as a constructive force for development, because migrants tend to transfer knowledge and skills to both receiving and origin locations, improve investments and remittances, and promote economic linkages and business opportunities between countries and regions<sup>5</sup>. Sensibly accomplished migration can stimulate economic growth and innovation in destination locations, and poverty reduction in origin settings. Simultaneously, to some extent, migration can offset labour surpluses in at the origin, as well as destinations can manage their deficient labour markets. Connecting the opportunities that migration provides to sustainable development requires countries to create policy and related legal backgrounds that identify the patterns and drivers of migration, as well as the characteristics of migrants themselves.

Migration can be looked at as a bipolar phenomenon, meaning it affects two populations, the population of origin and the population of destination. This implies the analysis of the spatial relation between location of these two populations: distance, degree of dispersion over space and regional preferences are three of the most important components. Migration is one of the main components that has an effect on the changing demographics of a population. Migration in general has been defined as the crossing of a spatial boundary by one or more persons involved in a change of residence (Daw, 2018). There are models used by the scholars in explaining the phenomenon of migration and the factors involved in driving individuals out from a destination and what attracts individuals. The importance of migration is dispersed into several disciplines such as geography, sociology, economics and demography. Most often, migration has been given the slightest attention due because of difficulty in obtaining data and calculation of measures. Collection of migration data has been especially difficult in developing countries due to the lack of complex data collection methods such as population registers. In this paper, it is mainly focused on the internal migration where it could be important in understanding the regional demographics of a country.

In most of the countries summary measures of migration is limited to net migration due to the lack of the availability of data. The primary objective of the paper is to identify the highest and lowest out migration streams from each district to the other districts and to identify the inter-district efficiencies of migration in Sri Lanka. It is important to note that migration efficiency calculation includes both in-migration and out-migration flows. It is also imperative to understand inter-district out-migration behavior naturally include in-migration behavior because out-migration in one district necessarily becomes in-migration to another district. The paper also attempts to describe the importance of calculating measure beyond the net migration using the data available for Sri Lanka.

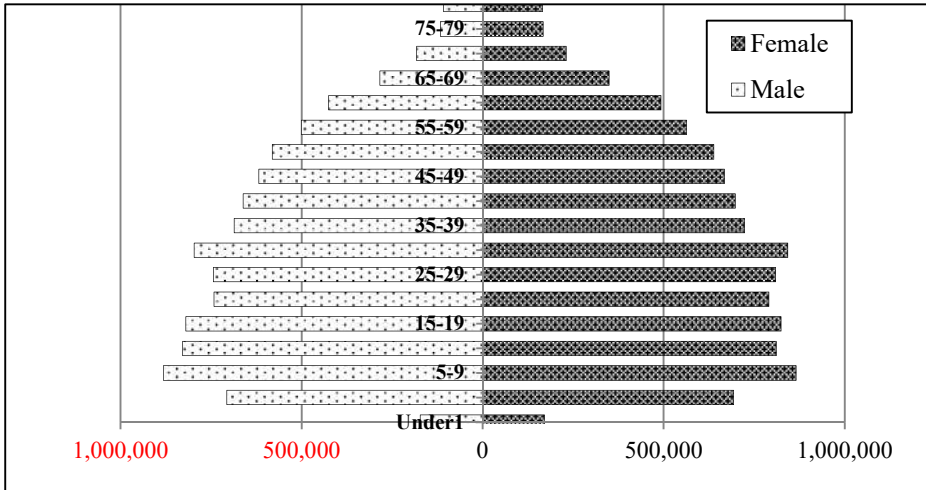
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<sup>5</sup> <https://sustainabledevelopment.un.org/content/documents/544brief15.pdf>

