

THE EVOLVING LANDSCAPE OF UNIVERSITY EDUCATION IN SRI LANKA

Sri Lanka Journal of
Economic Research
Volume 5(2) March 2018
SLJER.05.02.01
pp.3 - 19
Sri Lanka Forum of
University Economists

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Abstract

This paper analyzes the Sri Lankan higher education sector and discusses policy options for future higher education development. The analysis covers the following areas: access and participation, higher education quality, economic relevance, and research and innovation. The paper shows that higher education access and participation has expanded substantially in the country over the last twenty years. However, this expansion has been less than the rapid increase in higher education enrollment seen worldwide during this period. Higher education quality has been an important area for policy makers. Over the past decade or so, two landmark policies have been implemented to promote higher education quality. A quality assurance system has been developed and implemented. Also, an education qualification framework, containing several levels of higher education, has been developed and is being rolled out. The paper discusses several aspects of the relationship between higher education and economic development. The rates of return to higher education are consistently high, across a variety of studies. Higher education also has a strong positive association with economic welfare. Another benefit of higher education, which is assuming prominence in current policy circles, is the positive relationship with female labor force participation. Finally, the paper shows that research and innovation in Sri Lanka are at an early stage of development, but will be extremely important for the future development of the higher education sector.

Key Words: Higher Education, Economic Benefits, Social Welfare, Research, Innovation

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INTRODUCTION

Policy makers, academics and development practitioners are increasingly aware of the economic and social benefits of higher education (McMahon 2009; Valero and Reenen 2016). The economic advantages for countries include broader and deeper human capital accumulation and faster economic growth. Higher education also produces the national capabilities required for technology transfer and technology development (Kruss *et al* 2017). The economic benefits for individuals include better employment prospects, enhanced earnings, and increased social mobility. The rates of return to higher education have been rising around the world in recent decades as economic production has become increasingly knowledge-intensive and technology-intensive (Montenegro and Patrinos 2014).

Higher education generates public benefits too (Hazelkorn and Gibson 2017). Among individuals, higher education strengthens the core values needed for responsible citizenship and concern for communities and families. Higher education also increases health levels and life expectancy. Analyses of higher education outcomes identify numerous further public benefits, including better democracy, greater political stability, lower crime, and reduced state welfare and prison costs (Hill *et al* (2005); McMahon 2009). These benefits represent a substantial social return and are extremely important for economic, social and cultural development.

The current paper² analyses recent developments in higher education in Sri Lanka, especially university education, in the context of several themes that have become increasingly important among higher education policy makers³. These themes are: (a) the growth of higher education access and participation; (b) the challenge of higher education quality and economic relevance; and (c) developments in research and innovation. Under each theme the paper also discusses potential paths for future higher education development.

ACCESS AND PARTICIPATION IN HIGHER EDUCATION

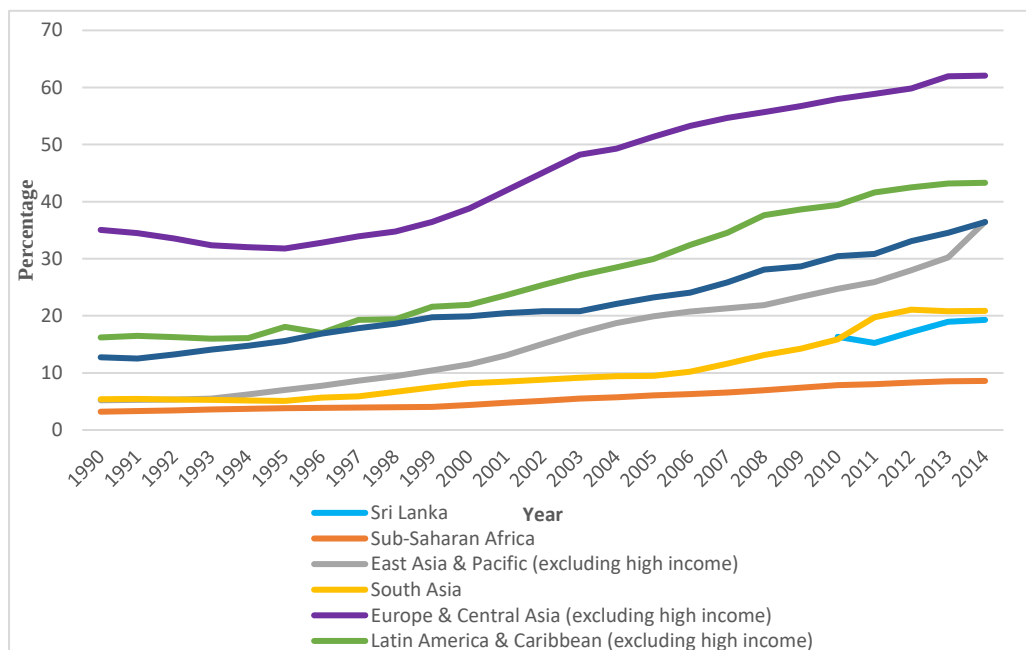
Higher education enrollment has rapidly expanded world-wide over the last twenty-five years (Figure 1). During the twenty-first century alone the number of students enrolled in higher education institutions has more than doubled from 100 million in 2000 to around 207 million in 2014 (Owens 2017). This expansion has been experienced in all regions of the world (Altbach 2015). Over about the past twenty years the gross higher education enrollment (GER) ratio in the middle-income countries of Europe and Central Asia has risen sharply from 32 percent in 1994 to 62

