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Quantitative Analysis of Water Quality and Heavy Metals in Water, Sediments, and Tissues of Grey Mullet (*Mugil cephalus*) from the Negombo Estuary

B.R.C Mendis¹, M.M.M Najim² and H.M.P Kithsiri³

Abstract

The objectives of this study were to assess the levels of water quality and heavy metals of the water, sediments and fish tissues in the Negombo estuaries. For this study, samples were collected from sixteen sampling locations during the one year study period from January to December 2014. The results revealed that the average concentrations of ammonia, nitrate, pH, electrical conductivity, total suspended solids of $0.215 \pm 0.4 \text{ mg/l}$, $1.08 \pm 0.98 \text{ mg/l}$, 7.8 ± 0.28 , $29.6 \pm 1.56 \text{ ms/cm}$, $29.2 \pm 0.35 \text{ mg/l}$, levels were below the maximum permissible limits. Biochemical Oxygen Demand $24.8 \pm 1.3 \text{ mg/l}$ and Chemical Oxygen Demand $469.0 \pm 36.5 \text{ mg/l}$ levels were much higher than the permissible threshold limits of industrial wastewater quality standards for CEA,(2001) Sri Lanka. The results indicated that the concentrations (ppm) of heavy metals in water were Pb, 0.01 ± 0.0003 ; Cd, 0.015 ± 0.003 ; Hg, 0.013 ± 0.001 ; Zn, 0.695 ± 0.06 ; Cu, 0.03 ± 0.02 ; Cr, 0.055 ± 0.004 and Fe, 0.485 ± 0.04 respectively. The sediments concentrations (mg/kg) were Pb, 7.95 ± 0.95 ; Cd, 1.06 ± 0.23 ; Hg, 0.001 ± 0.52 ; Cu, 0.042 ± 3.2 ; Cr, 14.30 ± 1.5 , Zn, 154.25 ± 3.2 and Fe, 78.6 ± 101.2 respectively. The concentrations (mg/kg) of metals in the fish tissues were Pb, 0.57 ± 0.48 ; Cd, 1.045 ± 0.28 ; Hg, 0.05 ± 0.046 ; Zn, 119.2 ± 111.3 ; Cu, 4.60 ± 1.64 ; Cr, 5.22 ± 2.49 and Fe, 32.8 ± 59.3 respectively. The highest concentrations of pollution status were recorded in the Northern region of the estuary.

Key Words: Fish Tissue, Heavy Metals, Pollution Status, Sediment, Water Quality

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Introduction

Negombo estuary is becoming heavily polluted due to rapid industrialization and urbanization in the area (Silva 1996). Anthropogenic activities continuously increase the amount of heavy metals added to the environment, especially in aquatic ecosystem, at an alarming rate which has become an important worldwide problem (Malik *et al.* 2010). Increase in population, urbanization, industrialization and agricultural practices have further aggravated the situation (Gupta *et al.* 2009). As heavy metals cannot be degraded, they are deposited, assimilated or incorporated in water, sediments and aquatic animals (Al-Khafaji 2010). Water pollution is thus a cosmopolitan problem that needs urgent attention and prevention (Ali *et al.* 1996). It is resulted from many sources, e.g. accidental spillage of chemical wastes, discharge of industrial or sewerage effluents, agricultural drainage, domestic wastewater and gasoline from fishery boats (Handy 1994). Water pollution is one of the principal environmental and public health problems in Negombo estuary in Sri Lanka (Silva 1996). Monitoring determines trends in the quality of the aquatic environment and how the environment is affected by the release of contaminants, by other anthropogenic activities. Sediments are one of the possible media for monitoring of aquatic systems.

Apart from water, sediments are also responsible of nutrients and pollutant transportation in aquatic environment (McCready *et al.* 2006). Fish accumulate toxic chemicals directly from the water and through their diet, contaminant residues may ultimately reach concentrations of hundreds or thousands of times above those measured in the water, sediment and fish. For this reason, monitoring fish tissue contamination serves an important function as an early warning indicator of sediment contamination or related water quality problems (Osman *et al.* 2007). Monitoring of fish tissue contamination also enables us to detect concentrations of toxic chemicals in fish that may be harmful to consumers, and take appropriate action to protect public health and the environment. A combination of bioaccumulation and measurements of water and sediment quality can provide a good indication of conditions and potential risks to the water body. The present study was aimed to study the heavy metal monitoring in water, sediments, and tissues of the mullet species (*Mugil Cephalus*) along the whole course of the Negombo estuary. Heavy metals such as copper and zinc are essential for life whereas some metal including mercury, lead and cadmium are biologically non essential which can be toxic to biota at very low levels. High concentration of some essential trace metals may become toxic at

concentration which exceeds the required limits (Wright and Welbourn 2002). The objectives of this study were to assess the levels of water quality and heavy metals of the water, sediments and edible fish tissues.

Methodology

Study Site

Negombo estuary is a shallow basin estuary of approximately 3,164 ha in extent, located between latitude 7°- 7°12' N and longitude 79°-79°53' E in the West coast of Sri Lanka. It is connected to the sea by a single narrow opening, the Negombo channel segment at its northern end, which is kept open year round.

To analyze water quality, sampling locations were selected to represent the entire estuary based on the channels and pollutant inputs from industrial, tourism, domestic, agricultural and municipal sources. Hence, sixteen sampling locations were selected at which the water channels enter into the estuary (Figure 1).

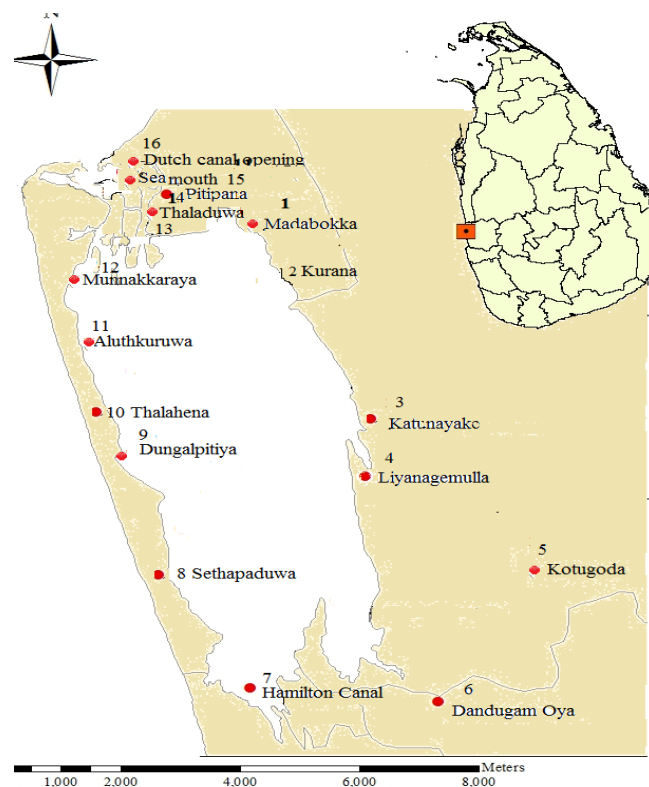


Figure 1: Sampling Locations at Negombo Estuary

These sampling locations included discharge points of effluent inlets from most of the industries at Jaela and Katunayeke free trade zones, boat anchoring locations and wastewater discharge points from houses (Table1). Water analysis was mainly focused on physico chemical parameters of water including pH, Electrical Conductivity, Total Suspended Solids, Chemical Oxygen Demand, Biochemical Oxygen Demand, Ammoniacal Nitrogen, Nitrate Nitrogen, and Heavy metals levels as Lead (Pb), Cadmium (Cd), Mercury (Hg), Copper (Cu), Zinc (Zn), Chromium (Cr) and Iron (Fe) in water, sediment and selected edible fish tissues.

Analysis of Water

Water sample were collected monthly from sixteen sampling locations, for a one year period from January 2014 to December 2014. Using polyethylene bottles in ice and transported to the laboratory. Some of the physico chemical parameters such as pH, Electrical Conductivity, Chemical Oxygen Demand, Total Suspended Solids, Biochemical Oxygen Demand, Ammoniacal Nitrogen, and Nitrate Nitrogen, were measured according to the Standard Methods for Examination of Water and Wastewater (20st Edition APHA Standard Methods). Heavy metals in water, sediments and fish tissues Pb, Cu, Cr, Zn, Hg, Fe and Cd were measured by Atomic Absorption Spectrophotometer (Thermo Elemental–Solaar).

Analysis of Sediments

Sediment samples from the selected sites were also collected at monthly intervals during the one year period from January 2014 to December 2014. These were collected using PVC pipe and kept frozen until analyzed. Sediment samples were allowed to defrost and air dried in a circulating oven at 30°C and sieved mechanically using a 02 mm sieve. For the digestion of samples, one gram (01g) sieved sediment was digested with repeated addition of nitric acid and 30% hydrogen peroxide. For Atomic Absorption Spectrometry analysis, the resultant digest was reduced in volume and then diluted to a final volume of 100 ml. The elements of concern (Fe, Zn, Cu, Pb, Hg, Cr and Cd) in the samples were determined by Atomic Absorption Spectrophotometer (Thermo Elemental–Solaar).

Analysis of fish tissues

Fresh fish samples (*Mugil cephalus*) were collected by using cast nets from the same sampling locations during experiment period from January 2014 to December 2014. These tissues were washed with tap water followed by distilled water, oven dried to constant weight at 105 °C. The dried fish was crushed and powdered in an agate mortar and kept in polyethylene bottles for analysis. One gram (01g) portions of fish tissues were digested by means of a microwave digestion after addition of nitric acid and hydrogen peroxide. The results were calculated in milligram per kilogram wet weight (mg/kg wet wt). Pb, Cd, Hg, Cu, Zn, Cr and Fe were tested using AOAC (2002). Hg in the digested fish sample was analyzed using cold vapor Atomic Absorption Spectrophotometer (Thermo Elemental–Solaar).

Sampling sites were categorized as North, South, East, and West estuary (Table 1).

Table 1: Description of Study Sites at Negombo Estuary

Region of the estuary Categorize	Sampling locations Discharge inlets	Input sources (if any)
Northern Estuary (A)	13,14,15,16	Municipal solid waste, industrial effluents, animal livestock urbanization, hotels, fishing harbor and boat repair stations and domestic sewage outlets.
Southern Estuary (B)	6,7,8	Two fresh water canals, Ekala industrial zone, seaplane landing site, various effluents in Hamilton canal outlet.
Western Estuary (C)	9,10,11,12	Hotels, shrimp farm and fish processing industries.
Eastern Estuary (D)	1,2,3,4	Katunayake industrial processing zone, hotels and housing scheme.
Reference Point (R)	5	Ekala industrial zone (near 01 km distance)

Results

Water Analysis

Results are presented as mean \pm standard error values of physical chemical parameters in Negombo estuary during a study period are given in Table 2.

Table 2: Mean \pm SE of annual variations of physico chemical parameters (n=16)

Region of the estuary	pH	EC (ms/cm)	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Nitrate N (mg/l)	Ammonia (mg/l)
North Region	7.82 \pm 0.28	29.6 \pm 1.56	24.8 \pm 1.3	469.0 \pm 29.0	24.9 \pm 0.2	0.71 \pm 0.63	0.14 \pm 0.01
South Region	6.70 \pm 0.01	13.9 \pm 0.45	22.8 \pm 2.7	161.5 \pm 12.7	11.2 \pm 0.54	1.08 \pm 0.98	0.20 \pm 0.02
West Region	7.60 \pm 0.27	24.5 \pm 2.45	23.5 \pm 2.6	361.1 \pm 24.5	29.2 \pm 0.35	0.66 \pm 0.56	0.09 \pm 0.01
East Region	7.45 \pm 0.32	20.0 \pm 1.89	21.9 \pm 2.5	133.0 \pm 11.8	13.5 \pm 0.25	0.90 \pm 0.89	0.135 \pm 0.4
Reference Point	7.45 \pm 0.34	22.1 \pm 2.67	20.7 \pm 2.2	229.7 \pm 23.5	18.0 \pm 0.56	0.95 \pm 0.78	0.215 \pm 0.4

Source: Survey 2014

The pH of surface water fluctuated between 6.70 \pm 0.01 to 7.82 \pm 0.28 respectively. The results of this study indicated a high pH value recorded in North region (Table 2). It was within the standard limits of the proposed tolerance limits for the discharge of industrial wastewater quality standards for Central Environmental Authority in Sri Lanka. (CEA, 2001). Electrical Conductivity of surface water varied from 13.9 \pm 0.45 to 29.6 \pm 1.56 ms/cm among the regions. The EC values also highest at north region and the lowest was reported southern region (Table 2). Biochemical Oxygen Demand depends on temperature, extent of biochemical activities, concentration of organic matter and such other related factors. During the study period, BOD was observed to be in the range from 20.7 \pm 2.2 to 24.8 \pm 1.3 mg/l among sites. Maximum value of BOD was recorded at north region and the minimum was observed at reference point. The Chemical Oxygen Demand is used as a measure of oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by strong chemical oxidants. The COD levels shown that Table 2, was highest at north region. This may be due to the discharge of industrial effluents into the estuary by some untreated effluents release by factories in these areas, in addition to the discharge of municipal wastewater and other wastes into the estuary. Nitrate and Ammonia are the most common forms of nitrogen in aquatic systems. The high value nitrate was recorded in southern region (Table 2).

Heavy metal levels in water

The levels of seven heavy metals in water (Pb, Cd, Hg, Cu, Zn, Cr and Fe) at sixteen sampling locations of the estuary are presented in Table 3.