## Migration Pattern

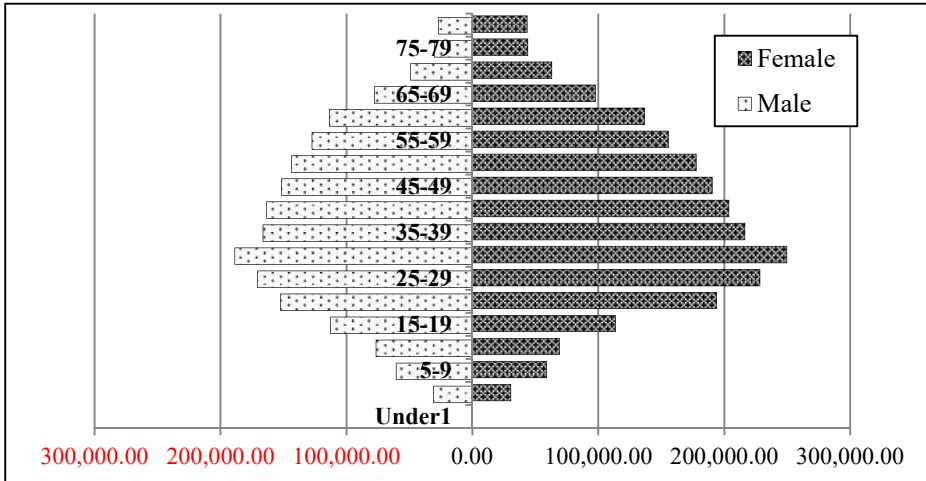
In taking a glimpse on the Sri Lankan migration patterns, according to the 2012 census conducted by the Department of Census and Statistics, population, life time migrants and non-migrants of the country is presented through the figures given below.

**Figure 1: Population in by Age and Sex, Sri Lanka, 2012**



Source: Department of Census and Statistics, 2012

**Figure 2: Migrant Population by Age and Sex, Sri Lanka, 2012**

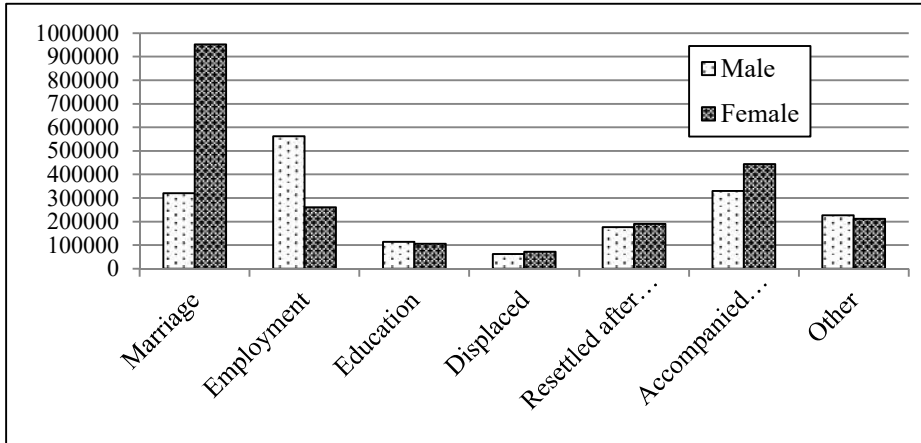


Source: Department of Census and Statistics, 2012

When the migration patterns of the country in relation to the reasons are considered as migration pattern heavily dependent on the reasons for migratory flows, the push and pull factors can be identified as marriage, employment, education, displaced, resettlement after displacement and accompanied a family member. Significant

gender variations could be identified in migration and is presented through the following graph.

**Figure 3: Reasons for Migration by Age and Sex, Sri Lanka, 2012**



Source: Department of Census and Statistics, 2012

### Data and Methods

As mentioned earlier, this paper attempts to identify the measures beyond just the net migration. The secondary data which have been used in the calculations are obtained from the Department of Census and Statistics in the 2012 Census, where the data available at Sri Lanka Statistical Information Services (LankaSIS). The Primary calculation of rates of out migration or intensity of migration (migrant-intensity is a measure of in- and out-migrant concentration) phenomenon has been done in order to identify the district with major stream from one district to another. Following equation has been used in the calculation. In this calculation place of origin is denoted through  $i$  and the place of destination is denoted through  $j$ .

$$\text{Rate of out migration} = \frac{iM_j}{P_i} \times k$$

In this equation,  $iM_j$  denotes the migration between  $i$  to  $j$ , whereas the  $P_i$  denotes the enumerated population of the  $i$  region. The constant of  $k$  has been considered as 100 in this calculation. As any demographic rate, this is an exposure rate which defines number of people who are exposure to the risk of an event, here migration is seen as the event specified in this paper.

