The role of applied demography for proactive development decision-making in Sri Lanka

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Abstract

Over the past two decades, the demographic literature in Sri Lanka has widely been focused on demographic transition and related implications. Age -sex structure transition, demographic dividend and underutilization of human resources have been debated topics among researchers and policy makers. The knowledge of current and future population dynamics and its applications on development decision making is vital to achieve 2030 Sustainable Development Agenda. Therefore, this paper discusses the significance of applied demographic perspectives in micro level decisionmaking in Sri Lanka. The analysis was based on desk review and secondary data. The analysis indicated that applied demographic analysis could be played a considerable role while incorporating demographic perspectives in development, especially, public and business decision making in Sri Lanka.

Keywords: Applied demography, business decision making, policy planning

Introduction

The demography is related to every facet of human life in some way or another. Today the world population is about 7.7 billion and more than three fourth of them live in developing countries. Global attention has been focused on achieving the sustainable development goals (SDGs) by 2030 to ensure sustainable and better quality of life for all. The knowledge of population dynamics and its causes and consequences at global, national as well as local levels is vital to achieve SDGs and address related policy implications. Particularly, an assessment of the changing demographics of an area including the population size, population growth or decline, population components or processes, population distribution, population structure and characteristics is essential for policy makers to make effective policies. Sri Lanka is well known in the world demographic literature as one of the countries that has experienced rapid demographic transition during the second half of 20th century. It is now a Lower Middle-Income country with a GDP per capita of USD 4,073 (2017). The current population of the country is about 21 million with an annual growth rate of 0.78 percent and it is projected to increase approximately 23 million by 2032 (Dissanayake, 2016; De Silva & De Silva, 2015). The age structure transition during past decades produced a first demographic dividend and the working age population (15-59 years, 62.4 %) has shown larger than the proportion of the dependents (age <15 years and 60 years and above). This demographic bonus is expected to remain until 2032 and which is conducive for economic development of the country (Abeykoon, 2018). However, there are several gaps to be addressed at both national and local levels in order to utilize demographic bonus effectively. In this context, applied demographic analysis could be played a considerable role while incorporating demographic perspectives in development decision making in Sri Lanka.

Demographic changes are vital for public - private organizations, social institutions and business firms in addressing current and potential needs of the population. They require practical demographic knowledge to determine appropriate actions and to achieve development outcomes. Applied demography is one of the important sub-fields of demography, which concerns the applications of demographic data, methods and perspectives to address practical problem of government, business and other organizations (Swanson & Siegel, 2004). In developed contexts, it is widely used as a tool of decision making and implementation of policies for the benefit of people (Swanson & Siegel, 2004; Swanson, Burch, & Tedrow, 1996; Kintner & Pol, 1996). However, in many developing countries

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including Sri Lanka, the significance of applied demography in decision making has not yet been adequately recognized. Therefore, it is timely important to discuss how demographic dynamics influence on development decision making and how the application of demographic knowledge and methods are useful in local level or regional development planning in Sri Lanka.

Objectives

The objectives of this paper are to discuss the importance of applied demography in micro level development perspectives and to make aware policy makers on how applied demographic analysis could be used in effective public -private and specially, business management and administrative decision making in Sri Lanka.

Data and methods

The analysis was based on selected empirical literature and secondary sources of data. The systematic desk review and literature analysis focused on four key aspects such as; a) identifying basic demography versus applied demography; b) Sources data available in Sri Lanka; and c) regional variations in demographic dynamics in Sri Lanka; and d) discuss applied demographic perspective in micro level development and business decision making in Sri Lanka.

Results and discussion

Basic demography versus applied demography

Demography is the scientific study of human population which focuses on the study of aspects such as population size, geographic distribution, age-sex structure, composition, population dynamics and its components including fertility, mortality and migration, and socioeconomic determinants and consequences of population change (Siegel and Swanson, 2004; Siegel, 2008). The basic demography comprises of two broad perspectives: formal demography and substantive demography. The formal demography has a close connection to the statistical and mathematical sciences while the substantive demography or socioeconomic demography has a close connection to the social sciences (Siegel and Swanson, 2004). According to Pol (1997) the model of applied demography for small areas was first used by Bogue in late 1950s and it was initially used in general planning in the areas of transpotation and facilities, urban and rural infrastructure development, and market analysis. However, applied demography has gained recognition as a sub- field of demography since late 1970s and it has been evolved mainly due to the work of a team of applied demographers at the Population Association of America (PAA), and international conferences on applied demography held at Bowling Green State University (Swanson et al., 1996; Pol, 1997). According to Siegel and Swanson (2004),