Table 3: Mean concentrations \pm SE of annual variations of metals in water (n=16)

Regions	Pb (ppm)	Cd(ppm)	Zn (ppm)	Cu (ppm)	Cr (ppm)	Fe(ppm)	Hg(ppm)
North	0.026 \pm 0.002	0.015 \pm 0.003	0.360 \pm 0.05	0.03 \pm 0.04	0.039 \pm 0.05	0.462 \pm 0.03	0.013 \pm 0.001
South	0.023 \pm 0.001	0.001 \pm 0.002	0.695 \pm 0.06	0.03 \pm 0.02	0.003 \pm 0.003	0.485 \pm 0.04	0.001 \pm 0.001
West	0.005 \pm 0.003	ND	0.165 \pm 0.007	0.035 \pm 0.04	0.055 \pm 0.004	0.335 \pm 0.02	0.004 \pm 0.003
East	0.017 \pm 0.09	0.001 \pm 0.002	0.021 \pm 0.003	0.025 \pm 0.02	0.007 \pm 0.002	0.480 \pm 0.04	ND
Reference Point	0.01 \pm 0.0003	0.0005 \pm 0.008	0.290 \pm 0.02	0.022 \pm 0.04	0.023 \pm 0.006	0.445 \pm 0.05	ND

ND = Not Detectable

The concentration (ppm) of the metals in water showed a lead (Pb) values were fluctuated within a narrow range 0.01 \pm 0.0003 to 0.005 \pm 0.003 ppm respectively. The high Pb values were recorded in north region (Table 3). The Cd exhibited a wide range of variation between 0.0 to 0.015 \pm 0.003 ppm. The high Cd value was recorded at north region (Table 3). Zinc concentrations fluctuated between 0.021 \pm 0.02 to 0.695 \pm 0.06 ppm and Cu concentration ranged from 0.025 \pm 0.02to 0.03 \pm 0.02 ppm (Table 3). The highest concentration of Cr was recorded at west region lowest was recorded at south region (Table 3). Mercury concentration seems to be very rare in the estuary water as it was recorded only in some regions along the estuary. Generally the increase in heavy metal concentrations in the estuary water might be attributed to the direct inputs from different sources (industrial wastes). The result indicate that the levels of non essential (toxic) heavy metals as Pb, Cd and Hg in water were comparatively high in north region of the estuary (Table 3). The limit of detection of water in Lead, Copper, Cadmium, Mercury, Zinc, Iron and Chromium contents in water were below the standard

limits defined for each element are 0.5 mg/l, 0.5 mg/l, 0.2 mg/l, 10 mg/l, 40 mg/l, 20 mg/l and 10 mg/l respectively (EU,2002).

Sediments Analysis

Analysis of sediments existing at the bottom of the brackish water provides evidence for long term pollution. Low level discharge of a contaminant may meet the water quality criteria, but long term partitioning to the sediments could result in the accumulation of high loads of pollutants. Therefore the determination of heavy metals in sediments is fundamental to realize the toxic pollutants in the estuary sediment. Table 4 illustrates the levels of selected metals in sediments at sixteen sampling location of Negombo estuary.

Table 4: Mean concentrations \pm SE of annual variation of metals in Sediment (n=16)

Regions	Pb (mg/kg)	Cd (mg/kg)	Hg (mg/kg)	Zn (mg/kg)	Cu (mg/kg)	Cr (mg/kg)	Fe (mg/kg)
North	3.88 \pm 0.35	1.06 \pm 0.23	0.001 \pm 0.25	142.6 \pm 0.54	0.033 \pm 2.3	11.40 \pm 1.1	523.5 \pm 56.3
South	5.90 \pm 0.65	0.45 \pm 0.05	0.001 \pm 0.52	152.5 \pm 0.52	0.025 \pm 0.2	9.55 \pm 2.5	778.6 \pm 101.2
West	3.10 \pm 0.23	0.40 \pm 0.52	ND	154.25 \pm 3.2	0.042 \pm 3.2	13.15 \pm 2.5	538.5 \pm 2.32
East	7.95 \pm 0.95	0.40 \pm 0.65	ND	50.75 \pm 2.3	0.025 \pm 0.25	14.30 \pm 1.5	437.5 \pm 4.050
Reference Point	4.05 \pm 0.32	0.45 \pm 0.56	ND	1.50 \pm 0.2	0.025 \pm 3.2	9.85 \pm 3.2	388.0 \pm 36.0

ND = Not Detectable

The range of the concentrations (mg/kg) of all metals in sediments were Pb, 3.10 \pm 0.23 to 7.95 \pm 0.95; Cd, 0.40 \pm 0.52 to 1.06 \pm 0.23; Hg, 0 to 0.001 \pm 0.52; Cu, 0.025 \pm 0.2 to 0.042 \pm 3.2; Cr, 9.55 \pm 2.5 to 14.30 \pm 1.5; Fe, 388.0 \pm 36.0 to 778.6 \pm 101.2 respectively. The highest level of Pb in sediments was found in east region (Table 4). The highest level of Cd and Hg were in the sediment was found at the north region (Table 4). Whereas levels of Cr was high in the east region located in the west region. Cu and Fe levels were the highest in the sediments from west and south region respectively. Mercury was recorded in not detected levels in west and east region (Table 4). North and

South region concentrations seem to be constant level. The wide ranges of metal concentrations recorded from locations may be attributed to variations and heavily flow of urban effluents draining into estuary.

Heavy metal levels in fish

Total metal levels in tissue of the fish (*Mugil cephalus*) caught at sixteen sampling location. Knowledge of heavy metal concentrations in fish is important with respect to human consumption of fish. In the estuary, fish are often at the top of the food chain and have the tendency to concentrate heavy metals from water.

Table 5: Mean concentrations \pm SE of annual variations of metals in Fish tissue (n=16)

Regions	Pb (mg/kg)	Cd (mg/kg)	Hg (mg/kg)	Zn (mg/kg)	Cu (mg/kg)	Cr (mg/kg)	Fe (mg/kg)
North	0.57 \pm 0.48	1.045 \pm 0.28	0.03 \pm 0.018	51.43 \pm 10.11	4.32 \pm 1.15	4.27 \pm 1.14	31.08 \pm 60.5
South	0.30 \pm 0.19	0.45 \pm 0.28	0.0005 \pm 0.0004	119.2 \pm 111.3	4.04 \pm 1.13	4.33 \pm 1.45	32.8 \pm 59.3
West	0.25 \pm 0.04	0.55 \pm 0.48	0.001 \pm 0.0005	31.4 \pm 60.6	3.24 \pm 0.56	5.22 \pm 2.49	26.49 \pm 31.5
East	0.0 \pm 0.01	0.35 \pm 0.16	0.05 \pm 0.046	37.2 \pm 38.9	2.35 \pm 0.98	4.73 \pm 1.34	32.29 \pm 50.3
Reference Point	0.50 \pm 0.59	0.36 \pm 0.35	0.01 \pm 0.005	52.18 \pm 110.4	4.60 \pm 1.64	3.90 \pm 1.29	32.84 \pm 35.4

Source: Survey 2014

The concentrations of metals in the edible muscle tissues were Pb, 0.0 \pm 0.01 to 0.57 \pm 0.48; Cd, 0.35 \pm 0.16 to 1.045 \pm 0.28; Hg, 0.0005 \pm 0.0004 to 0.05 \pm 0.046; Zn, 31.4 \pm 60.6 to 119.2 \pm 111.3; Cu, 2.35 \pm 0.98 to 4.60 \pm 1.64; Cr, 3.90 \pm 1.29 to 5.22 \pm 2.49 and Fe, 26.4 \pm 31.5 to 32.8 \pm 59.3 mg/kg respectively. The highest level of Pb, Cd and Cu were in the fish tissue were found at the sampling at north region. Whereas levels of Cr was high in the west region. Zn and Fe levels were the highest in south region (Table 5). The detected mercury, copper, zinc, cadmium, lead and iron contents in fish tissue were below the standard limits defined for each element <0.05 mg/kg, <10 mg/kg, <40 mg/kg, 0.5 mg/kg, <0.5 mg/kg, <0.5 mg/kg and <40 mg/kg respectively (FAO, 1983).

Discussion

Water quality of Negombo estuary is influenced by two main inland water bodies (Dandugam Oya and Hamilton Canal) and the sea. The fresh water canal and the tidal floods may transport toxic pollutants originate in different parts of the catchments, land use or the estuary itself. Estuary water is not utilized for human consumption because of its salty nature. The estuary is susceptible to chemical pollution due to ongoing development activities of Negombo and Katunayake areas (CEA 1994). However monitoring the heavy metal pollution in Negombo estuary would be important to human health because of the fishery of the estuary (Indrajith *et al.* 2008). Metals may be enter the resident fish in different ways and absorb metals could accumulate in various organs of the fish body. Metal uptake and their toxicity in aquatic fauna is influenced by many factors such as Chemical Oxygen Demand, Biochemical Oxygen Demand and Nutrients levels in water. Copper can combine with other contaminants such as ammonia, mercury and zinc to produce an additive toxic effect on fish. Urbanization and sewage disposal are major source of zinc pollution.

In the present study revealed that, levels of heavy metal variations exist in different regions of the estuary, with respect to the dissolved Pb, Cu, Cr, Zn, Hg, Fe and Cd. The levels of Pb, Cd and Hg in water collected from some sampling sites located in the North region were higher compared to the other regions. North region of the estuary is being polluted due to the various anthropogenic activities such as solid waste from industries, slaughter houses, boat yards and animal farms. High levels of Pb in water samples collected from north in comparison to other sampling regions may be partly due to the discharge of fuel from motor boats to the estuary water. North region of the estuary is connected to the sea mouth and mixing to sea water, through the levels of Pb, Cd and Hg in water in all sampling locations in this region were higher than other regions. The levels of sediment Pb north region were comparatively low. The status of the sediment of this area is affected by tidal waves, sedimentation and human activities. Hence the level of metals in the sediments of north region to change throughout the year and this may have partly contributed to low Pb accumulation in sediment of this area in comparison to the other sites. The south region receives water mainly from the Jaela canal and Dandugam oya and they carry various effluents from Ekala industrial zone (CEA 1994). In comparison to the north region of the estuary the levels of metals in water (Pb, Hg, and Cd) were high but levels of metals in sediments (Pb, Hg, and Cd) were higher in east region receives waste from hotels, shrimp

farm and fish processing industries. Generally the levels of Pb, Cd and Hg in water of this area were low. West region receives waste from hotels, shrimp farm and fish processing industries. Generally the levels of Pb, Cd, Zn and Fe in water of this area were low but the levels of sediment bound metal were comparatively high. East region receives effluent from Katunayake industrial processing zone, hotel and housing scheme. Hence the levels of metals in water Pb, Cd and Fe were high in this region.

Conclusions

Results indicated that the levels of BOD, COD and heavy metals revealed that high pollution takes place in industrial and domestic sewage sampling locations. The South region receives water mainly from Dandugam Oya which carries various effluents from Ekala industrial zone. East region receives discharge of effluents from mainly Katunayake industrial processing zone. North region of the estuary, the levels of BOD, COD and heavy metals in water, sediment and fish tissues were higher due to the discharge of industrial effluents and domestic solid waste discharge into the estuary. The detected average concentration of mercury in water was above the standard limits. The highest concentrations of BOD, COD and heavy metals were recorded in the Northern area followed by Southern, Eastern and Western regions indicating the pollution status of the estuarine water.

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Challenges in Promoting Producer Groups among Small Scale Farmers: Evidence from a Community Development Project in Sri Lanka

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Abstract

The Second Community Development and Livelihood Improvement Project (SCDLIP) of the Government of Sri Lanka (GOSL) funded by the World Bank had a component on Public Private People Partnerships (PPP) in which it was aimed to form producer groups in order to solve the marketing problems and improve market access to small scale producers. The Author obtained the existing situation of the Producer Groups in the districts by conducting a Postal Survey of all hub offices (FOUs) operating in the project districts and this paper is based on the response received to that questionnaire, the discussions held at hub/ district offices and field observations. Most of these Producer groups were at the initial stages at the time of writing this paper. The performance of these groups varied widely among various project districts and these groups were confronted with many problems and challenges. Although Monaragala, Polonnaruwa, Badulla, Ratnapura and Hambantota have been pioneering districts under which PPP arrangements were started under the Project from the first batch of the Phase I onwards, these programs also at present are fraught with a number of difficulties. The aim of this paper is to document the experiences of these projects and to provide recommendations with a view to solving the problems faced by these groups.

Key Words: People, Private and Public Partnerships, Producer Groups, Community Driven Development, Small Scale Producers

Introduction

Formation of producer groups among small scale farmers has been considered as a remedy to the many marketing problems faced by them. These initiatives have been put into practice through a buy-back system. Buy-back system is being implemented as a variant of the Contract Farming (CF) system though the latter is larger in scale in terms of number of farmers involved and the extents cultivated.

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Producer groups are formed as a part of the public, private, people partnerships (PPP) which are usually implemented under by Contract Farming (CF) and Out-grower Schemes (OGs) and hence the issues faced by the two systems are more or less similar.

The introduction of CF and Out-grower Schemes (OGs), first by the trans-national agribusiness firms, and later by para-statal organisations and local companies, has led to the promotion of cash cropping and thereby, commercialisation of agriculture in many Less Developed Countries (LDCs). (Von Braun et.al:1989; Kennedy:1989) Such schemes have encouraged local processing and export of non-traditional crops which is in sharp contrast with the earlier trade pattern in which primary commodity exports from LDCs were processed in factories located within developed countries. (Maxwel:1988; Matthews; 1988) These CF and OGS have introduced new crops, new farming techniques, and resulted in increased farm incomes of some of the small-scale growers in a few LDCs. (Glover:1984; Goldsmith:1985; Minot:1986) But the schemes are also being criticised for their negative effects on food security, nutrition, income distribution, environment, and the welfare of women. (Lappe and Collins 1977, George 1980, Fedder 1977, Dinham and Hines 1983, Bulow and Sorensen 1988) However, there are a few cases reported in the literature where some researchers have found that cash cropping under contract has achieved growth without sacrificing equity objectives in Fiji, Kenya and Malaysia. (Ellis: 1988; Lamb and Muller: 1982; Allen: 1983; Barlow and Jayasooriya:1986) This subject is inextricably linked with at least three other issues. First, most contract farming schemes are linked with the activities of the trans-national agribusiness firms. (Goldsmith:1985) Many MNCS favour contract farming schemes as opposed to plantations or large scale agricultural development projects due to various economic and political reasons (Tiffen and Mortimore:1990). The impact of trans-national agribusiness on the host country economy, and farming households is the subject of many research. Second, most crops selected for contract farming are cash crops as opposed to food crops, because “the crops most easily incorporated into CF and OGs are those with high and skilled labour requirements and high revenues per hectare. (Glover:1990) Crops enjoying significant economies of scale in production are less suitable. It is least common for basic food grains which are not processed. The majority of the crops grown under contract farming are destined for export. (Maxwell:1988). For these reasons, studies on contract farming are also linked with the debate on cash crops or export crops vs. food crops Third, the spread of cultivation of cash crops increases the commercialisation of agriculture in the LDCs. Thus, the impact of this process on food consumption

and nutrition of the farming households has become another area of concern. There are some researchers who are pragmatic in their approach and try to isolate contract farming as an institutional mechanism from the debate on agribusiness and cash crops and attempt to evaluate the impact of contract farming on the national economy, firms, and participating farmers and also to examine what factors constrain the replication of CF and OGS.(Ellis:1988; Barlow and Jayasooriya:1986).