The paper is primarily focused on migration efficiency. Although various simple ratios measure only the impact of migration, they do not measure its efficiency. Undeniably, a net migration value, as employed in these measures may cover a wide range of migration phenomena: a small migration balance may be the result of large multiway migration flows that neutralize themselves, as well as an expression of people's spatial inertia (Wunsch and Termote, 1978). By relating the result of the phenomenon, that is the migration balance, to the intensity of the phenomenon, that is the number of migrations having produced this result, we can obtain an estimate of

migration efficiency. Migration efficiency could be defined as the net migration of the area (in-migrants minus out-migrants) divided by the total number of moves whose origin or destination is that area (in-migrants plus out-migrants) ( Graves, 2012). In order to calculate the migration efficiency following equation has been used. Using the concepts of gross out- and in-migration for a community  $i$ , migration efficiency for the community is defined as:

$$\text{Migration Efficiency} = \frac{NM_i}{IM_i + OM_i} \times k$$

In this equation,  $NM_i$  refers to the net migration of the  $I$  region where as  $IM_i$  and  $OM_i$  refers to the in-migration and the out-migration of the  $I$  region. Following findings have been obtained using the above calculations for the population of Sri Lanka.

### Results and Discussion

#### *Intensity of Migration*

The calculations on the rate of out migration are done using the data on the district of previous residence and the district of current residence. Calculations are conducted for all the 25 districts in Sri Lanka (Table 1).

**Table 1: Highest and Lowest Rate of Out Migration by District, 2012**

District	Highest Rate of Out Migration		Lowest Rate of Out Migration	
Colombo	Gampaha	7.55	Mullaitivu	0.02
Gampaha	Colombo	1.81	Kilinochchi	0.00
Kalutara	Colombo	4.82	Kilinochchi	0.01
Kandy	Colombo	4.65	Kilinochchi	0.02
Matale	Kandy	5.23	Kilinochchi	0.03
NuwaraEliya	Colombo	5.70	Kilinochchi	0.02
Galle	Colombo	6.57	Kilinochchi	0.01
Matara	Colombo	8.80	Kilinochchi	0.01
Hambantota	Colombo	4.03	Kilinochchi	0.01
Jaffna	Colombo	5.21	Monaragala	0.02
Mannar	Puttalam	15.79	Monaragala	0.04
Vavuniya	Kilinochchi	54.14	Monaragala	0.06
Mullaitivu	Jaffna	32.90	Kalutara	0.10
Kilinochchi	Jaffna	35.86	Monaragala	0.03
Bataloa	Ampara	1.49	Hambantota	0.03
Ampara	Colombo	1.45	Mannar	0.02
Trincomalee	Anuradhapura	1.55	Monaragala	0.09
Kurunegala	Gampaha	3.77	Kilinochchi	0.01
Puttalam	Gampaha	3.74	Monaragala	0.04
Anuradhapura	Gampaha	2.94	Kilinochchi	0.01
Polonnaruwa	Gampaha	2.59	Kilinochchi	0.02
Badulla	Colombo	4.99	Kilinochchi	0.01
Monaragala	Badulla	3.15	Mullaitivu	0.02
Ratnapura	Colombo	4.79	Kilinochchi	0.01
Kegalle	Gampaha	4.88	Kilinochchi	0.01