> *"Basic demographers and applied demographers share a common basic training in the concepts, methods and materials of demography, so that they are able to communicate with one another without difficulty in spite of their difference in orrentation" (Siegel and Swanson, 2004:2).*

The first formal definition for applied demography was given by Rives and Serow (1984) and they defined applied demography as

> *"… branch of the discipline (demography) that is directed towards the production, dissemination, and analysis of demographic and closely related information for quite specific purposes of planning and reporting….is more concerned with the measurement and interpretation of current and prospective population change..."* (Rives and Serow 1984:10 cited <u>in</u> Swanson *et al.,* 1996).

Table 1 summarizes five dimensions that basic demography is differentiated from applied demography based on the definition of Murdok & Ellis (1991).

Table 1: Dimensions that can be distinguished basic demography from applied demography

Dimension	Basic demography	Applied Demography
Scientific goal	Explanation	Prediction
Time referent	Past	Present and future
Geographic focus	International or national	Small areas
Purpose of the analysis	Advance of scientific knowledge/ knowledge of causes	Application of knowledge to theoretical determine the consequences
Intended use of analytic results	Advance of knowledge & sharing with the scientific community among non-demographers and general public	To inform decision making knowledge

Source: Based on Murdock & Ellis (1991:6) cited in Swanson *et al.,* 1996

It is clear that applied demographic analyses are more concerned with prediction than explanation, present and future than past, small geographical units than national or international, and problems driven than theory -directed body of knowledge.

Based on the definition of Murdok & Ellis (1991), Swanson et al., (1996) emphasized applied demography as a decision making science and provided inclusive definition.

> *"The study of population size, distribution, and composition and of the processes of fertility, mortality, and migration in a specified study area or areas with emphases on gaining knowledge of the consequences and concomitants of demographic change to guide decision making related to the planning, development, and /or distribution of public-or private-sector goods and services for current and future use in the study area or areas" (Swanson et al., 1996: 407-408).*

Many researchers have stated that applied demographers use demographic knowledge to draw on available data to address practical problems which are interest to parties outside the field of demography especially, business and government administration (Morrison, 2002; Siegel and Swanson et al., 1996; Siegel, 2002).

According to Weinstein and Pillai (2016) applied demographers have to engage with clients and face four implications namely, a) their clients to represent small groups, communities and organizations or small populations; b) they tend to solve specific client-based problems; c) they tend to focus on planning for a sustainable communities; and d) they are committed to manipulate demographic processes that preserve and promote human rights, human dignity and social justice (Weinstein and Pillai, 2016, p.364).

These literature evident that applied demography is vital for non-demographers as it is concerned with the practical orientation in demographic analysis that are needed by government, business, other organizations or different communities to assist them in making informed effective decisions. Particularly, micro level government administration needs such analysis for planning and maximum allocation of its limited resources to achieve better results. For an example, local government institutions such as Municipal Coulncils, Urban Councils and Pradeshiya Sabha need to identify their

population characteristics to provide effective services to their people. Similarly, business management administration may requires analysis of problems and apply demography to shape future development and investment decisions on time and resources. Although a number of national level population projections have been made for Sri Lanka, there is a dearth of population estimates or projections done to address regional level or micro level needs.

Sources of data available in Sri Lanka

The principal sources of data for applied demography are from secondary sources. In Sri Lanka, there are several sources of data available that could be used in applied demographic analysis. The main data producer is the Department of Census and Statistics which conducts national censuses and surveys such as Population and Housing Censuses, Labour Force surveys (LFS), Household Income and Expenditure Surveys (HIES), Demographic and Health Surveys (DHS) and many more timely useful censuses and surveys, for examples, Industrial Census, School Census, Time Use survey, Labour Demand Survey, Self-reported Health Survey etc. are conducted depending on the data needs of the country. In addition, the Registrar General's Department maintains the vital registration system in Sri Lanka and it collects information on births, deaths, and marriages since 1867. Civil registration activities have been decentralized up to all 332 Divisional Secretariat level. Furthermore, Department of Immigration and Emigration, Foreign Employment Bureau are key institutions to provide migration related data. Moreover, other administrative records of various government departments including Department of Registration of Persons, Electoral Registers, Department of Motor Traffic, etc. and other important information collected by local government institutions and Grama Niladhari levels are also important in making subnational level estimates. The limitation of most of the surveys data is they provide disaggregated data at district level, however data for other small geographical or administrative areas are not available. In addition, a large volume of data 'big data' or 'real time data', structured or unstructured data, that are available at many public- private business organizations are useful for mining and analyzing for business gains and development in the fourth era of industrialization.