There are some reasons for the agribusiness firms to remain integrated at the field level. The principal reason is to ensure the supply of raw materials of sufficient quantity, and good quality, which are essential to the efficient operation of processing facilities

With contracting growers have a) an assured market for their crops, b) enable them to forecast their incomes more accurately. c) can experiment with new crops and cultivation techniques, d) gain access to company's services, (extension advice and machine hire) material inputs (fertilisers, agro-chemicals and seed/planting materials) e) can obtain easier access to credit and f) enable them to become more specialised and increase productivity.

Where the impact of CF and OG schemes on farmers welfare is concerned, an increasing number of studies have shown that farm incomes and agricultural productivity have been raised in many of the CF and OG schemes, but there have also been cases in which farm incomes have declined, or farmers experienced losses, Low product prices and high input costs seemed to have contributed greatly to these losses. CF and OG schemes also increase the employment opportunities in the agricultural sector. Many studies have shown that, family labour use has been significantly increased in growing the contracted crop.

The Second Community Development and Livelihood Improvement Project (SCDLIP) of the Government of Sri Lanka (GOSL) funded by the World Bank had a component on PPP in which it was aimed to form producer groups in order to solve the marketing problems and improve market access to small scale producers. This component would develop partnerships between rural communities and private sector and public sector agencies to increase access to new technology and marketing opportunities; and enhance skills for employment generation and off- farm activities especially among unemployed youth Most of these Producer groups were at the initial stages at the time of writing this paper. And the performance of these groups varied widely among various project districts and these groups were confronted with many problems and challenges. The aim of this paper is to document the

experiences of these projects and to provide recommendations with a view to solving the problems faced by these groups.

The Project

The SCDLIP was designed to assist the implementation of the Government Poverty alleviation Strategy elaborated in the “Mahinda Chinthana – Future Vision” development Program of the previous government. As this was a novel project of Community Driven Development (CDD) type village development model; the World Bank formulated the project in collaboration with the government of Sri Lanka as an Adoptable Programmable Loan (APL) in three (03) Phases with 04 year duration.

The phase 1 of the project achieved remarkable performance in its main components; Community Development, Social Infrastructure Development and Livelihood improvement while bringing the benefits to over a million of community in seven districts.

With the successful implementation of the Phase I of the project, the World Bank has provided US\$ 75 million for the implementation of Phase - II of the project, the “Second Community Development & Livelihood Improvement Project” for the period of four years commenced in March 2010. The phase II of the project covers 1,010 villages in 54 DSDs in seven districts, inclusive of two new districts.

The objective of this US\$ 4.4 million component namely Public Private, Peoples Partnership Sub-Project of the SCDLIP is to develop partnerships between rural communities and private and public sector agencies to increase access to new technology and marketing opportunities; and enhance skills for employment generation and off-farm activities especially among unemployed youth. The component will also focus on attracting investments in rural areas with more public and private sector resources.

Methodology

The methodology adopted for collection of data for this component was sending a Postal questionnaire to all the Hub Offices in the sample locations. This paper is based on the response received to that questionnaire, the discussions held at hub/ district offices and field observations.

Results

PPP Activities in the Monaragala District

Monaragala was a pioneering district of the Project which started Public, Private, Peoples Partnership activities for commodities such as maize and dehydrated lime during the first phase itself. These two arrangements are still continuing albeit with some difficulties and problems. At the final stages of phase I a few other commodities such as fresh lime and oranges were also added to this list. Only Bibila Medagama and Madulla Hub Offices responded to the PPP questionnaires sent by post. The private sector institutions that are linked with the producers of these commodities in the Monaragala district, specifically in the Bibila Medagama and Madulla Hub Office areas, are as follows.

Table 1 Details of PPP Arrangements in Monaragala District

Commodity	Business Link	No. of Producers	
		Bibila-Medagama HO Area	Madulla HO area
Maize	Prima Co. Ltd; NLDB; Plenty Foods	12	480
Dehydrated lime	Lukmanjee and Akmanjee Co. Ltd	08	-
Fresh Lime	IFCO	22	300
Oranges	Cargills Food City	03	-
Vegetables	Wholesalers	-	200
<i>Raja Ala</i>	Not Given	-	80
Banana	Not Given	-	100
Ginger	LMP Traders-Alawwa	-	-
Fresh Milk	Milco		75
Passion Fruit	Not Given		20
Pumpkin	Not Given	-	125
Palm Leaves	Dambadeniya Foundation	-	-

Source: Postal Survey 2011

During the phase I of the project the PPP arrangements were signed and implemented with the involvement of Federations of village organizations. The nature of the contracts in most of these arrangements is written contracts, the period of contracts in Medagama being one (1) year. In Madulla

most contracts are signed for 6 months. It has been the SCDLIP Head Office or the District Office that has negotiated and initiated these contracts. However, Federations of village organizations do not exist under the new institutional set up of the SCDLIP. Therefore, the PPP arrangements now come under a new institutional structure called Producer Groups. These PGs are a part and partial of the Village Organizations. However, in the Bibila- Medagama and Madulla Hub Office areas from which the information was available to the author on PPP arrangements in the Monaragala district these PGs are not yet formed, but they are still in the process of formation. Hence, in the case of these commodities the agreements have been negotiated by the District Federation there. However, the total number of producers who have PPP arrangements with the private sector/public institutions is only 45 in the Bibila-Medagama Hub Office area. This is a very small number and poses serious problems in relation to the economies of scale in such activities as assembly and transport. However, in Madulla HO area a fair number of producers are involved with PPP arrangements. According to the information given by Madulla HO there are about 1,370 producers who are selling their commodities such as Maize, *Raja Ala*, Banana, Fresh milk, Fresh lime, Passion Fruit, Pumpkin and Vegetables. The private firms/institutions which purchase these commodities are listed in table1. Data is not available in respect of the quantities transacted under all these arrangements, but the small number of producers, particularly in Medagama HO area in itself is an indication of very low quantities that may have been transacted there. However in Madulla HO area, quantities transacted should at least be at a moderate level especially in commodities such as Maize, Fresh Lime, Vegetables, Pumpkin and Banana in which the numbers of producers involved are more than 100 under each case. Some of the participating firms provide seeds / planting material, agricultural extension advice, transport facilities to the collection point, dissemination of technology, and advice on standardization etc. in addition to the buying of produce. Moreover, the producers or the VO s have failed to supply the agreed quantities to the buyers due to selling of the commodities by the producers in the open market because of high prices prevailed in the open market particularly for maize, fresh lime and vegetables. The producers also are failing to supply the commodities in the agreed upon quality. Maize and Fresh Lime are examples. In the case of Fresh Lime, producers are unable to supply the goods in the agreed upon quality due to the discoloration of fresh lime resulting from not collecting the produce in time by the buyers. However, when collection dates were informed before- hand the producers have been able to deliver the goods in time. Also there have been instances when the buyer had breached the contract provisions, such as not

paying the sales proceeds in time, not purchasing on the agreed upon delivery dates, and not providing the agreed upon transport facilities. In Madulla there have been instances when the maize delivered to the factory was sent back to the producers saying that the goods do not conform to specified quality. The contract breach by both parties is a common phenomenon of these types of arrangements and therefore, legal provisions have to be in place to deal with such situations.

The Monaragala SCDLIP Hub Offices provide some services to Village Organizations, Producer Groups as well as to individual producers. These are listed in Table .2.

Table 2 .Services Provided on PPP by Hub Offices

To Village Organizations	To Producer Groups	To individual Producers
<p>Introduction of new products and services</p> <p>Providing Training and advice on how to improve the quality of existing products in the villages</p> <p>Providing guidance on how to add value to the existing products in the village.</p> <p>Provide information on prospective firms that are willing to establish links with the producers and coordinating the linkages between firms and producers.</p> <p>Introduce quality standards and provide instruments to measure quality (e.g. Moisture meters for Maize)</p>	<p>Conduct awareness programs on forming the Producer Groups and provide training on the benefits of group action</p> <p>Provide training and advice required by the Producer Groups</p> <p>Training on how to maintain books when working as a group and on the responsibilities that have to be borne when dealing with business firms</p> <p>Arrange exposure visits for group members thus enabling the exchange of experiences.</p>	<p>Provide training and guidance on how to produce a commodity or service</p> <p>Link the specific buyers to the villages and Village Organizations</p> <p>Provision of required credit facilities through the VO and facilitating links with banks and other financial institutions when the amount of loan required is large</p> <p>Provide training on how to maintain the quality of the commodities / services produced</p> <p>Conducting awareness programs on alternative uses of commodities of which prices have substantially dropped, and supply equipment and tools necessary for such production.</p>

		Providing guidance on harvesting and storage (Maize)
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Source: Postal Survey 2011

A number of difficulties are faced by the SCDLIP Hub Offices, Village Organizations and Producer Groups (where available) in dealing with buyers of their commodities under PPP arrangements. These are summarized in Table.3

Table 3 Difficulties Faced in Dealing with Buyers under PPP arrangements

SCDLIP Hub Office	Village Organizations	Producer Groups
<p>The uncertainty as to whether the buyer will continue with the agreement till the end</p> <p>Absence of a proper methodology for the formation of Producer Groups and the benefits that can be provided to the producers.</p> <p>There is no methodology for raising funds for the Producer Groups.</p> <p>There are problems in providing equipment to PGs for improving the quality of their products.</p> <p>Since some buyers breach the contracts the producers loose</p>	<p>Suspicious nature of some buyers the Vos are reluctant to introduce them to the members.</p> <p>Inability to provide benefits of PPP arrangements to members due to the breach of contract s by the buyers.</p> <p>Producers have to incur heavy transport costs to transport their produce to distant picking up/ collection points, thus lowering their profits.</p> <p>The inability of the VO to provide credit facilities to a large number of producers.</p> <p>The buyers tend to purchase</p>	<p>Lack of guidance to the members of PGs on what they should do to develop the PGs and for defining the future role of the groups.</p> <p>Non availability of funds for the PGs to provide the necessary services to producers. (e.g. Lack of funds purchase materials required for drying of maize, and to construct storage facilities to profit from price increases towards the end of the season)</p> <p>Uncertainty regarding the legal acceptance of the PGs.</p> <p>There are no proper instructions on how to keep</p>

trust with the SCDLIP Hub Office. Some buyers enter into contract with the VOs without informing the SCDLIP Hub Office of the area. In such circumstances if one party violates the contract the Hub Office would not be able to intervene.	the commodities through a collector at village level without the knowledge of the Board of Directors of the VO.	the PGs active during off seasons.
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Source: Postal Survey 2011

The Chief Facilitator of Bibila- Medagama Hub Office is of the view that for the smooth functioning of PPP arrangements it is always advisable to have written contracts, and to conduct awareness programs for PGs / VOs on the required quality specifications. It is also important for the Hub Offices to coordinate the PPP arrangements between buyers and the producers and their organizations and engaged in follow-up of such arrangements with a view to facilitate the transfer of money to the village from the buyers either in the private or public sector. Table 4 provides a brief account of remedies suggested by the Buttala Hub Office to improve the performance of PPP arrangements implemented in their area of operation.

Table 4 Remedies Suggested by Buttala Hub Office

To the Problems Faced By the Hub Office	To the Problems Faced by the Village Organizations	To the Problems Faced by the Producer Groups
There is a need for the SCDLIP Head Office to play an active and effective role in introducing new buyers and maintaining the relationship	Take necessary steps to build mutual trust between the buyers who come to the village and the village	Devise an action plan to provide the necessary legal backing for the PGs. Devise a method for

with them until the end. Provide training to HO staff on the formation of PGs, on the implementation of business deals and on how to assure the long term sustainability of PGs. Provide guidance and advice on how to raise funds for the activities of the PGs. Provide the necessary legal backing for the PGs. Get actively involved in negotiating prices with a view to provide the maximum benefit to the producers.	organization. Avoid placing of the producers in a difficult position due to the breach of contracts by the buyers. Solicit support from govt. and private banks to provide credit facilities for the Vos when credit needs of the members are large. Arrange for suitable transport facilities to the Vos when the production volume is large. Make necessary provisions in the contract to effectively deal with price fluctuations. Ensure active involvement of buyers throughout the production period and not just in the harvesting period.	generating funds to the PGs and provide the needed facilities for the same. Conduct awareness programmes on the benefits from group action and devise a program to provide those benefits. Provide funds for purchasing necessary tools and equipment that can facilitate cleaning, sorting and grading etc. of produce. Provide necessary funds for establishing storage facilities.
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Source: Postal Survey 2011

PPP Arrangements in Ratnapura District:

Ratnapura district commenced the implementation of the Project at the very early stages, and the activities began with Batch 1 of Phase I. The project is now being implemented in 15 DS divisions out of a total number of 17 DS divisions existing in the district. Responses to the Postal Survey were received from 6 Hub Offices of the district. They were Balangoda Imbulpe, Kahawatta, Kolonna,

Pallebedda and Embilipitiya. From these responses the following information was elicited on the existing PPP arrangements in the district.

Table7. Details of PPP Arrangements in the Ratnapura District

Hub Office Area	Commodity/ Service	No. of Producer Groups	No. of Producers	Name of Buyer	Name of Service Providers
Balangoda	Bed Sheets, Mats	01	27	AMRUS/ Crystal	
Balangoda	Coir Based Products	01	15	Abdul Kayoom	
Balangoda	Fresh Milk	02	39	MILCO	Bank of Ceylon
Balangoda	Cut Flowers	01	35	Canal Corner	
Imbulpe	Fresh Milk	01	45	MILCO	Agrarian Insurance Board, Veterinary Office
Kahawatta	Cut Flowers	01	17	Ranhuya	
Kahawatta	Kitul Treacle	01	08	-	
Pallebedda	Cut Flowers	01	08	Mahima Plants, Andi ambalama	
Pallebedda	Coir Brushes	05	25	Dyson Co. Katunayake	
Embilipitiya	Ladies Garments	01	12	Semali Fashion Maharagama.	