Source: Authors' calculations with the use of 2012 census data

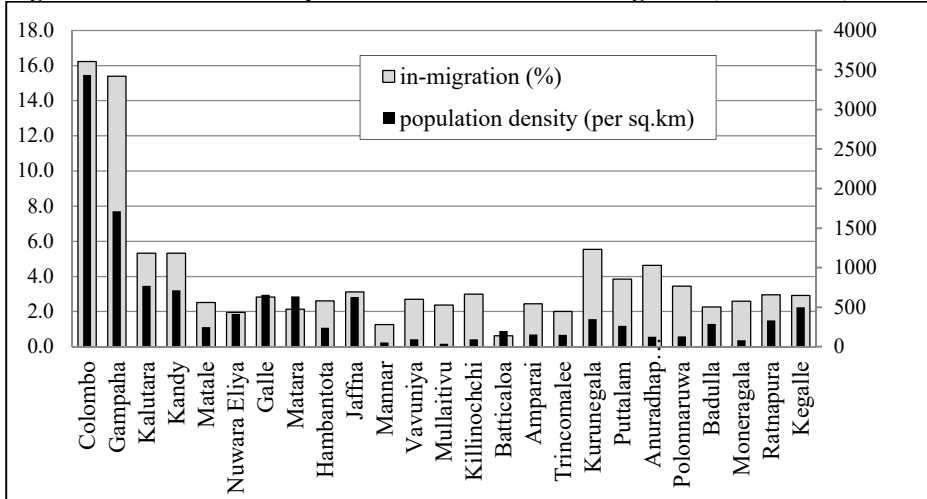
Out of the 25 districts, 11 highest out migration streams are directed towards Colombo while 6 and 2 highest out migration streams are directed towards Gampaha and Jaffna. Other districts that could be identified as Kandy, Puttalam, Kilinochchi, Ampara, Anuradhapura and Badulla. When the lowest out migration streams are considered, the majority are directed towards Kilinochchi and Monaragala whereas districts such as Mannar, Kaluthara and Hambanthota could also be identified. This could be interpreted as; for an example if we consider Colombo, from Colombo highest out migration is directed towards Gampaha while lowest is directed towards Kilinochchi. The spatial orientation of out-migration in Sri Lanka is mainly towards the Western province where the capital city is located. It is quite clear from this analysis that Sri Lanka's development policies have concentrated on places where infrastructure is already present.

Identification of the highest and lowest migration streams can be considered important related to the regional development of a country. When the out-migration flows are properly identified, it becomes easy for a government to identify the areas where the resources are required to be allocated. With the flows of out migration, if a region is on the verge of getting over populated or urbanized in an unstructured way, identification of out migration flows enable either to improve the infrastructure at the place origin or the destination depending on the reasons for migration. This recognition of out migration flows not only help the government to have a track on its demographics but also become helpful in the fields of orienting spatial distribution of its health, education and labour market policies.

Spatial distribution of population and development are exceedingly interconnected, particularly in the context of sustainability (Dissanayake, 2017a). Migration is an essential constituent of the spatial distribution of a population and is likely to continue as a key driver in the coming decades, predominantly as a component of urbanization in developing countries (Department of Economic and Social Affairs, 2001). When the relationship between migration and spatial distribution is explored, the process of urbanization becomes very important because the process of urbanization is an intrinsic dimension of economic and social development and, in consequence, both developed and developing countries are going through the process of shifting from predominantly rural to predominantly urban societies and Sri Lanka is not an exception (International Conference on Population and Development, 1994). With urbanization in Sri Lanka expected to increase from 15 percent in 2001 to 60 percent in 2030, it is highly likely to experience potential environmental side effects if proper urban planning is not in place (Dissanayake, 2017b). However, Sri Lanka is very optimistic about the initiatives taken by the Urban Development Authority which may mitigate some of the negative effects and create a sustainable urban development through innovative locally driven initiatives. Presently, a strong association is discernible between the spatial distribution and in-migration of the country when district-wise analysis is performed. Figure 4 presents the district-wise population densities and percentage distribution of in-migration. It shows that spatial distribution of population and in-migration are highly related to each other. When this relationship is examined further in statistical terms, it was found that 74 percent of the district variation of spatial distribution of the country is explained by the district variation of in-migration. Moreover, these two components demonstrate Pearson's correlation

coefficient of +.86, which shows that in-migration in Sri Lanka significantly contributes to the growth of population density throughout the country.

**Figure 4: District-Wise Population Densities and In-Migration, Sri Lanka, 2012**



Source: Authors' calculations using data obtained from Department of Census and Statistics

### *Migration Efficiency*

With the identification of migration streams through the calculations of rate of out migration and net migration, migration efficiency can be utilized in identifying the migration turnover of different stated. Migration turnover of a particular region can be indicated as how many in and out migrants are needed to generate the net flow of migration. When the total numbers of migrants are larger than the net migration, the particular region becomes less efficient in terms of migration. Migration efficiency is calculated for the districts in Sri Lanka and the absolute measures are used in order to facilitate comparisons (Table 2).