² This article is an expanded version of a paper presented at the Conference of the Vice-Chancellors and Directors in October, 2017.

³ All views expressed in this paper are those of the author and should not be attributed to the World Bank.

percent in 2014. Over the same period the higher education GER in East Asia increased from 6 percent to 36 percent. In South Asia, the higher education GER rose from 5 percent in 1994 to 21 percent in 2014. Sri Lanka experienced a similarly rapid expansion of higher education enrollment, with the GER increasing from about 5 percent in 1994 to 19 percent in 2014⁴. The rapid increase in enrollment in Sri Lanka, as in the rest of the world, can be attributed to a combination of factors such as rising demand from students, growth of the public sector higher education system, and increasing private sector financing and provision of higher education (Aturupane *et al* 2009; Aturupane 2016).

Figure 1. The World-Wide Expansion of Higher Education Enrollment: 1990-2014.



Source: World Bank Education Statistics.

Strong growth in university enrollment has been experienced at both undergraduate and postgraduate levels. Undergraduate intake in 1995 was 9,000 students⁵. By 2016 undergraduate intake had risen to 29,000 students. The annual output of graduates increased from 4,200 in 1995 to 28,800 in 2016. The annual output of postgraduates rose from 1,000 in 1995 to 7,600 in 2016. This expansion of the university sector was facilitated by a sharp increase in the number of universities and faculties and higher education institutes. For instance, in 1990 there were only 9 universities, 32 faculties and 8 institutes in the university sector. By 2016 this number had expanded to 15

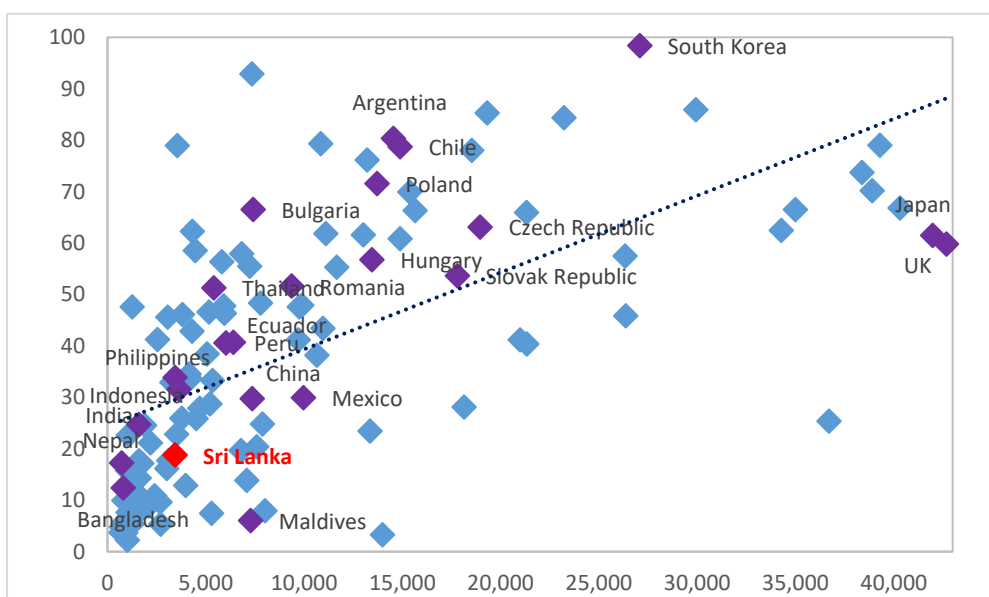
⁴ The statistics quoted in this paragraph are taken from the World Bank's Edstats database.