Total No. Of Producer Groups = 15	Total No. of Producers = 231
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Source: Postal Survey 2011

Although there are about 297 VOs in the district, the number of Producer Groups is very small (only 15). The total number of producers engaged in PPP is also are very small, altogether 231. Another important feature in the PPP arrangements is that, except in the case of MILCO all other buyers who are linked with the producers are themselves micro and small businesses which do not have a good reputation as reliable companies. The buyers are from distant places such as Colombo, Maharagama, Katunayake, and Andi ambalama. Due to long distance between the producers and buyers, it takes an unnecessarily a long time in conflict resolution. There are also delays in obtaining technical and extension advice. The small number of producers raises difficulties in picking-up the commodities / produce involving high transportation costs. On the other hand dealing with small sized and not well-reputed and established firms is a risky affair. The situation can be worse, when the buying arrangements are verbal agreements, leading to the frequent breach of contracts. The duration of almost all of these contracts in not specified either. According to the responses received from the Hub Offices, apparently, the producers in Ratnapura have been able to meet contract obligations in general in respect of delivery schedules, agreed quantity and quality. Buyers on the other hand have failed at times, to collect the commodities such as fresh milk and flowers in time, thus causing losses to the producers. The need for a milk chilling center has been proposed by many Hub Offices as a solution to this problem. In respect of dairy production the difficulties in obtaining subsidies for the construction of cattle sheds has also been cited as a problem.

However, some buyers from their part provide extension advice on cultivation, transport facilities and advice on quality and standardization particularly for the cut flower producers.

The supports provided by the Hub Offices to the producers and their groups are noteworthy, particularly in respect of dairy production. The Hub Offices help in finding milch cows to be bought, provide help and guidance in purchasing animals, introduce producer members to the banks and insurance schemes, conduct workshops, awareness and training programs, and arrange programs for providing veterinary advice. Also in case of other commodities / products the Hub Offices help in identifying prospective buyers, make arrangements to provide technical know-how and advice, and provide training on how to keep and maintain books of the VO/PG of accounts. Since VSCOs will not

be able to grant credit facilities at a large scale, getting the support to the producer groups from banking institutions is also necessary. Provision of other facilities such as ,milk collecting and chilling centers, transport facilities, supply of instruments and tools necessary in marketing such as fat measuring instruments, moisture meters etc. are also required.

PPP Arrangements in Hambantota District:

Responses to the Postal Survey were received from 4 Hub Offices of the Hambantota district. They were Tissamaharama, Suriyawewa , Angunakolapelessa and Weeraketiya. From these responses the following information was elicited on the existing PPP arrangements in the district.

Table 8. Details of PPP Arrangements in the Hambantota District

Hub Office Area	Commodity/ Service	No. of Producer Groups	No. of Producers	Name of Buyer	Name of Service Providers
Tissamaharama	Seed Paddy	01	44	District Federation	
Tissamaharama	Unilever Products	01	10	Unilever	
Suriyawewa	Fresh Milk	01	17	MILCO	
Suriyawewa	Passion Fruit	01	32	Canaries Foods	Gemidiriya Federation
Suriyawewa	Seed Paddy	01	96	District Federation	
Angunakolapelessa	Fresh Milk	02	29	MILCO	
Angunakolapelessa	Passion Fruit	-	24	Local Market	
Weeraketiya	Fresh Milk	01	11	MILCO	
Weeraketiya	Coir Ropes	01	06	Haley's	
Weeraketiya	Garments	01	01	-	
Total No. Of Producer Groups = 10			Total No. of Producers = 270		

Source: Postal Survey 2011

It is seen that in Hambantota PPP arrangements exist for a number of commodities including fresh milk, coir based products, garments, Passion Fruits and Seed Paddy. Although there are about 235 VO's in the district, the number of Producer Groups is very small (only 10). This means that a large number of VO's have kept away from PPP arrangements. The total number of producers engaged in PPP is also very small, altogether 270. Another important feature in the PPP arrangements in Hambantota district is that, the District Federation is playing a major role in promotion of group seed paddy production in Suriyawewa and Tissamaharama Hub Office areas. However, it is not clear whether this federation sells seed paddy directly to the farmers or through a government department like Dept. of Agriculture / Agrarian Services or a private agribusiness firm like CIC Ltd. Another feature is that except in the cases of MILCO and Haley's Co. Ltd all other buyers who are linked with the producers are themselves micro and small businesses which do not have a good reputation as reliable companies.

Another important feature of most of the PPP arrangements in Hambantota is their informal character. The PPP arrangement for seed paddy production is the only exception. In this case the District Federation has entered into written contracts with producers. All other agreements listed in table .8 are verbal agreements. Even in the case of fresh milk the MILCO has not entered into contracts with producer groups. The MILCO provides transport from collection centers and provide advice on quality specifications and grading of milk. It also pays an incentive payment for better quality milk. The duration of almost all of these contracts has not been specified either.

As revealed from the responses received from the Hub Offices, apparently, the producers in Hambantota district have been able to meet contract obligations in general in respect of delivery schedules, agreed quantity and quality. Buyers on the other hand have failed at times, to collect the commodities such as fresh milk in time, thus causing losses to the producers. The need for a milk chilling center has been proposed by many Hub Offices as a solution to this problem. In respect of dairy production the difficulties in obtaining subsidies for the construction of cattle sheds have also been cited as an important one.

However, some buyers from their part provide extension advice on cultivation, transport facilities and advice on quality and standardization particularly for the Passion Fruit producers. In case of seed paddy producers the federation provides material inputs such as seeds, supply packing materials, disseminate technology and provide agricultural extension advice, provide advice on quality and

standards, and arrange for transport facilities and marketing the produce. In purchasing seed paddy it is reported by Hub Offices that there are delays in inspecting quality and paying the sales proceeds to the producers.

The supports provided by the Hub Offices to the producers and their groups are noteworthy, particularly in respect of dairy production. The Hub Offices help producers by introducing producer members to the banks and insurance schemes, conduct workshops, awareness and training programs, and arrange programs for providing veterinary advice, through veterinary surgeons, although there are certain shortcomings. There is a need to solicit the active support of the Veterinary Offices in the area to provide required services to livestock PGs. The extension advice on the nutritional requirement of animals and other technical aspects, training on animal diseases and animal health, holding of animal clinics, promotional workshops, exposure visits etc. need to be arranged / organized by the Hub Offices with the help of qualified Veterinary Surgeons and their staff as a part of the PPP package. Also in case of other commodities / products the Hub Offices help in identifying and coordinating with prospective buyers, make arrangements to provide technical know-how and advice, arrange for exposure visits and educational tours, and provide training on how to keep and maintain books of the VO/PG. of accounts,. Since VSCOs will not be able to grant credit facilities at a large scale, getting the support to the producer groups from banking institutions is also necessary. Provision of other facilities such as, opening of more milk collecting and chilling centers, transport facilities, supply of instruments and tools necessary in marketing such as fat measuring instruments etc. are also need to be provided to the PGS.

PPP Arrangements in Badulla District:

Badulla district commenced the implementation of the Project at the very early stages, and the project activities began with Batch 1 of Phase I. Responses to the Postal Survey were received from 8 Hub Offices of the district but only Mahiyangana, Welimada, Passara, Lunugala, and Ella had PPP arrangements. From the responses received the following information was elicited on the existing PPP arrangements in the district.

Table 9. Details of PPP Arrangements in the Badulla District

Hub	Office	Commodity/ Service	No.	of	No.	of	Name of Buyer
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Area		Producer Groups	Producers	
Ella	Tea Leaves	03	565	TSHDA
Ella	Fresh Milk	02	51	MILCO
Ella	Vegetables	01	60	Wholesale/Retail
Lunugala	Tea Leaves	01	56	Sri Lanka Tea Board
Lunugala	Poly Tunnels(Vegetables)	01	18	Chula Champika Agro Products
Lunugala	Fresh Milk	02	60	MILCO
Passara	Poly Tunnels	01	31	Chula Champika Agro Products
Welimada	Potato	07	85	Cargills
Welimada	Fresh Milk	04	75	Lucky Yoghurt
Welimada	Tea Leaves	02	45	Te Shakhty
Welimada	Flowers	01	75	
Mahiyangana	Seed Paddy	01	50	Agrarian Services
Mahiyangana	Maize	03	120	Prima Co.
Mahiyangana	Fresh Milk	02	60	MILCO
Mahiyangana	Poly Tunnels	01	19	-
Total Number of Producer Groups = 32		Total Number of Producers = 1370		

Source: Postal Survey 2011

It is seen that in Badulla, PPP arrangements exist for a number of commodities including fresh milk, seed paddy, maize, potatoes, tea leaves, flowers, vegetables and poly tunnels. Although there are about 324 VOs in the district, the number of Producer Groups is small (only 32). The total number of producers engaged in PPP is however, greater than in all other districts coming under the SCDLI Project, altogether 1370. It is noteworthy that in the TSHDA PPP arrangement, the number of producers involved is quite substantial. In this arrangement altogether 565 producers are involved who

belonged to three (3) Producer Groups. Another important feature in the PPP arrangements in Badulla district is that, most of the PPP arrangements have been entered into with the reputed private and public sector companies / institutions. They are Cargills, Prima, Lucky Yoghurt, MILCO, TSHDA, Sri Lanka Tea Board, Te' Shakhty and Dept. of Agrarian Services. . The other buyers who are linked with the producers however, are themselves micro and small businesses. It is important to note that three district Federations in the Badulla district are having links with MILCO to sell Fresh Milk. There are 6 PGs in the Hub Office areas of Mahiyangana, Lunugala and Ella with a total membership of 171 milk producers selling their products to MILCO. Another fact is that even though many partner companies are reputed private and public companies / institutions most of the agreements mentioned in table 6 are verbal agreements. The MILCO is just expanding its' collection center network and any producer whether they belonged to a PG or not can sell his/ her product to MILCO. The MILCO provide transport from collection centers and provide advice on quality specifications and grading of milk. It also pays an incentive payment for better quality milk. The duration of almost all of these contracts has not been specified either.

The contracting firm/ institution usually supply other services to producers in addition to the buying of the product. For example, in the case of poly tunnels the buying firm has agreed to supply seeds / planting materials, fertilizers, agro- chemicals, extension advice and transport facilities in addition to buying of the product. However, more often buyer fails to supply these to the producers, thus breaching the terms of the contract. But, in the agreement on maize buying the Prima Company supplies seeds, packaging materials (poly sacks) and provide transport facilities without fail. The MILCO provide transport facilities from collection point to the Chilling Center, and provide advice to the producers on the quality control of milk. In the tea leaves buying contract the TSHDA also supplies planting materials, fertilizers, chemicals, and extension advice, technology, and transport facilities..

The producers in Badulla district have been able to meet contract obligations in general in respect of delivery schedules, agreed quantity and quality. Buyers on the other hand have failed at times, to collect the commodities such as fresh milk in time, thus causing losses to the producers. In respect of dairy production the difficulties in obtaining subsidies for the construction of cattle sheds have also been cited as an important one.

The supports provided by the Hub Offices to the producers and their groups are noteworthy for the promotion of PPP arrangements. Also in case of other commodities / products the Hub Offices help in identifying and coordinating with prospective buyers, make arrangements to provide technical know-how and advice through suitable resource persons, arrange for exposure visits and educational tours, and provide training on how to keep and maintain books of the VO/PG. of accounts. Since VSCOs will not be able to grant credit facilities at a large scale, getting the support to the producer groups from banking institutions is also done by the Hub Offices. Provision of other facilities such as, opening of more milk collecting and chilling centers, provision of transport facilities, supply of instruments and tools necessary in marketing such as moisture meters, fat measuring instruments etc. with the assistance of buyers are needed to be provided to the PGs.

Apparently, there is a serious shortcoming of the PPP arrangements of MILCO in the Badulla district. That is the non-availability of a technical service provider under the existing arrangement or alternatively, lack of advice on livestock production from the buying organization itself. The extension advice on the nutritional requirement of animals and other technical aspects, training on animal diseases and animal health, holding of animal clinics, promotional workshops, exposure visits etc. need to be arranged / organized by the Hub Offices with the help of qualified Veterinary Surgeons and their staff as a part of the PPP package.

PPP Arrangements in the Polonnaruwa District:

PPP arrangements began in the Polonnaruwa district during Phase I period, and it has about 6-7 years' experience in such arrangements. However, response to the Postal Survey was received only from 1 Hub Office of the district. It is from the Welikanda / Dimbulagala Hub Office. The commodity for which data was provided by the Hub Office is seed Paddy. The seed paddy production is undertaken by 225 producers who belong to 5 Producer Groups. The seed paddy is purchased by the Govt. Farm in Polonnaruwa, through the District Community Professionals Learning and Training Center (DCPLTC). This is an arrangement not found in the other districts coming under the project. Another important feature in this arrangement is that the producers have a written contract with the Govt. Farm and this contract has been signed by the producers themselves. The contract was initiated by the SCDLIP Hub Office and the Producer Groups. The period of contract was 6 months with the possibility of extension

of time. In addition to the purchase of seed paddy, the buyer (Govt. Farm) provides agricultural extension advice, packaging material and transport facilities.

The producer groups have been successful in adhering to the contract provisions in supplying the agreed quantity, in agreed quality at the fixed delivery dates. The only service provided by the Hub Office for this arrangement was the coordination of the activities of the producers and the buyer. In general, the Producers do not face any difficulties / problems in dealing with this buyer. However, the Govt. Farm strictly adheres to product quality and if by any chance the seed paddy is rejected due to poor quality and standards, the producer is unable to sell his seed paddy in the open market. The Hub Office suggests that if the project can provide a seed cleaning equipment to the Producer Group this problem can be easily overcome.

PPP Arrangements in the Nuwaraeliya District:

Only Walapone and Kothmale Hub Offices responded to the PPP questionnaires sent by post to all the Hub Offices located in the sampled areas of the Nuwaraeliya district. However, even from these two HO areas the PPP arrangements have got off the ground only in Walapone. The SCDLIP was launched in Nuwaraeliya district at the end of June 2010.

Walapone Hub Office area has two PGs; one for seed potatoes and the other for mushrooms. Even here the number of producers involved is very small. There are only 13 farmers in the seed potato group and 22 producers in the mushroom group. Seethaeliya Govt. Seed Potato Farm is the buyer of seed potato while mushrooms are sold to the private traders in the open market.

The potato contract has been initiated by the SCDLIP District Office in Nuwaraeliya, and this arrangement has a written contract between the buyer and the producers. The period of contract has not been specified. In addition to the purchase of seed potato, the buyer (Govt. Farm) provides seeds for multiplication and provides extension advice on how to produce high quality seed potatoes. The potato producers have been able to act according to the contract terms in respect of supplying the agreed quantity in agreed quality. However at times they have failed to keep to the delivery schedules.