Regional variations in demographic dynamics

Sri Lanka has made a significant improvement in its socio-demographic and human development indicators over the past decades. The economy is transitioning from a rural -base agricultural economy towards a manufacturing and services and the country has become Lower Middle- Income country. However, regional disparities exist in demographic dynamics could be observed and it is shown in population pyramids given below and in Table 2.

Source: Based on population census data 2012

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District	Crude Birth Rate (Per 1000)	Crude Death Rate (Per 1000)	Natural Increase (Percent)	Infant mortality Rate (1,000 live births)	Maternal Mortality Rate (100,000 live births)	Under 5 yrs. Mortality (1,000 live births)
Sri Lanka	**15.6**	**6.2**	**0.94**	**8.3**	**26.8**	**9.8**
Ampara	20.5	4.6	1.59	2.0	14.2	3.0
Trincomalee	20.2	4.4	1.58	1.9	-	3.2
Killinochvhi	19.5	3.6	1.59	7.2	-	10.1
Hambantota	19.3	5.3	1.40	3.1	28.4	4.2
Mannar	18.5	3.9	1.46	1.1	57.5	3.4
PuttLm	17.6	5.5	1.21	3.5	32.5	4.5
Monaragala	17.5	4.9	1.26	3.1	27.8	4.0
Anuradhapura	17.1	5.1	1.20	7.4	53.9	8.6
Nuwaraeliya	17.0	6.1	1.09	8.5	26.3	9.2
Batticaloa	16.9	5.6	1.13	12.1	76.2	13.6
Matale	16.9	6.1	1.08	8.3	19.7	9.1
Polonnaruwa	16.8	5.1	1.17	8.4	53.2	9.4
Badulla	16.8	6.2	1.06	7.2	35.8	8.0
Kandy	16.4	6.8	0.96	13.3	58.3	14.6
Vavuniya	16.1	4.2	1.19	8.2	24.1	11.6
Rathnapura	15.9	6.1	0.98	4.6	19.7	5.3
Galle	15.9	7.1	0.88	6.9	10.2	9.0
Kurunegala	15.2	6.3	0.89	12.5	31.8	14.0
Kegalle	14.1	6.8	0.73	5.8	19.5	6.5
Jaffna	14.1	7.3	0.68	13.3	30.4	15.6
Colombo	14.0	7.1	0.69	13.7	12.5	16.4
Matara	13.9	6.3	0.76	5.0	23.6	6.0
Kalutara	13.3	6.5	0.68	4.9	12.0	5.8
Gampaha	12.8	6.2	0.66	6.0	11.3	6.5
Mullativu	10.5	3.8	0.67	9.8	-	26.1

Source: Registrar General Department (2018) , *Note: CBR & CDR based on 2012, IMR, MMR & <5 mortality based on 2013*

The above age-sex structures in 4 different districts in Sri Lanka based on population census data, 2012 show the regional disparities in population dynamics. The age sex-structure of each district population has important socio-economic implication which cannot be reflected in national level age sexstructure. Consideration in sub national level population dynamics of population age- sex structure are important in socio-economic planning for sustainable communities.

Conclusion

In Sri Lanka, the current and future population dynamics indicate that age structure will shift from a young age population to an old aged population with increasing elderly dependents. This could become a considerable implication on working age population, human capital development, resources planning and business sector development. In this context, use of applied demography skills are necessary for shaping development decision making in all aspects. At present there are several gaps exist in the sub-national level development and are need to be given attention without further delay. Applied demographic analysts should more focus on provincial or district or divisional secretariat level analysis incorporating sub-national level and regional needs and disparities in human capital development, underutilization of labour, especially, female labour, health vulnerabilities of the populations, saving and investment, social welfare and infrastructure development in order to facilitate proactive public - private and business decision making in Sri Lanka. It has been observed that applied demographic analysts play a significant role in businesses development and state level decision making in the United States. Population Association of America shares applied demographers' work and developments through its bi-annual Newsletter, ' Applied Demography' which is supported by Committee on Applied demography, Business Demography Group and the State and Local Demography Group (http://www.populationassociation.org/publications/applieddemography/). The existing data collection and management systems including population and housing census, vital registration system, national surveys and other administrative records are useful for making subnational level estimates and evidence based micro level decision-making.

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