⁵ The numbers quoted in this paragraph are drawn from the UGC's statistics.

universities, 93 faculties and 18 institutes. The number of university academics rose from 2,000 in 1990 to over 6,200 in 2016.

Despite this pattern of growth higher education enrollment is relatively modest in Sri Lanka (Figure 2). Higher education enrollment is below the average for lower-middle income countries (LMICs) and upper-middle income countries (UMICs) (Dundar *et al* 2017). It is also below the level predicted for a country at Sri Lanka's level of national income (Aturupane 2016). There is strong unmet demand for higher education, and pressure to expand both the public and private higher education systems. The latter is facilitated by high willingness to pay for education in Sri Lanka, as has been known for a long time (Aturupane 1999a⁶). The demand for education is also likely to rise sharply as household incomes increase. Further, as the government implements its new policy to enable all students up to age 18 to complete either schooling or training, the pool of secondary school completers will increase. This can lead to greater demand for higher education over time.

Figure 2. Higher Education Enrolment in International Perspective: 2012-2014



Source: World Bank Education Statistics. The data are for 2014 or nearest year.

THE QUALITY OF HIGHER EDUCATION

Rapid enrollment expansion can exert downward pressure on quality. Policy makers have been aware that the increase in enrollment raises quality related challenges. In

⁶ Aturupane 1999 mainly analyzes the willingness to pay for general education. However, this high willingness to pay also extends to higher education, as seen from the rapid growth of non-state higher education in the country over the last two decades.

consequence, they have implemented or commenced several policy initiatives to enhance the quality of higher education.

Quality Assurance

A policy initiative that has been relatively successful is the development of a quality assurance system. When quality assurance was first introduced by the University Grants Commission (UGC) in the early years of the twenty-first century it was met with some concern among universities, which saw external quality assurance as a form of interference in their academic autonomy. However, over the years, universities have come to understand and appreciate the usefulness of the quality assurance process. This is seen from the fact that the UGC Quality Assurance and Accreditation Council (QAAC) now implements a sequence of institutional and program reviews in universities, based on self-assessments by the relevant universities and study programs, followed by external reviews (Gunewardena 2017). The usefulness and relevance of these quality assurance reviews is expected to increase over time, when the institutional framework for quality assurance is strengthened within universities through the development of the Internal Quality Assurance Units, and universities become more sophisticated in using the findings of these reviews for their strategic planning and quality improvement activities.

Sri Lanka Qualification Framework

The Sri Lanka Qualification Framework (SLQF) has been developed. This SLQF maps horizontal and vertical pathways through the entire education and training system covering general education, vocational training and technical education, and higher education. The SLQF is being implemented in the university system, with study programs being asked to map themselves within the SLQF framework. Understanding of the nature, contents and purpose of the SLQF is at an early stage among academics, but is growing over time. The main challenge for the efficient implementation of the SLQF is the creation of an agency which can oversee its work. The government is currently in the process of establishing an autonomous Quality Assurance and Accreditation Council which will contain an SLQF Division. This is a key policy initiative needed for the future development of the higher education sector.

Postgraduate Education

The quality of many postgraduate education programs in universities is a challenge. Especially, the extension course postgraduate programs offered during evenings and weekends are a major issue from a quality perspective. Students who enroll in these programs are usually full-time working students, who have inadequate time for a rigorous Masters course or for Doctoral studies. Anecdotal evidence and casual empiricism suggests that many extension course programs are set at a low academic level, well below that needed for the same postgraduate qualification at a good

university in a middle-income or high-income country. Sometimes, the extension course postgraduate degree may even be below the level of the undergraduate special degree in the same university. This is a serious problem that higher education policy makers need to address urgently.