Conclusions and Recommendations

Although Monaragala, Polonnaruwa, Badulla, Ratnapura and Hambantota have been pioneering districts under which PPP arrangements were started under the Project from the first batch of the Phase

Onwards, these programs at present are fraught with a number of difficulties. It was understood that the institutional changes introduced under Phase II of the project are still at an unfinished stage, thus adding confusion to the old and established arrangements particularly involving District Federations. Since a substantial number of years have passed since the introduction of Project in the Badulla district, the progress made so far in the promotion of the PPPs there is more satisfactory than those in many other districts. Many programs are progressing with lesser amount of problems including potatoes (Cargills) Maize (Prima) fresh milk (MILCO) Tea leaves (TSHDA) and seed paddy (Dept. of Agrarian Services). The District Federation has been coordinating these arrangements satisfactorily. Although there are about 297 VOs in the Ratnapura district, the number of Producer Groups is very small (only 15). The total number of producers engaged in PPP is also very small, altogether 231. Another important feature in the PPP arrangements is that, except in the case of MILCO all other buyers who are linked with the producers are themselves micro and small businesses which do not have a good reputation as reliable companies. In the Hambantota district the only program that is progressing with lesser amount of problems is the PPP arrangements for seed paddy. In this case also the District Federation has been coordinating this program satisfactorily. In the Polonnaruwa district the only program, which is progressing with lesser amount of problems is the seed paddy program. In this case the DCPLTC is coordinating this arrangement satisfactorily. In Ratnapura district however, a PPP arrangement for tea leaves had to be abandoned due to numerous problems surfaced in implementation and the Federation incurred huge losses..

The Producer Groups that were proposed to be set up under the new institutional structure are just beginning to be formed in these districts. There are doubts on their existence as recognized legal entities. These new producer groups have no funds (at least working capital), or are even unaware of the methods available to them to raise the necessary funds. They lack resources to buy tools and equipment's necessary for cleaning, drying, sorting, grading, standardization and quality control of the produce they sell. They do not have transport or storage facilities. The members lack awareness on the benefits of group action.

In the pioneering districts still the District Federations and a few VOs are taking initiatives on and still are actively involved in PPP arrangements but the sustainability and the existence of such federations

is uncertain under the new institutional set up. The SCDLIP Head Office therefore has to play a proactive role in the future if; they were to promote PPP arrangements in these districts.

Kegalle and Nuwaraeliya Districts have been added to the list of project districts of the SCDLIP only recently, i.e. with the commencement of Batch 7 about 1 ½ years ago. Hence it is too early to expect well developed PPP arrangements in these two Districts. The Producer Groups that are being proposed to be set up under the new institutional structure are just beginning to be formed in the Kegalle and Nuwaraeliya districts. The SCDLIP was launched in the Nuwara Eliya district only 1 ½ years ago and that the contributions to the VDF and LDF are just begun to be received, and therefore the progress made by the Walapone Hub Office in promoting PPP arrangements is praiseworthy. Already two PGs have been formed, and the seed potato program is progressing satisfactorily albeit with minor problems. Since in these two districts PPP arrangements are still at an infant stage, the SCDLIP Head Office has to play a proactive role in the future for the promotion of PPP arrangements in these two districts i.e. starting from scratch. Conducting training programs for staff of the Hub Offices and staff involved in promoting SCDLIP development components in Samurdhi villages, conducting awareness programs for members and office bearers of Producer Groups, (emphasizing the benefits of group action), providing constitutional and legal backing to PGs through appropriate measures, provision of working capital and other financial and physical resources required for group marketing and providing general guidance and supervision in carrying out the activities of PGs and sourcing appropriate business partners and other service providers, negotiating contracts and overseeing their proper implementation are some of the activities that have to be undertaken by the SCDLIP Head Office and the District Office for this purpose.

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Does Government Debt Matter for Economic Growth? A Critical Literature Review with Special Focus to Sri Lanka

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Abstract

At present, continuous accumulation of government debt and its consequences to the economy become a vibrant and debatable topic in Sri Lanka. Analysts and policy makers are divided in their opinion with regard to the economic consequences on the debt incurred by the Sri Lankan government. This study discusses the existing theoretical and empirical literature on the relationship between public debt and economic growth. Initially, the study reviews the theories related to public debt and economic growth nexus and thereafter proceed to survey the recent empirical literature available on the above. It has been observed that the existing theoretical literature on debt and growth nexus suggest highly heterogeneous conclusions despite the negative relationship which exist between public debt and economic growth and are widely accepted by economists. Subsequent to the recent empirical findings of inverted nonlinear relationship between public debt and economic growth, the economists widely focus to find out the optimal debt levels of countries. The study shows an inverted U-shaped nonlinear relationship between public debt and economic growth in Sri Lanka which is between the threshold of 80 per cent and 90 per cent. In addition to the above, the study finds that there is a considerable gap existing among available literature that does not address the channels through which public debt affect economic growth in a detailed manner.

Key word: public debt, economic growth, debt threshold, debt channels

Introduction

The debate over the magnitude of government debt and its relationship to economic growth is always at the forefront of policy discussions among economists. Analysts and policy makers are divided on the nexus between public debt and economic growth whether it is neutral, negative or positive. The Ricardian view emphasises that there is no difference exists between debt finance and tax finance as sources of government expenditure and therefore advocates neutrality of debt to economic growth; the neo-classists however are of the view that public debt has negative

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consequences for economic growth on the long run and therefore suggests a negative correlation between debt and economic growth (Ricardo, 1951, Barro, 1974, Modigliani, 1961 and Diamond, 1965). The Keynes's view on public debt is another doctrine which emphasizes the expansionary government budget for enhancing economic activities of a country (Keynesian, 1936). In addition to these views, recent empirical studies on public debt and its consequences suggest a nonlinear relationship to public debt and economic growth on the long run. These different views and conclusions have kept this topic alive and debatable throughout the centuries.

The relationship between public debt and economic growth is a widely discussed theoretical topic, though its conclusions are highly heterogeneous as explained above. Empirical studies of public debt however are scarce in comparison to the theoretical literature and most of the existing studies in this area are mainly focused on situations in the United States of America (USA), European countries and other developed countries, where debt finance is used to postpone tax collection². The fiscal policy dimensions of a developing country are totally different to that of a developed country. In a developing country government expenditure is higher than revenue in most instances and the government generally continues to operate with deficit budgets. Thus, public debt is used to increase the capacity of the government to meet its expenditure especially capital expenditure for development purposes (Aizenman, Kletzer and Pinto, 2007). It has been observed that the facts relevant to developing countries have been neglected in existing studies related to examine the relationship between public debt and economic growth.

In Sri Lanka, the topic of public debt management takes center position in economic debates prevalent amongst the economists, policy makers and analysis groups, as government of Sri Lanka heavily borrows from bilateral and multilateral agencies as well as international capital markets under commercial terms and invests in infrastructure projects. However, substantial research work has not been conducted to examine the consequences of the high level of public debt stock on the economy of Sri Lanka though there are very few studies which scrutinize the public debt of Sri Lanka in relation to various single aspects of the economy in the past. Banda and Priyadarshane

² Several papers could be cited to prove this argument. Some of those papers are Barro, 1979; Checherita & Rother, 2012 and Cecchetti et. al., 2011

(2014), Deyshappiriya (2012), Fonseka (2008), Kumara and Cooray (2013), and Wijeweera (2005) are some of the studies which evaluate the consequences of public debt of Sri Lanka.

Furthermore, identifying the channels through which debts affect economic growth is a new phenomenon undertaken by the study on public debt and economic growth. Public debt has several consequences on key macroeconomic variables such as interest rate, inflation, consumption, investments, employment and financial markets and some of these consequences are determinant factors of economic growth. In order to identify the channels through which debt affect growth, all the consequences of public debt to the economy need to be identified in detail. Only the few most recent studies touch on this aspect and identifying one or two channels in their studies (Checherita & Rother, 2012). The presence of in-depth studies has not been made available for review.

The reminder of this study is organised as follows: Section 2 discusses the prominent theories related to the nexus between public debt and economic growth and the theories on the channels through which public debt affect economic growth. Section 3 presents the latest empirical literature available on the relationship between public debt and economic growth and the existing empirical studies in relation to public debt channels that affect economic growth. Meanwhile, studies related to public debt of developed countries and developing countries are discussed in section 4. Section 5 discusses on the literature related to Sri Lanka. Finally Section 6 concludes.

Public Debt and Economic Growth: The Theories

Subsequent to the neo-classical responses to traditional economic growth theories, a large volume of literature discusses the relationship between public debt and economic growth and it has also become a vital theme of discussion among economists and policy-makers. Despite this topic being extensively discussed, the findings vary across the studies and no firm agreement has been reached by the economists, analysts and policy makers on how public debt influences economic growth. Three main theoretical views exist in relation to the economic effect of budget deficit and debt finance namely: Ricardian view, Keynesian view and neoclassical view (Bernheim, 1989). Meanwhile, some of the latest studies directly explore the positive impact of public debt on economic growth on the long run even though it has not become popular among policy makers (Alesina & Tabellini, 1990 and Martin, 2009).

Nexus between Public Debt and Economic Growth – Theoretical Foundation

Initially economists focus on the question “is debt finance equal to tax finance?” As Buchanan (1976) mentioned it is an age-old question in the public finance theory. However, subsequent to the neoclassical responses, economists and policy makers confirm that public debt is a matter for economic growth. Subsequently, economists commenced to examine “what type of relationship exists between public debt and economic growth?” The findings for this question are highly heterogeneous and economists suggest different views on public debt theory.

Theoretical framework on the nexus between public debt and economic growth could be built on three pillars namely Ricardian view, Keynesian view and neoclassical view. The existing literature however reveals that the Ricardian, Keynesian and neo-classists views theoretically challenge each other on the nexus between public debt and economic growth. However, it is observed from a practical point of view that one cannot simply conclude that one particular view is correct and other views are incorrect or a particular theory is much more compatible for an economy and the others are irrelevant. Each theory is relevant in a given economic circumstance and therefore one cannot expect to fix a particular school of thought for all economies of the world. In reality, a combination of these different theories and views might work together and the practical consequences of public debt on economic growth will comprise of different paradigms (Bernheim, 1989).

The Neutrality Theory of Public Debt or Ricardian Equivalence

David Ricardo - in the essays on the funding system (1951) - was the first to propose Ricardian equivalence or invariance theorem and subsequently several economists (Musgrave, 1959 and Barro, 1974) contributed to the theorem. According to the invariance theorem, the government debt is not a burden to the economy and under certain assumptions, the choice between debt and tax would not affect the aggregate demand of an economy. The government can borrow to finance the budget deficit and individuals behave in a way that the present tax cut will increase the future taxes and therefore, they reduce the current consumption and increase the savings to pay future tax increases. As a result, the effect of the aggregate demand of an economy would be similar irrespective of whether the government taxes now or later. Accordingly, public debt has no effect on economic growth and does not have a bearing on a government using tax revenue or debt finance to meet its expenditure (Ricardo, 1951, Barro, 1974 and Greiner, 2012).

The Ricardian equivalence theorem depends on several assumptions; 1) people behave as infinite horizon life, 2) capital markets are perfect with the typical person's real discount rate being similar to that of the government, 3) the future taxes and income of the government are certain and 4) the economy functions at a full employment level. Despite a group of economists who continue to endorse that the Ricardian equivalence theorem is valid yet, a powerful counterattack was spearheaded by the contributions of Buchanan (1976), Blanchard (1995) and Weil (1989). They mainly criticize the assumptions and argue that these assumptions are invalid in a practical context.

Meanwhile, several weaknesses can be highlighted in the Ricardian equivalence theorem. The first is that Ricardo could not prove his theorem by an empirical analysis. Although Barro was a core contributor to the Ricardian Equivalence (Barro, 1974), he was subsequently convinced that the Ricardian Equivalence is valid only for first-order proposition (Barro, 1979). The third weakness prevalent is the non-practicality of the assumptions, as mentioned above; Ricardo's assumptions are invalid in the real world. Therefore, in view of the above weaknesses, it raises doubt on the practicality of the Ricardian Equivalence theorem and holding the invariance theorem for the purpose of analyzing public debt and economic growth.

Neoclassical View on Public Debt or Negative Consequences of Debt

Neoclassical view on public debt takes an opposite view to the Ricardian equivalence theorem and advocates that changes in public debt have an impact on economic growth. Accordingly, changes in government borrowings and a high level of public debt would have a negative impact on economic growth on the long run (Elmendorf and Mankiw, 1999). Economists and policy makers widely accepted the above neoclassical view by suggesting theoretically and empirically that high debt level is negatively correlated with the growth rate of an economy and therefore suggest an adverse relationship between public debt and economic growth on the long run (Modigliani, 1961, Diamond, 1965, Borrow, 1979 and Blanchard, 1985).

The main argument of this theory is based on the fact that individuals will not rationally behave as expected in the Ricardian view and therefore they will not reduce the current consumption level by expecting future tax increases. Accordingly tax reduction and debt finance would have positive

effect on disposable income, aggregate demand and overall output on the short run and reduce the utility level of an individual eventually (Modigliani, 1961 and Diamond 1965). Meanwhile, when substantial public debt increases inflation, economic uncertainties and financial depression, it would have a negative bearing even on the short run (Cochrane, 2011). Resultantly, there is the possibility of negative consequences of public debt in both the short and long term.

Further, it has been identified that high government debt increases the future debt service payment of an economy, especially interest payments on government borrowings due to the increase in future taxes whilst it reduces the disposable income of an individual, savings and thus capital stock on the long run (Diamond, 1965). As a result, the debt financing of government expenditure is likely to have negative consequences on the output of the economy through the capital accumulation.

When economists deal with the neoclassical view on public debt they mainly assumed two economic conditions; the first assumption being that the economy is operated at equilibrium condition or in a steady state condition. The second assumption being that government expenditure for goods and services are fixed and debt finance is used to smooth the tax rates during the period (Barro, 1979). However, the applicability of these two assumptions for a developing country is a controversial issue, since developing countries do not operate at steady state economic conditions and the deficit budgets are submitted by governments for the purpose of meeting additional capital expenditure rather than smoothening tax rates.

Keynesian View on Public Debt or Positive Consequences of Debt

The Keynesian view on public debt advocates positive consequences of budget deficit and debt finance on economic activities, especially in the short term. During the time of prolonged depression in the 1930s, the Keynesian suggested that governments should increase their expenditure and decrease the taxes to boost the economies. This view was further advocated, that increased government expenditure, directly as well as through a chain of indirect effects, is likely stimulate aggregate demand of economy. On the other hand a tax cut would increase the disposable income of individuals and that would create more demand for goods and services. Eventually these consequences would increase the employment level of the economy and this cycle will be repeated with the same effect. Therefore, if resources are unemployed in an economy, government should

take initiatives to expand the fiscal policy; increase spending, cut taxes and the use of debt finance to boost economic growth (Keynesian, 1936).