A meaningful way to understand mobility between regions is to calculate efficiency of migrations between a given region and the rest of the country. The study reveals that the highest migration efficiencies are reported in Jaffna, Gampaha, Vavuniya and Matara respectively, whereas the lowest migration efficiencies are reported for the district of Mullative. As per Table 2, highest migration efficiencies are built through both out migration flows and the in migration flows. The study suggests that while Gampaha and Vavuniya gained relatively high migration towards those districts from the rest of the country, Jaffna has lost about 53 migrants out of 100 migrants to the rest of the island. Mullaitivu seems to be the least mobile district among the entire districts in Sri Lanka as it has gained only 5 migrants out of 100 people from all other districts. These migration efficiencies can be utilized in determining the population turnover of the region. Moreover, migration efficiencies can also be used in ranking the districts where the population dynamics are likely to be changed or affected by the migration apart from the other components of the such as by fertility or mortality.

**Table 2: Migration Efficiencies Calculated by District, 2012**

District	Out migration	In migration	Net migration	Gross Migration	Migration Efficiency
Colombo	392,338	602,807	210,469	995,145	0.21
Gampaha	146,256	590,568	444,312	736,824	0.60
Kalutara	144,264	208,960	64,696	353,224	0.18
Kandy	357,426	188,097	-169,329	545,523	-0.31
Matale	116,346	92,073	-24,273	208,419	-0.12
NuwaraEliya	181,227	78,164	-103,063	259,391	-0.40
Galle	221,629	100,448	-121,181	322,077	-0.38
Matara	253,792	77,737	-176,055	331,529	-0.53
Hambantota	117,083	80,700	-36,383	197,783	-0.18
Jaffna	124,294	30,774	-93,520	155,068	-0.60
Mannar	31,815	18,856	-12,959	50,671	-0.26
Vavuniya	23,366	76,057	52,691	99,423	0.53
Mullaitivu	30,282	33,417	3,135	63,699	0.05
Kilinochchi	26,366	38,169	11,803	64,535	0.18
Bataloa	32,375	22,852	-9,523	55,227	-0.17
Ampara	54,703	86,148	31,445	140,851	0.22
Trincomalee	41,941	53,075	11,134	95,016	0.12
Kurunegala	246,554	194,252	-52,302	440,806	-0.12
Puttalam	80,975	134,112	53,137	215,087	0.25
Anuradhapura	111,308	170,164	58,856	281,472	0.21
Polonnaruwa	53,772	125,445	71,673	179,217	0.40
Badulla	186,512	86,051	-100,461	272,563	-0.37
Monaragala	63,341	97,114	33,773	160,455	0.21
Ratnapura	168,241	114,697	-53,544	282,938	-0.19
Kegalle	198,586	104,055	-94,531	302,641	-0.31

Source: Authors' calculations from various data sources from the Department of Census and Statistics

## Conclusion

Migration is one of the main components that could have an impact on the changing population dynamics of a country as well as a particular region. Through this paper it has been tried to identify the other summary measures of migration such as rates of out migration and migration efficiencies. Through these measures other than identifying the net migration for a region, it was shown that migration efficiencies can be used to rank the regions according to the migration efficiencies. Furthermore, a proper knowledge on spatial distribution of population and its dynamisms is essential for policy makers to introduce socio-economic and infrastructural oriented policy interventions. The interdisciplinary character and the shifting regional impact of demographic change advocate that it is an appropriate priority for regional policy interventions. Spatial distribution can be looked at from a labour market perspective by linking territorial differentiation in economic activity rates, issues of labour supply and the provisions of skills. Demographic processes can also have important implications for the spatial planning components of regional policy. The provision of social infrastructure and technical infrastructure are usually a policy competence of



regional levels and thus needs to be tailored to respond to the differentiated territorial impact of demographic change. There is a possibility that demographic changes can create tensions amongst different ethnic groups and this can have a territorial dimension where different populations are concentrated in particular areas. Therefore, proper understanding of spatial distribution is an important issue for contemporary regional development policy.

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