THE ECONOMIC RELEVANCE OF HIGHER EDUCATION

Focusing on the Employability of Graduates

Graduate unemployment and under-employment has been a long-standing challenge (ILO 1971; Rodrigo *et al* 1987; Aturupane 1996a, 1999b; Jayaweera and Sanmugam 2002; Vodopivec and Withanachchi 2010; Dundar *et al* 2014). Over the years there was resistance from university academics to focus explicitly on socio-emotional skills needed for graduates to seek, attain and remain in high quality private sector jobs. However, during the past five years or so this resistance has gradually reduced. There is greater awareness and acceptance, especially among higher education policy makers and at the level of university Vice-Chancellors, that blending high quality academic programs with the promotion of socio-emotional skills is of central importance for the future development of the university system. This can partly be attributed to growing worldwide awareness of the importance of socio-emotional skills for labor market performance, including employment (Heckman and Kautz 2012; Guerra *et al* 2014; Aturupane and Shojo 2016). In addition, society and the academic community have become more sophisticated in their understanding of 'free education', realizing that the tax payer funds state universities, and that society is then entitled to a return on investment in the form of human capital that contributes to economic development.

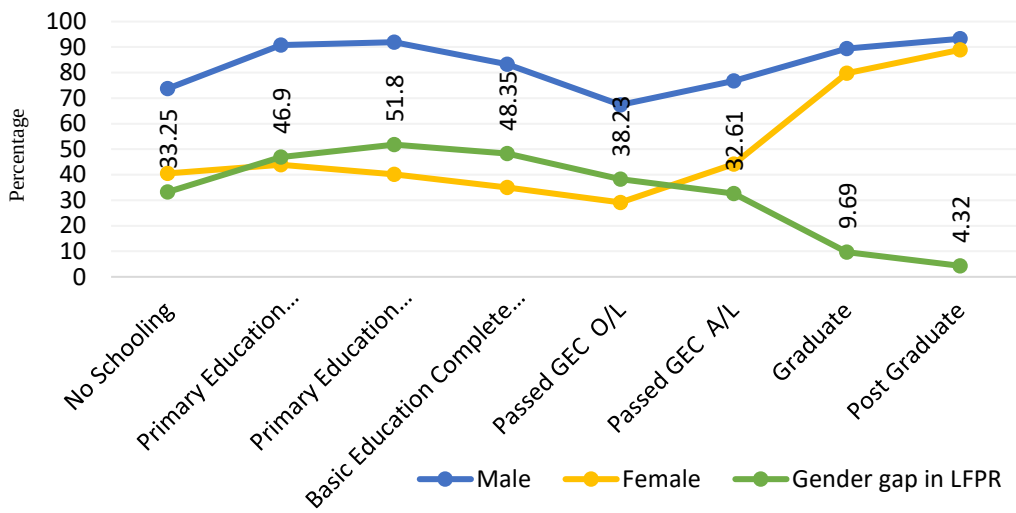
This will require, especially in many Humanities, Education, Management and Social Science (HEMS) degree programs, important improvements in curricula, learner-centered teaching, and assessment methods facilitating outcome-based education. Enabling academics to implement modern pedagogy and andragogy to improve the academic quality and socio-emotional skills of graduates will be of central importance for future development.

Labor Force Participation

Low female labor force participation has been a long-standing challenge in Sri Lanka (Gunewardena 2010; Gunatilaka 2013, 2016; Solotaroff *et al* 2017). While female labor force participation is less of a problem for graduates than for less educated women, there are still nearly 10 percent of graduate women and 4 percent of postgraduate qualified women who are not participating in the labor force (Figure 3). Given that women account for over 60 percent of university enrollment, this is an important challenge. Further, the demographic pattern is such that the country is facing an aging population (Sinha 2012; Dissanayake 2016). The share of the working age population of 15 to 59 years of age will decline from 62 percent to 59 percent

between 2012 and 2017, while the proportion of the population aged 60 years and above will rise from 15 percent to 22 percent over the same period. In such a context, it will be extremely important to increase the labor force participation of women, including educated women, to enable the labor supply to grow.

Figure 3. Labor Force Participation by Education Level and Gender, 2015.



Source: Solotaroff et al 2017. Getting to Work: Unlocking Women's Potential in Sri Lanka's Labor Force.