The Keynesian theory however is under criticism by neo-classists since it concerns the impact only on the short term and it does not consider the impact in relation to future generations. The Keynesian economists moreover counter argue that “*the long run is a sequence of short runs*” and therefore the impact on the current generation is more important than the future generations (Bernheim, 1989). Further, the Keynesian view is a contradiction of the conventional view on fiscal policy and public debt where it was believed, at that time, that the market economy recovers on its own, government interventions are not preferable and the balanced budget is the best fiscal approach. However, the 2008/09 global financial crisis proves that government intervention is necessary to recover from a recession. The US Treasury and European Central Bank had intervened in their economy and financial markets to recover from the economic depression in those countries. Further, The Keynesian analysis suggests to implement a short term solution to boost the economy and to deal with a situation of under employment and underutilization of resources. Therefore the applicability of the Keynesian theory for an equilibrium level of the economy on the long run is a questionable matter. It reveals the inadequacy of the Keynesian theory to handle the fiscal policy and debt finance for a general economic condition on the long run.

Conventional View on Public Debt

The Elmendorf & Mankiw (1999) proposes the conventional view of public debt. It is basically a combination of the Keynesian view and the neoclassical view on public debt. According to the conventional theory of public debt it is assumed that the economy is Keynesian in the short run and thus changes in government debt would have positive consequences to the economy³. Meanwhile it is assumed that the economy is neoclassical on the long run. Therefore, changes in public debt and the high level of public debt would have negative consequences on the economy in the long run. Accordingly, the conventional view suggests that changes in public debt positively affect the economic growth in the short term and negatively affect the total output and economic growth in the long run.

³ Since it has been discussed in the section of Keynesian view of public debt in a detailed manner, the positive relationship has not been discussed here.

However, the conventional view in relation to public debt mainly discusses its arguments and suggestions consistent with the neoclassical assumptions and economic conditions. The Elmendorf and Mankiw (1998) mentioned that most of the economists and policy makers accept the conventional view on public debt. Therefore, it is a generally accepted theory on the relationship between public debt and economic growth.

Non-linear Relationship between debt and growth

As confirmed by Greiner, 2012 and Panizza & Presbitero, 2013, theoretical literature that directly articulates the inverted U-shaped nonlinear relationship between government debt and economic growth has not been made available for review. However, when examining the negative consequences of government debt on output level, it was also noted that the reverse of the negative consequences of debt on growth hold in the long run i.e. in case of a reduction in government debt tend to generate a positive impact on the long run (Saint-Paul, 1992). The debt hang theories also emphasize the non-linearity and debt threshold effect for debt (Krugman, 1988 and Sachs, 1989)⁴. Furthermore, the empirical studies widely confirm the inverted U-shaped nonlinear relationship between public debt and economic growth. Therefore, it can be articulated that a low debt level has a positive impact on growth, however when it increases to a substantial level of debt stock, it has negative consequences on the economic growth.

The Channels Through Which Debt Affect Growth – Theoretical Backgrounds

The existing studies on budget deficit and public debt mainly focus on determining what type of relationship can exist between government debt and economic growth. However, only few studies examine what are the channels through which debt affect growth in an economy. It is very difficult to identify a single study that explores all the possible channels through which public debt can impact economic growth⁵. In order to maintain a balance in the key macro-economic variables, it is important for policy makers to understand the chain of consequences arising from high public debt and identify all the possible macro-economic channels through which public debt influences the real

⁴ The above debt overhang theories are mostly applicable for external debt of an economy, but we can't deny the applicability for a nation's total debt including domestic debt.

⁵ Partillo et al. 2004, an IMF working paper discussed on the channels from external debt that impact economic growth and it however doesn't consider the public debt.

sector of economy. Meanwhile, there is a considerable gap existing among available literature that does not address the channels from public debt to economic growth in a detailed manner.

The available studies on the channels from public debt to economic growth mainly suggest two channels. The first channel conveying that government borrowing would affect consumption and it decreases national saving and crowd out private capital accumulation which in turn will affect economic growth on the long run (Barro, 1979 and Blanchard, 1985). The second channel is that when there is a high level of public debt, the government needs to increase tax rates for the purpose of debt repayments. The increased taxes would reduce the private investment levels and that would negatively impact on capital accumulation and economic growth (Modigliani, 1961 and Diamond, 1965). In both type of studies, the commonly identified channels from public debt to economic growth are consumption, savings, interest rate, investments, capital accumulation, tax rates and debt repayments.

Meanwhile, research studies on fiscal policy, budget deficit and public debt individually and separately suggest various channels through which government debt would affect the different key macro-economic variables. As already suggested in the existing studies, some of the above identified key micro-economic variables determinate the extent of economic growth. Therefore, one could establish the ultimate channels from public debt to economic growth by establishing the link between the channels from public debt to key macro-economic variables and subsequently the channels from the above key macro-economic variables to economic growth.

Savings and Investments Channel

The discussions on the existing studies largely deliberate on savings and investment channels (Elmendorf and Mankiw, 1999, Schclarek, 2004, Kumar & Woo, 2010 and Checherita & Rother, 2012). They advocate that while a government is holding its spending constant, postponement of taxes to subsequent generations and the use of debt finance to fuel the deficit would increase the disposable income of individuals in a short space. The increased disposable income would therefore raise marginal propensity to consumption and thus stimulate the total consumption of individuals. Moreover, the increased consumption obviously decreases the savings of individuals and investments as well as crowd out total capital accumulation. All these consequences would negatively impact the output of an economy on the long run (Bernheim, 1989).

The conventional view of public debt explains the savings and investment channel in the following manner. Let's consider a closed economy and the private sector budget constraint would be equal to private consumption (C), private savings (S) and Tax payment (T).

$$Y = C + S + T \quad (1)$$

Meanwhile the budget constraint for National income would be equal to private consumption I, investments (I) and government expenditure (G).

$$Y = C + I + G \quad (2)$$

By combining the above two identities, it could be derived that the national savings equals to investments.

$$C + S + T = C + I + G$$

$$S + (T - G) = I \quad (3)$$

According to the above identities, national savings is the combination of private savings (s) and public savings (T – G) and that jointly contributes towards the total investment. Meanwhile, when there is a budget deficit, the government makes negative savings and that affects national savings and thereby the total investments of the economy.

This channel shows that government borrowings affect the economic growth through a channel of government savings, aggregate consumption, national savings, investments and capital stock accumulation. Eventually the reduced capital stock would negatively affect the economic growth on the long run.

Interest Rate Channel

Diamond (1965), Blanchard (1985), Bernheim (1989) Elmendorf and Mankiw (1999) and a dozen other studies discuss the consequences from government debt on interest rate. This channel is established from the influence of the previous channel, the savings and investment channel. Accordingly, government borrowings reduce private investments and the reduced private investments will result in lower capital stock of economy on the long run. As a result, marginal product of capital (MPK) will increase in the economy. Resultantly, individuals will not accept the

previous interest rate for their savings and will demand a higher interest rate equal to the new MPK. Eventually, when there is change in public debt it raises the interest rate. Diamond (1965) argued that increased interest rates reduce private investments and thus crowd out capital accumulation in the economy on the long run. This effect will continue to repeat, until the equilibrium is re-established.

Engen and Hubbard (2004) suggest a model based on Cobb-Douglas production function to understand the impact of government debt on interest rate (r) and subsequent effects. Accordingly, let's assume a basic Cobb-Douglas production function with two factors namely capital and labour

$$Y = AK^\alpha L^{(1-\alpha)} \quad (4)$$

Where, Y , A , K and L denote as customary total output, productivity, capital and labour respectively. Furthermore, α is a coefficient of factor productivity and the total return to capital would be $MPK * K$. As α equal capital output ratio, it could be write as follows

$$\alpha = (MPK * K) / Y \quad (5)$$

It implies that the interest rate is determined by

$$r = MPK = \alpha * (Y/K) = \alpha * A * (L/K)^{(1-\alpha)} \quad (6)$$

If government debt completely crowd out capital, so that

$$\partial K / \partial D = -1, \quad (7)$$

In this case, by holding other variables constant if government increases its debt that causes to increases interest rate in the economy.

$$\partial r / \partial D = (\partial r / \partial K) (\partial K / \partial D) = \alpha \times (1-\alpha) \times (Y/K^2) > 0 \quad (8)$$

The above identities explain the impact of government debt on interest rate through the provision of capital stock available in the economy. Therefore, it could be summarized that when the government resorts to borrowing from the domestic market this initiative is likely to create an upward pressure on interest rate and thus reduce private investments resulting in capital stock accumulation. Eventually these consequences would negatively impact the output of economy.

Meanwhile, increased interest rate will eventually increase the interest payments on the government debt. Resultantly, this will lead to two consequences impacting on the economy. Initially, In order to source the finance for increased interest payment, the government need to increase the tax rate which will eventually curtail private investments, crowd out capital accumulation and negatively affect the total output of the economy (Diamond, 1965) and the second consequence being, due to incurring of additional interest payments, the government is compelled to curtail its expenditure especially capital expenditure which would harm economic growth on the long run.

In view of above, it can be suggested that the interest rate channel works in both circumstances, i.e. at the point of new borrowing as well as at the time of repaying existing debt. Accordingly, the borrowing time channel commences with lower level of capital stock and move to increasing of MPK, increased interest rates, lower private investments and crowd out capital accumulation. The Repaying time channel commences with a high interest rate and move either towards high debt repayments, high tax charges, decreased private investments and crowd out capital accumulation or towards high debt repayments, less government's capital expenditure and lower government capital stock found in the economy. Eventually these consequences would negatively impact on the output of the economy.

Expansionary Consumption and National Output Channel

Keynesian (1936), Bernheim (1989), Elmendorf and Mankiw (1999) and Aloui (2013) discuss on the basic principles of expansionary consumption and national output channel. Keynesian economists suggest that an increase in government debt increases the disposable income of households which results in stimulating the consumption level of individuals and thus increase the aggregate demand of the economy. According to the Keynesian view this increased aggregate demand would expand total economic activities and national output in a short space. It is however a contradiction to the neo-classists' view of the long run impact of public debt where an increase in government debt raise interest rate, decrease private investments, crowd out capital accumulation and slow down the economy over a long period. Therefore, the expansionary consumption and national output channel could be used to capture the shorter period impact of public debt on the macro economic variables though the long run impact which could be captured through the first two channels explained above.

The Keynesian analysts advocate the budgetary multiplier effect under two assumptions. First, resources are under-utilized in the economy and secondly there are liquidity constrained individuals existing in the economy. The second assumption along with the sticky price condition confirms that the expansion of the fiscal policy would increase the individuals' consumption level and aggregate demand of the economy which would eventually boost the economic growth in the short term. Furthermore, the sticky price condition is more important to this channel. If the price level of goods and services increases with the increasing of aggregate demands, this channel will not work as expected.

According to the sticky price model, government debt has a positive effect on economic growth through the channel of disposable income, individuals' consumption levels, aggregate demand and economic activity. Eventually, these consequences would boost the total output of the economy.

Price Level Channel

Fiscal policy has influenced monetary policy through several transmission mechanisms. The first mechanism is through the interest rate, which was already discussed above under interest rate channel. The second is through the seignorage effect⁶. Elmendorf and Mankiw (1998) discuss the second mechanism in their conventional view of public debt and argue that in a high debt level scenario the government may face difficulties to finance the debt service payments through reissuing debt instruments. As a result, the Treasury, the institution which is in-charge of fiscal policy can pressure the Central Bank, the institution which is in-charge of monetary policy to issue new currency for the purpose of debt service payments. This debt monetisation would create inflationary effect to the economy and harm the economic growth on the long run.

The third mechanism is achieved through the price level of goods and services. Elmendorf and Mankiw (1999), Cochrane (2001), Kwon et. al (2006) and several other studies discuss the third transmission channel. The fiscal theory on the price level (FTPL) explains the links between budget deficit and economic growth (Leeper 2001, Sims 1994 and Woodford, 1994). The FTPL suggest

⁶ Seignorage effect in relation to public debt means the government meets its debt obligations through issuing new currency.

that fiscal policy is a determinant of the price level and thus inflation of an economy. Accordingly, when a government has a deficit budget and incurs more expenses, individuals try to consume more and thus the aggregate demand would increase in the economy. Eventually upward pressure on aggregate demand creates inflationary effect on the economy⁷.

The above discussed literature suggest that fiscal policy is a determinant of inflation and an increase in public debt creates an inflationary effect on the economy especially at a high level of debt stock. Therefore it could be suggested that public debt affects the economic growth through the price level channel in two ways. The first manner comprises of debt service payments, money supply, inflation and economic growth, whilst the second encompasses consumption, aggregate demand, price level, inflation and economic growth.

Debt Repayment Channel

The debt repayment channel comes to the forefront at a time when an economy experiences increased debt repayments and its consequences on the long run. The theories which deal with short term impact on public debt to the economy (Keynesian view on public debt) may not capture this channel. The debt repayment channel is one of the places where the David Ricardo's invariance theorem takes an opposite view to the neoclassical view on public debt. The Ricardian equivalence theorem argues that individuals are more rational and they would consider the consequences from the point of future debt repayments at the time of enjoying current tax reductions. However neoclassicists argue that individuals are not rational and therefore repayment consequences would affect the economy. The debt repayment channel becomes a reality under the assumption of the neoclassical view only.

The high value of public debt stock would eventually increase the debt service payments of the government in the long run. This would give rise to two consequences to the economy. The first, in order to raise the finance for the increased interest payment, the government need to increase the tax rate and this would curtail private investments, crowd out capital accumulation and thus negatively affect the total output of the economy (Diamond, 1965). The second consequence arises as a result of incurring additional interest payments, when the government is compelled curtail its expenditures

⁷ Although it looks that price level channel contradicts to expansionary consumption channel, the economic conditions, time space and assumptions are different in both channels. Therefore both channels could be applied simultaneously.

especially capital expenditure and this would harm the government capital accumulation as well as economic growth on the long run.

In view of above, it can be concluded that a high level of public debt increases debt repayment of the government and that can affect either private capital accumulation or government capital accumulation. As a result, the capital stock of the economy decreases in the long run and that affects the total economic output. Therefore, debt repayment affects economic growth through two channels. The first channel comprises of debt repayments, tax rates, private investments and capital accumulation, whilst the second channel encompasses debt repayment, government expenditure, and government capital stock.