Education and Earnings

Education is closely associated with earnings in Sri Lanka (Ranasinghe 2008; Himaz and Aturupane 2016). The earnings of both men and women increase continually as their levels of education rise. The strongest association is at graduate and postgraduate levels, as seen from the regression coefficients of the earnings functions of male and female workers (Table 1). This pattern of a positive relationship between education and earnings has been well documented in economic literature over a long period (Aturupane 1996b; Gunewardena *et al* 2008; Aturupane 2017).

Table 1. Earnings Functions, Least Squares Estimates, 2015

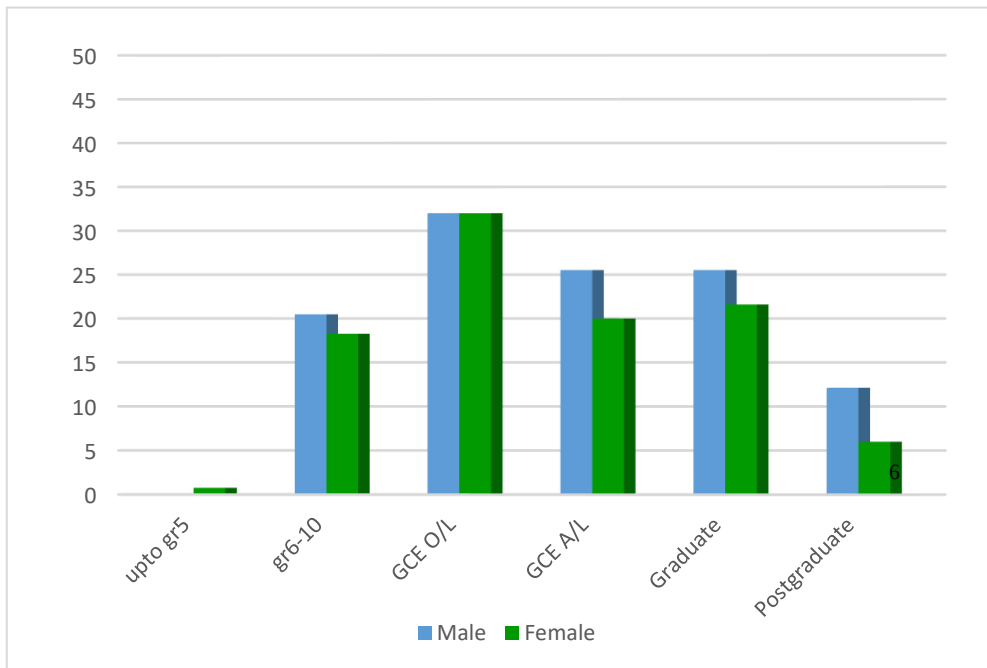
Variable	OVERALL		MALE		FEMALE	
	Coefficient	T Statistic	Coefficient	T Statistic	Coefficient	T Statistic
Constant	6.371	75.47	6.304	54.92	6.65	52.20

Primary education (Grade 1-5)	0.054	0.700	0.002	0.020	0.03	0.30
Junior secondary education (Grade 6-10)	0.846	11.22	0.821	7.89	0.76	6.87
GCE OL	1.981	25.17	1.952	18.11	1.87	15.89
GCE AL	2.568	32.52	2.590	23.62	2.37	20.54
Graduate	3.158	36.27	3.228	25.85	2.91	23.43
Postgraduate	3.397	31.20	3.531	23.08	3.06	19.73
Experience	0.030	11.460	0.034	10.24	0.02	5.98
Experience squared	-0.001	-11.870	-0.001	-9.59	0.00	-8.05
Urban Sector (Rural sector = 0)	0.355	12.52	0.359	10.11	0.34	7.27
Weekly hours of work	0.017	26.97	0.017	21.66	0.02	15.69

Source: Econometric analysis of the Labor Force Survey of the Department of Census and Statistics, 2015.

Rates of Return to Education

Rates of return to education in Sri Lanka favour secondary and higher education (Figure 4). University graduates earn generous returns to investment in education. The information in Figure 4 shows that the rate of return to university education is 26 percent for male graduates and 22 percent for female graduates. The rate of return to postgraduate educated male graduates is 12 percent, while the rate of return for postgraduate educated female graduates is 6 percent. The pattern of returns to education between men and women varies over time, favoring female graduates in some years and male graduates in other years (Aturupane 1997, 1999b; Gunewardena *et al* 2008; Aturupane 2009b). Over time, as the economy develops and production processes become increasingly knowledge intensive, returns to higher education are likely to increase.

Figure 4. Rates of Return to Education, by Gender, 2015

Source: Derived from the Earnings Functions shown in Table 1 above

Education and Economic Welfare

Education and economic welfare are strongly and positively associated in Sri Lanka. The regression coefficients for all levels of education, among both male and female headed households, are positive and statistically significant (Table 2). The magnitudes of the regression coefficients increase as the education levels of the household heads rise. Households with primary educated heads enjoy higher welfare than households whose heads are uneducated. Households with secondary educated heads enjoy greater welfare than households whose heads are only primary educated. Households with tertiary educated heads enjoy higher welfare than households whose heads are secondary educated. Overall, households enjoy the greatest welfare benefit when the head of household has higher education qualifications.

Table 2. Factors Associated with Economic Welfare, 2012/13. Dependent variable is the log of consumption expenditure per capita

Variable	OLS Male Household Head	T Statistic	OLS Female Household Head	T Statistic
Constant	8.469	104.81436	8.456	71.66102

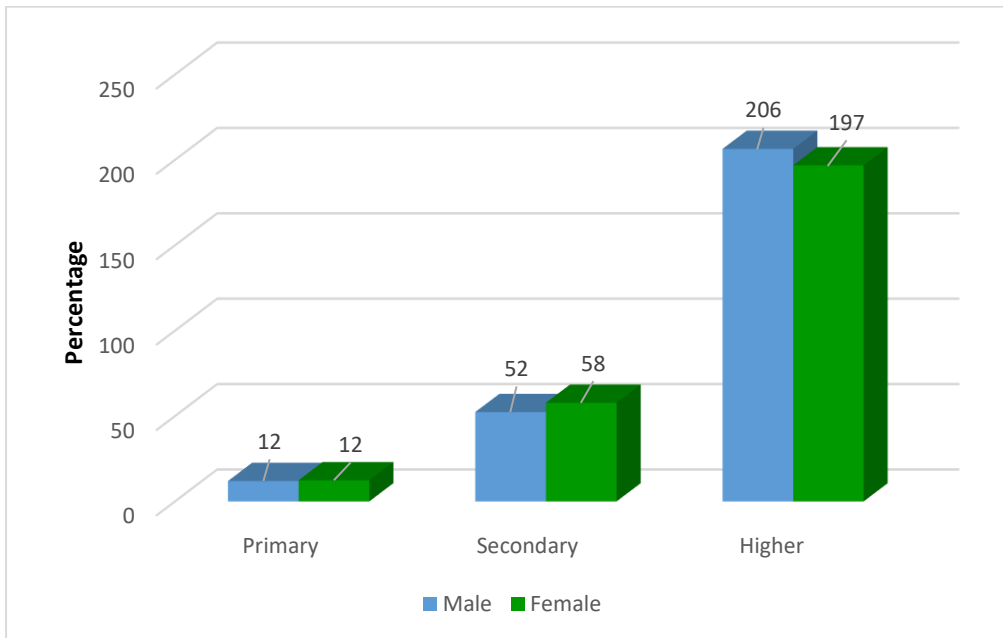
Age	0.00429	1.65637	0.0131	3.20293
Age-squared	-0.00000104	-0.42449	-0.00000981	-2.63710
Primary education	0.113	3.18310	0.117	3.45133
Secondary education	0.421	11.85915	0.456	13.14121
Higher education	1.12	20.70240	1.088	12.00883
Urban location	0.174	9.30481	0.14	5.14706
Western	0.257	7.74096	0.0514	0.98279
Central	-0.00208	-0.05668	-0.103	-1.79130
Southern	0.0399	1.12079	-0.134	-2.48609
Northern	-0.133	-3.32500	-0.268	-4.35065
Eastern	-0.161	-4.42308	-0.224	-4.13284
North-Western	0.0542	1.35840	-0.00122	-0.02013
Uva	-0.152	-3.58491	-0.182	-2.83489
Sabaragamuwa	-0.0892	-2.32898	-0.164	-2.75630
Observations	15680		4854	
R-squared	0.204		0.14	

Note: Location (base: Rural = 0), Province (base: North Central = 0)

Source: Estimated from the Sri Lanka Household Income and Expenditure Survey 2012/13.