Risk Premium Channel

The risk premium channel is more relevant to foreign currency debt of an economy. When a government borrows heavily from foreign sources, it exposes itself to several additional risks such as foreign exchange risk, country risk, political risk etc. As a result, the risk premium of the country will inevitably increase in the case of a high level of foreign debt⁸. The increased risk premium will result in the government having to pay additional interest rates on its foreign currency borrowings. This increases interest payments on foreign currency debt and thus increases the risk premium which would eventually have consequences on interest payments, tax rates, private investments, capital accumulations and government's capital expenditure. Available existing studies do not suggest by theory that there is a relationship between high foreign debt and risk premium of country, but conventional wisdom theory is used to establish the relationship between the above two variables⁹. Eventually it can be concluded that public debt affect economic growth through the channels of risk premium, interest rates, interest payments, tax rates, private investments and capital accumulations.

Nexus Between Public Debt and Economic Growth: The Empirical Evidences

⁸ Country risk premium means “the additional risk associated with investing in an international company rather than the domestic market”. When a country borrow from international capital market, the interest rate will be determined based on certain benchmark rate plus a markup for country risk premium. Therefore the country risk premium will influence the interest cost of the government foreign borrowings.

⁹ Pattillo (2004) discuss about this channel. However, it deals with foreign debt not the external public debt.

Empirical studies on the relationship between public debt and economic growth has not been discussed extensively in comparison to the theoretical literature available on the same subject. Conventionally, empirical findings on the relationship between public debt and economic growth are mostly consistent with the theoretical findings and suggest a negative relationship between public debt and economic growth. However, the latest empirical studies widely suggest a nonlinear relationship between public debt and economic growth which is not supported by theory (Reinhart & Rogoff, 2012 and Checherita & Rother, 2012).

The existing empirical studies on the relationship between public debt and economic growth propose various conclusions and suggestions. Based on the findings discussed in the empirical studies, public debt and economic growth could be divided into two categories. The first type of empirical studies suggest an inverse relationship between public debt and economic growth (Kumar & Woo, 2010) while, the second type of empirical studies suggest a nonlinear relationship between the above two variables (Checherita & Rother, 2012 and Reinhart & Rogoff, 2012). As discussed in the theoretical literature section, empirically very few studies suggest the neutrality and positive relationship between public debt and economic growth (Drakos, 2001 and Singh 1999).

Empirical studies on the non-linear Relationship Between Debt and Growth

The latest empirical studies highlight a non-linear relationship between government debt and economic growth (Reinhart and Rogoff, 2010 and Checherita & Rother, 2012). A large volume of panel data sets confirm the existence of a nonlinear relationship which highlights a new paradigm for the existing literature on the relationship between government debt and economic growth. According to the nonlinear relationship, public debt has a positive relationship up to a certain threshold and beyond that point, the impact on economic growth becomes negative (Cohen, 1997, Partillo, 2002, Checherita & Rother, 2012 and Reinhart & Rogoff, 2012).

Reinhart & Rogoff, 2012 in their influential paper discusses that when public debt goes beyond the 90 per cent level debt become negatively correlated to the economic growth and a link could not be identified, below the 90 per cent of GDP and therefore they concluded that the optimum debt level would be 90 per cent of the GDP. The above paper used comprehensive databases for the analysis including more than 200 years observations from developed as well as developing countries. They further argue that when the debt goes beyond the 90 per cent level it affects the economic growth by

one (01) per cent. However, these findings were challenged and counter argued by “Reinhart and Rogoff who made significant errors in reaching the conclusion that countries facing public debt to GDP ratios above 90 per cent will experience a major decline in GDP Growth” (Herndon, Ash & Pollin, 2013).

Checheritta and Rother (2012) and Baum et. al., 2013 are other studies which have been undertaken on public debt and economic growth, which similarly found an inverted U-shaped non-linear impact of public debt on economic growth for advanced economics, European and OECD countries. However, public debt threshold limit beyond which debt poses negative consequences to the economic growth differ from study to study. Checherita and Rother (2012) concluded that the turning point at 90 – 100 per cent of GDP beyond which public debt is associated with the lower long term economic growth.

In addition to the above two studies, Baum et al (2013) also found similar results with a slightly higher threshold point. The results of Baum et al (2013) are consistent with the conventional theory of public debt and identified that the short term impact of debt on GDP growth is positive and debt level goes beyond 95 per cent of GDP, whilst additional debts have a negative impact on economic growth. The interesting finding of this study concludes that the correlation between debt and growth are statistically significant where the debt levels are below 67 per cent or beyond the 95 per cent and the debt levels are between the 67 – 95 per cent whilst the correlation between debt and growth are insignificant. One more study, Cecchetti et. al. (2011) found nonlinearity as well as a threshold level at 85 per cent of GDP. Caner, Grennes and Koehler - Gieb (2010) used panel data from several countries and found that the threshold level remains at 77 per cent of GDP beyond which public debt becomes damaging to economic growth.

Although the different studies found similar relationships between public debt and economic growth the turning point is identified as the threshold limit beyond which debt becomes negative to the growth would differ from study to study. This highlights heterogeneity effect of public debt on economic growth.

Negative Correlation between Debt and Growth

The negative relationship between public debt and economic growth is a long before accepted concept and economists and policy makers continue to widely accept the negative relationship between debt and growth in the long run. Theoretically proved negative relationship between public debt and economic growth has been successfully evidenced in empirically as well. Afonso & Jalles (2013), Kumar & Woo (2010), Panizza and Presbitero (2012) and Sen et. al. (2006) discusses negative consequences of public debt on economic growth in the long run. Sample data of these studies are well diversified including developed countries as well as developing countries in the African and Asian Region.

In certain circumstances, new borrowings and high public debt severely affect the economic growth of a country. For instance, when a government borrow externally and make the repayments to parties outside the country, the negative consequences would be more than the domestic borrowings of the government (Panizza, 2008; Putunoi & Mutuku, 2012 and Tsintzos & Efthimiadis, 2011). Furthermore, an increase in public debt during a recession period would have much more consequences to the GDP than the public borrowing in expansionary periods (Taylor et. al., 2012). During an expansionary period, government and economy grow at a higher rate; therefore increase in public debt would have less response to GDP as debt-to-GDP ratio is reduced during an expansionary period in comparison to a recession period.

The Channels Through Which Debt Impacts Growth – The Empirical Evidences

Similar to theoretical literature, the empirical literature on identifying the channels through which debt affects economic growth is also a rarely discussed area and only a few empirical studies are available for review (Checherita and Rother, 2012). None of the empirical studies made available that make an attempt to mainly engage and focus on identifying and estimating all possible channels from government debt to economic growth. However, a few empirical studies examine debt channels as a part of their main study on public debt. As a result, strong empirical background for identifying and estimating the above said debt channels have not been made available for review. However, it has been brought to notice of the availability of empirical studies which examine the relationship between the public debt and key macroeconomic variables such as interest rate, national savings, consumption, inflation, investment, fertility rate and etc (Major et. al, 2013, Ismihan & Ozhan, 2012, Hubbard (2012) and Bohn, 2011). However, the purpose of these studies

does not attempt to identify the channels from debt to economic growth, but rather empirical studies undertaken to explore the empirical evidence for debt channels.

Savings and investment Channel

Reinhart & Rogoff (2012) mentioned that there are two identified potential channels through which public debt lead to low growth rate. The first channel is operated through private investments and savings and it works through two different channels; 1) when government heavily borrows for its expenditures, it will dry out the availability of resources for private sector and curtail the private investments and 2) Meanwhile, if the government increases taxes to meet the additional debt service payments as well as reduce new debt burden, it will negatively affect the private investment through unexpected inflation and other financial implications. The second channel is the risk premium on the borrowing cost for government debt¹⁰.

Checherita & Rother, (2012) find an interesting relationship between public debt and private savings. Discussions are undertaken on the nonlinear impact of public debt on private savings. Accordingly at the initial stage, when public debt increases, private savings would also increase and when debt-to-GDP ratio goes beyond a certain level (from 82 per cent to 91 per cent) individuals are likely to reduce savings. Therefore, suggest a nonlinear relationship between public debt and private savings. Meanwhile, the above study could not identify any direct impact of public debt on private investments and the results were not robust in the case of investments. Checherita & Rother, (2012) however highlighted that the public debt indirectly affect investment only through various channels such as interest rate.

Furthermore, Gale and Orzag (2003) suggest that whilst holding other factors constant changes in government borrowings reduces private savings as well as national savings and the reduction in national savings would reduce total output of the economy through the reduction of investments. It is revealed that the theoretically proved savings and investment channel is confirmed by the empirical studies as well.

Interest Rate Channel

¹⁰ It has been discussed in the previous sections of the literature review chapter. Therefore, it has not been discussed in detail here.

Consequences of public debt on interest rate are widely discussed issue. Several empirical studies estimate the impact of budget deficit and public debt on interest rate and suggest that changes in government borrowings increase the interest rates of the economy (Gale and Orzag, 2003, Baldacci and Kumar, 2010 and Checherita & Rother, 2012). Gale and Orzag (2003) by referring to the report released by the “American president’s council of economic advices” concluded that an increase in deficit by one percent of GDP increases the interest rate by about 22 basis points.

Checherita & Rother, (2012) suggest based on their sample that the change in public debt has a significant impact on long term as well as short term interest rates. Furthermore, they have also identified that the level of public debt does not have a correlation with long term interest rates. It also reveals that rather than debt levels, the new borrowings have more influence on interest rates. Meanwhile, Baldacci and Kumar (2010) also confirm the above findings with large panel data and suggest that a large fiscal deficit and public debt increases the interest rates of the economy through the reduction in national savings. However economists argue that foreign capital flow such as foreign debt and foreign direct investments (FDI) may weaken the relationship between borrowing and interest rate (Baldacci and Kumar, 2010).

The above discussions reveal the empirical support available for the relationship between public debt and interest rates. Further, it confirms the theoretical finding that changes in government debt influences the interest rate which would negatively impact the total output and economic growth of a country.

Methodology

Estimation Models and Control Variables

The empirical studies widely use either a neo-classical growth model or endogenous growth model to construct the estimation model. Generally they use the following type of single equation model to estimate the impact of public debt on economic growth.

$$\text{Growth}_t = \alpha + \beta_2 \text{Debt Indicator}_t + \beta_3 \text{Control Variables}_t + \epsilon_t \quad (9)$$

Accordingly, conditional convergence between the per capita growth rate and the debt indicators would be the main dynamics of the equation. The above type of estimation model is used to measure linear relationship between debt and growth. If a study assumes negative relationship between public debt and economic growth, it uses the above type of equation for the estimation. On the other hand if a study assumes nonlinear relationship between external debt and economic growth, quadratic model is used as a basic estimation to check the impact of public debt on economic growth. The model would be as follows.

$$\text{Growth}_t = \alpha + \beta_2 \text{Debt Indicator}_t + \beta_3 (\text{Debt Indicator}_t)^2 + \beta_3 \text{Control Variables}_t + \epsilon_t \quad (10)$$

For the left hand side of the equation, the dependent variable “Growth_t” is explained by the per capita income growth rate of the country. The right hand side of the equation consists of two fundamental variables: 1) debt indicator; and 2) control variables. The variable “β₂Debt Indicator_t” represents the outstanding public debt of the country as a percentage of GDP. The variable “β₃ (Debt Indicator_t)²” is a quadratic form of the “β₂Debt Indicator_t” variable.

The control variables were another main factor where the analysts placed most of their concentration. Initial per capita income, population growth, trade openness, gross fixed capital formation, secondary school education as a proxy for human capital, government investment rate and debt service ratio are used as some of the control variables to estimate the model (Checherita & Rother, 2012; Afonso, 2013). Growth theories especially endogenous growth theories suggest that more than one variable such as physical capital, human capital and technology, contribute towards the economic growth rate of a country (Rebelo, 1991, Romer, 1989 and Lucas, 1988). The existing empirical studies have considered these growth determinant variables based on the selected growth theory and include them as control variables in the estimation. Therefore, it is important for a study to choose upfront the growth theory that will be adopting along with the control variables which will be utilized in arriving at the estimation.

Nexus between Debt and Growth for Developed and Developing Countries

Based on the assumptions and the data sample, the existing studies can be divided into two namely, the studies related to developed countries and developing countries. Meanwhile, the theoretical literature that analyses the relationship between public debt and economic growth focus on the

macro economic conditions of developed countries. Most of the existing empirical studies also mainly examined the relationship between debt and growth in the United States of America (USA), European countries and other developed countries and only a handful of studies focus on the debt growth relationship in developing countries¹¹. However, the macro economic circumstances of a developed country are totally different to that of a developing country. For example basis of fiscal policy, pattern of budget deficit, the level of government expenditure and the government's ability to borrow from domestic as well as international sources largely differ between a developed country and a developing country.

When the relationship of public debt and economic growth in an advanced economy are scrutinized, it is evident that the assumptions are different to that of a developing country's analyses. It is generally assumed that the level of government expenditure is fixed in a developed country, except during war and public debt is used to postpone the tax between two periods or across the generations and to minimize the dead weight losses of taxation (Alesina & Tabellini, 1990). Further, it is assumed that in a developed country the government does not have any restriction on financing resources both tax and debt and therefore they can always maintain a fixed level of expenditure in terms of GDP whilst it is predictable for the future. However, due to political reasons and other monetary and fiscal policy decisions, the government reduces tax rates or postpones the tax revenue and use the debt finance for pre-determined expenditure (Barro, 1979).

Meanwhile, the macro economic circumstances of a developing country are totally different from the above, where government expenditures are higher than the revenues in most instances and the government continues to operate on a deficit budget. Meanwhile, the government has its own restrictions for collecting tax revenues as well as borrowing money from domestic and foreign sources. Therefore, public debt is used to increase the capacity of the government to meet its expenditures especially capital expenditure for development purposes (Aizenman et. al., 2007).

¹¹ Several studies could be cited for developed countries for ex. Barro, 1979; Checheritta and Rother, 2012 and Ceccheitti 2011. Panizza, 2008 and Presbitero 2012 were only available for reviewing developing countries.

Likewise, the main difference between the analysis of a developed country and developing country is the level of government expenditure. When an analysis is undertaken for a developed country it is assumed, throughout the analysis, that government expenditure is fixed and what are the consequences if the government postponed the tax and use the debt finance for fiscal deficit (Panizza & Presbitero, 2013). However, in a developing country it is not the case and therefore the estimation would be different for a developing country than that of a developed country. As Bernheim (1989) mention there are two types of budget deficits which exist, first being a temporary budget deficit and the second type is a permanent budget deficit. Meanwhile, the consequences of both types of budget deficits are different. In general developing countries have permanent budget deficits; therefore its consequences would be different compared to a developed country that has temporary budget deficits for a shorter period.