The information in Figure 5 shows that families with primary educated male and female household heads enjoy economic welfare levels approximately 12 percent greater than the welfare levels of families with uneducated household heads. Families with secondary educated male household heads enjoy economic welfare levels about 52 percent greater than the welfare levels of families with uneducated male household heads. Families with secondary educated female household heads have economic welfare levels about 58 percent higher than the welfare levels of families with uneducated female household heads. Families with higher educated male household heads have economic welfare levels around 206 percent greater than the welfare levels of families with uneducated male household heads. Families with higher educated female household heads have economic welfare levels around 197 percent larger than the welfare levels of families with uneducated female household heads. This shows the substantial economic welfare benefits that accrue to household with higher educated heads.

Figure 5. The Association between Higher Education and Economic Welfare, 2012/13.

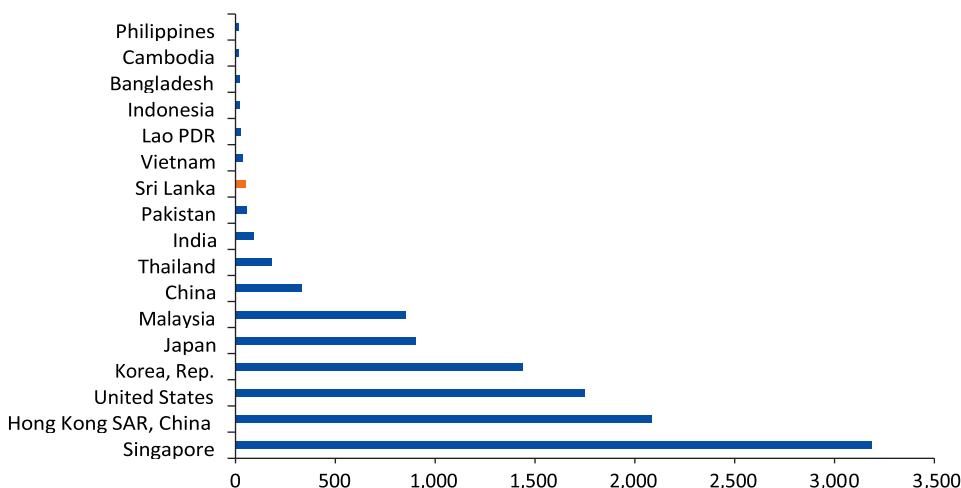


Source: Aturupane 2016. “Enriching and Accelerating Higher Education Development in Sri Lanka.”

RESEARCH AND INNOVATION

The research performance of universities is a major future challenge. Historically, universities have been mainly undergraduate education institutions. Research has played a relatively low role in university mandates. This is reflected in the relatively low output of research from universities (Dundar *et al* 2017). Indicators such as the number of citable documents per million inhabitants show very low results for Sri Lanka (Figure 6). The number of active researchers are a small proportion of the total number of university academics.

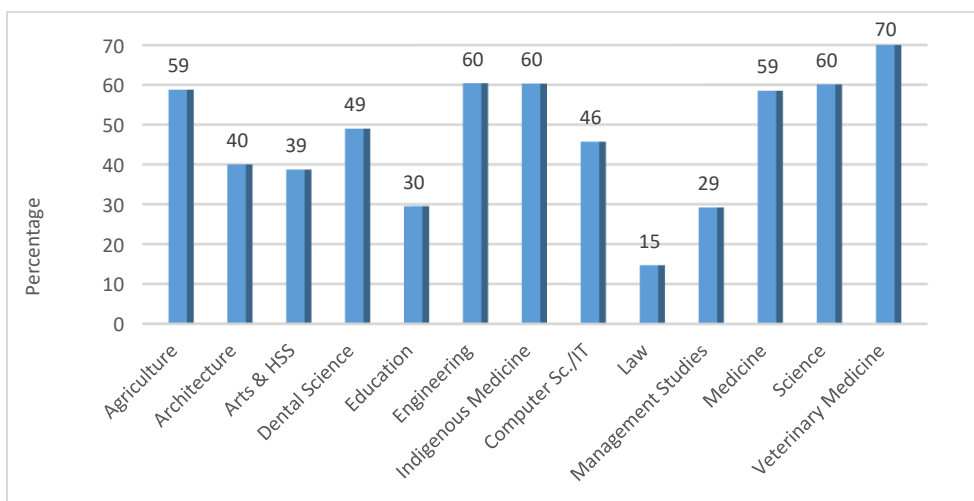
Figure 6. Citable Document per Million Inhabitants, Selected Economies, 1996-2014



Source: Dundar et al 2017. Sri Lanka Education Sector Assessment Achievements, Challenges, and Policy Options.

The low research output from universities can partly be attributed to the low percentage of Ph.D. qualified academics (Figure 6). Only 72 percent of academics in STEM programs, 39 percent of academics in Arts programs, 29 percent of academics in management programs, 30 percent of academics in education programs, and 15 percent of academics in law programs have Ph.Ds.

Figure 7. Proportion of Ph.D. Qualified Academic Staff by Discipline in Universities, 2015



Source: UGC Student Handbook 2016.

Research is being increasingly appreciated as an important mandate of universities. The fame and prestige of universities depend mainly on their research (Aturupane 2011). This is better understood among the current generation of academics,

especially in the STEM faculties which have a relatively higher proportion of Ph.D. qualified academics. The UGC too has introduced policy measures to encourage research in recent years. This includes making research output mandatory for academics to be promoted to the rank of Professor, and providing a research allowance as part of the benefit package of academics. Innovations leading to commercialization are in their infancy in universities. Indicators such as the number of patents submitted by residents are low (Table 3), but this is an area with great potential. Globally the commercialization of innovations has been expanding, especially in OECD countries (Guimon 2013). Sri Lankan universities have begun steps in this direction, with some important results (Larsen *et al* 2016). The University Grants Commission (UGC) issued a circular in 2016 enabling University-Business Linkage Cells which can, *inter alia*, facilitate the commercialization of research and innovation. However, there is considerable work to be done in future, including developing IP policies for universities, and encouraging research and innovation for commercial and industrial development.

Table 3. Number of Resident Patents Submitted, 2013.

Country	Total patents 2013	World rank (*)	Increase in total patents, % 2000–2013
Bangladesh	84	88	20
Brazil	6,850	23	81
Chile	807	47	218
Egypt, Arab Rep.	760	48	42
India	20,923	14	625
Indonesia	755	49	349
Iran, Islamic Rep.	11,343	21	2,667
Korea, Rep.	223,532	4	161
Luxembourg	2,653	32	226
Malaysia	2,303	35	919
Mexico	2,139	38	177
Pakistan	207	73	350
Philippines	350	63	122
Saudi Arabia	3,124	31	1,580
Singapore	5,474	27	676
Sri Lanka	445	56	518
Thailand	1,911	39	229
Turkey	5,793	25	1,483
Vietnam	497	53	1,362

Source: Dunder et al 2017. Sri Lanka Education Sector Assessment Achievements, Challenges, and Policy Options.

The UGC can institute a research assessment exercise of universities to encourage and facilitate research and innovation. This could be done, say, once every three years. The performance of universities in research and innovation would be assessed, and used for future resource allocation decisions. The experience of many OECD

countries has shown that formal research assessment exercises can play a transformative role in driving research and innovation in universities. This is especially important for the older, more established universities.

Finally, Vice-Chancellors need to pay attention to the quality of staff at recruitment. It is vitally important to recruit young and new staff with the capability to complete PhDs while they are still young, and are able and willing to engage in research. Faculties and departments that are lacking in Ph.D. qualified staff are almost doomed to be excluded from research and innovation: a vital area for the future development of the higher education system.

CONCLUSION

In conclusion, the higher education sector in Sri Lanka is approaching a new and more advanced stage of development. This will be characterized by increasing enrollment, both in undergraduate and postgraduate programs. It will be extremely important, in that context, to ensure that standards of academic quality are maintained, and indeed increase over time in keeping with international trends. In addition, integrating the cultivation of labor market relevant socio-emotional skills into assessment practices, teaching and learning, and curricula, will be very useful in the degree programs of the future. Finally, promoting research and innovation will be of vital importance for the development of universities. Universities can produce academic research, policy studies, and innovations that have industrial and commercial applications. Harnessing and developing the research and innovation potential of universities can make an enormous contribution to the economic and social development of the country.

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