Existing Studies on Public Debt for Sri Lanka

As mentioned in the introduction minimal research work has been undertaken to examine the economic consequences of high public debt in Sri Lanka and there are very few studies which examine the public debt of Sri Lanka in relation to various single aspects of the economy in the past. Kumara and Cooray, 2013 is a more recent study which empirically analyses the relationship existing between public debt and economic growth in Sri Lanka. It suggests a nonlinear relationship between public debt and economic growth in Sri Lanka and further suggests that the public debt has a positive consequence on economic growth up to 59.4 per cent of debt to GDP level and beyond that point debt becomes a negative consequence to the economy. The study uses annual data and two years non overlapping averages for the analyses and it poses certain concerns on the results derived from the study. In general, five years averages or at least three years averages are taken for the analysis (Pattillo, 2004, Reinhart & Rogoff, 2012 and Checherita & Rother, 2012) and it is doubtful whether the annual data and two years averages are adequate to capture the short term fluctuation. Further, the optimal debt thresholds are fluctuated by nine percent between the annual data and two year's averages. The annual data confirms the optimal point of 68.2 percent of debt-to-GDP, whereas the average of the two years data depicts the optimal point of 59.4 per cent of debt-to-GDP. These aspects have raised concerns of the necessity to undertake fresh analysis to identify the relationship between public debt and economic growth in Sri Lanka.

Meanwhile, the debt sustainability analysis and the debt threshold analysis are broadly relevant concepts. However, the debt sustainability studies analyses the extreme consequences (the default) of the debt and examine whether the government or the county has the ability to repay its entire debt. International agencies such as IMF and World Bank have introduced special models to analyze foreign debt sustainability. In the case of Sri Lanka for instance, the empirical studies conducted namely by Banda and Priyadarshanee (2014), Deyshappiriya (2012) and Fonseka (2008) examine the sustainability of the Sri Lankan fiscal policy and public debt. These studies conclude that the Sri Lankan public debt is not sustainable.

The most recent study on Sri Lankan debt sustainability; undertaken by Banda and Priyadarshanee (2014) discuss that increasing commercial borrowing from foreign countries for development projects is one of the main reason for the government debt to be sustainable over the past years. Furthermore, it suggests that the government has to take steps to reduce the debt level or convert a certain amount of foreign debt into other sources of fund such as domestic debt. The Deyshappiriya (2012) while discussing the debt and fiscal sustainability position of Sri Lanka has strongly recommended to implement improved tax administration and collections and reduces government expenditure as these would be the main avenues to achieve sustainability in debt in Sri Lanka. However, there is a remarkable trend change in the Sri Lanka government debt situation from 2009 onwards. Where the government debt grows at a fast rate in comparison to the previous era and the government commences to borrow from the international capital market to facilitate budget deficits. Further, the government follows an expansionary fiscal policy and heavily invests in several infrastructure projects such as highways, airports, ports and etc. The above studies (Banda and Priyadarshanee, 2014 and Deyshappiriya, 2012) have not factored these new trend changes found in public debt and government expenditures into the analysis of the study. It might influence the conclusion of the study if one could include these factors into the analysis.

A time series data of Sri Lanka comprising of a period of 64 years from 1950 to 2013 have been used as annual data to identify the short term fluctuations and the same data have been averaged for overlapping five year periods (1950 – 54; 1951 – 55; etc.) to identify the long term trend. A basic trend analysis on “debt to GDP ratio” and “GDP growth rates” for short run as well as to long run

shows that trend line between debt-to-GDP ratio and growth rates on the long run are more compatible than the short run (Please refer Appendix figure 1 and 2). Furthermore, a trend analysis was conducted based on the method of Reinhart and Rogoff (2012) and it concludes that there is an inverted nonlinear relationship between debt and growth with a turning point for optimal debt level between 80 per cent and 90 per cent of Debt-to-GDP ratio (Please refer the Appendix figure 3)¹².

Conclusion

The existing literature discuss three types of theories with respect to the nexus between public debt and economic growth 1) the neutrality theory of public debt or Ricardian View; 2) the positive theory of public debt or Keynesian view 3) the neoclassical theory of public debt or negative consequences of public debt. Meanwhile, most of the existing empirical studies confirm the theoretically driven negative consequences that exist on public debt on economic growth for developed countries. The recent empirical studies conducted with large panel data of developed and emerging countries identify a nonlinear relationship and find the optimal level of public debt by regressing debt to GDP and growth rate variables. Although optimum debt levels are different from study to study it suggests that the debt has negative consequences beyond the threshold limit.

Additionally, the studies have observed that there is an inverted U-shaped nonlinear relationship between government and economic growth of Sri Lanka. However, debt threshold suggested by existing studies significantly vary. Therefore, a comprehensive analysis in this area has to be undertaken to identify a considerable accurate threshold that would assist to manage the fiscal policy more efficiently. Since Sri Lankan government debt has considerably increased in the recent past, undertaking of studies to capture the long term economic consequences of public debt is an essential research requirement for Sri Lanka.

Finally, the existing studies on the nexus between public debt and economic growth mainly focus to identify the relationship between debt and growth and identifying the channels through which government debt affect economic growth is a rarely discussed area. Meanwhile, existing theoretical as well as empirical studies directly and most of the times indirectly analyze only certain channels in an adhoc manner. Disappointingly, not a single study is available that evaluated all the possible

¹². Although the relationship between debt and growth is in line with the finding of Kumara and Cooray (2013), the optimal debt level is far different from that study.

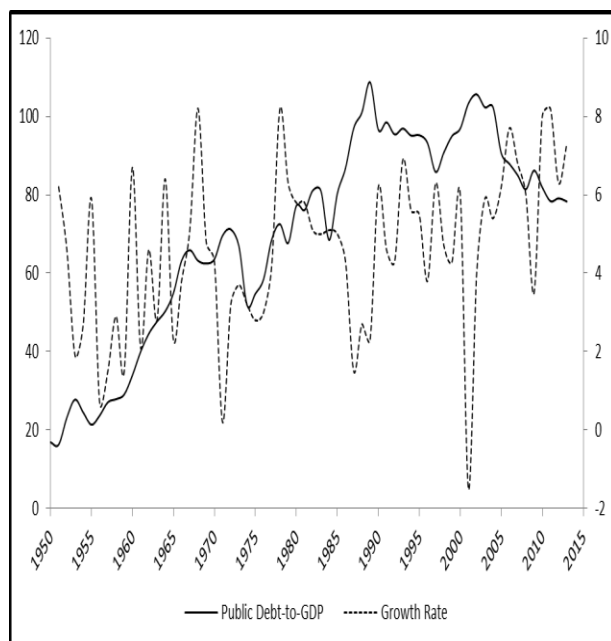
channels through which debt can affect economic growth. This has been identified as a literature gap in public debt literature and future studies are recommended to focus on this area.

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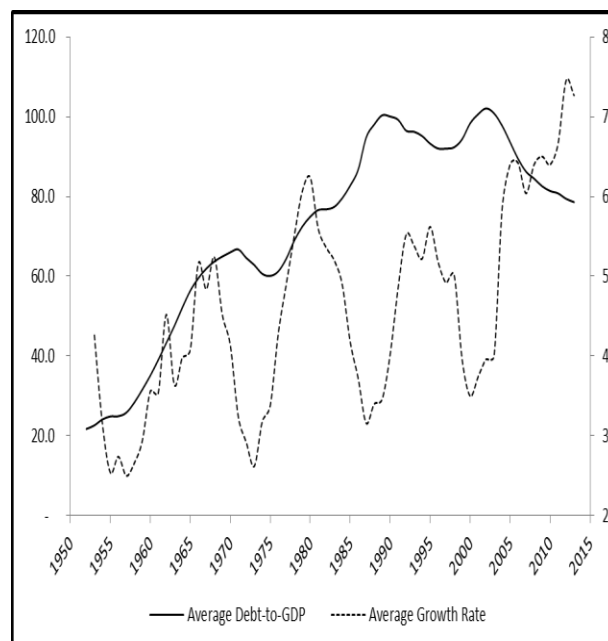
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Figure – 01: Public Debt-to-GDP Ratio and GDP Growth Rates in short run



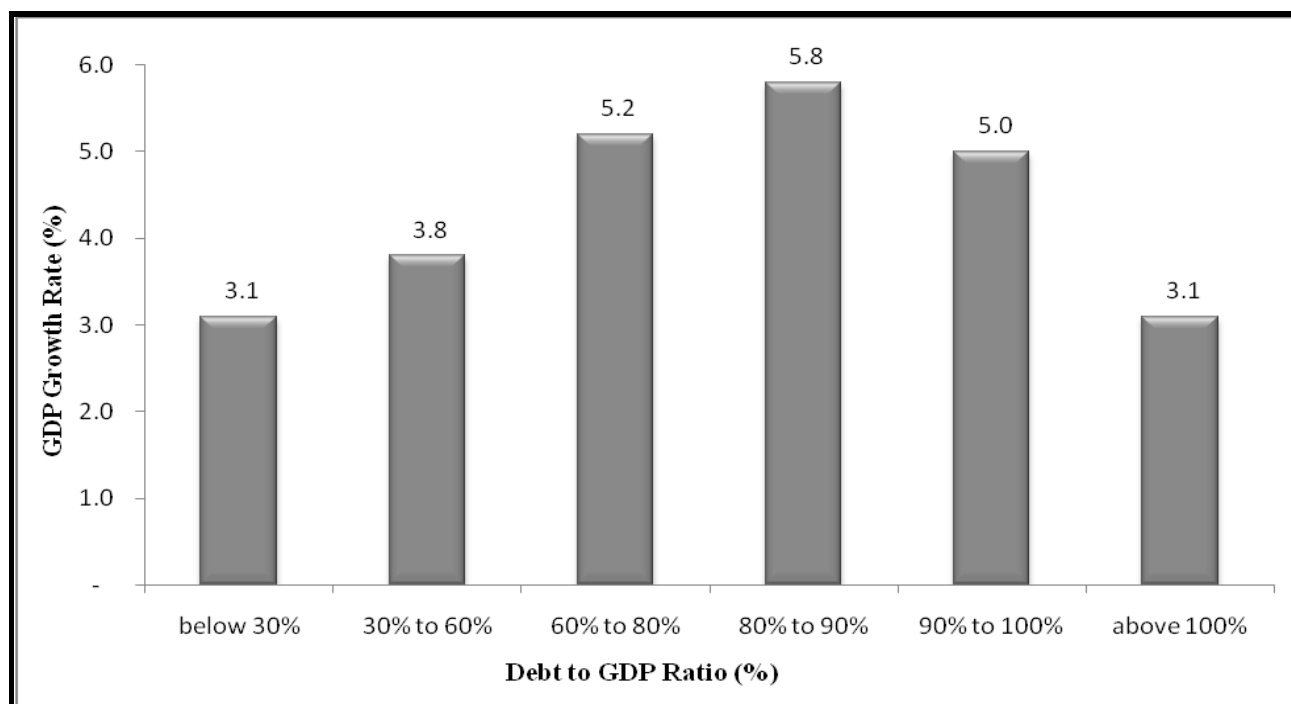
Source: Central Bank of Sri Lanka

Figure – 02: Public Debt-to-GDP Ratio and GDP Growth Rates in long run



Source: Central Bank of Sri Lanka

Figure – 03: Average Growth Rates at different Debt to GDP Ratio.



Source: Central Bank of Sri Lanka

An exploration of Social and Business Linkages among Micro Enterprises in Post Conflict Communities: experiences from the Northern Province of Sri Lanka

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Abstract

This paper presents a profile of social and business linkages among micro entrepreneurs in the Northern Province of Sri Lanka based on a study of 592 such entrepreneurs conducted from March to December 2014. The objective of the paper is to identify how and to what extent micro entrepreneurs in post conflict communities use their social and business linkages to promote their enterprises. It attempts to discover whether micro entrepreneurs emerging from conflict situations are willing to collaborate with each other and utilise business development services together to develop their businesses. Findings indicate that a majority of these enterprises have commenced in the aftermath of the war as affected communities attempt to regain their livelihoods. The income and investment levels among these entrepreneurs remain low compared to other regions, but they show initiative and commitment to grow as their businesses mature. Social relationships among these entrepreneurs are high as opposed to their business linkages that are comparatively low. They depend heavily on networks within their village for obtaining inputs as well as marketing their products and services. They have been active in social and cultural events but are hesitant to join business networks.

Key words: social networks, business networks, micro entrepreneurs, post-conflict reconciliation.

Introduction

Comparatively few studies have been published about the role of micro entrepreneurship and small business in post conflict communities even though the topic has been gaining greater relevance in recent times. As countries emerge from war and civil strife economic development and reintegration become as relevant and as important as political dimensions (Abeyratne 2004). Therefore policy makers and theoreticians are increasingly attempting to understand the economic implications of

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transition from war to peace including the reintegration of those affected by conflict back into their communities.

Entrepreneurship and developing trade linkages between former enemies in a post conflict community can also contribute to peace building and reconciliation (Boudreaux, 2007). Since those in post conflict communities need jobs and economic activities play a vital role in development and reintegration, trade and other business linkages can be useful strategies for building relationships among people looking to regain their livelihoods and engage in income generation for themselves in a post conflict situation. In this context understanding the social networks that these communities are part of can support devise strategies that can contribute to livelihood activities including micro enterprises of such communities in a post conflict setting. Understanding the social networks in post conflict communities and exploring how such networks can be used to benefit their business activities, can contribute to the reintegration and reconciliation process in the aftermath of the conflict.

The objective of this paper is to examine the social and business relationships that prevail among micro entrepreneurs in the Northern Province of Sri Lanka. It is hoped that such an understanding would support the identification of strategies to promote mutually beneficial networks that would support the development of the micro enterprises.

Specific objectives are to identify:

- 1) The current profile of micro enterprises, their levels of income, number of employees, sources of funding and use of business development and financial services.
- 2) The type of business and social interactions they have that can contribute to breaking down isolation, division, prejudice, and polarization.
- 3) Their sources of support during times of crisis and the networks they rely on as support structures for their enterprises and the friends and relatives they have of other communities and ethnic groups.

The paper compiles a profile of micro entrepreneurs based on information gathered through a survey of 592 micro entrepreneurs in Jaffna, Mannar, Vavuniya, Kilinochchi and Mullaitivu, employing stratified random sampling. This profile contributes to the understanding of the prevalent

situation especially in relation to the more rural communities in the North where young people including young women are beginning to consider micro entrepreneurship as a viable alternative to formal employment. It attempts to find answers to the following research questions: Would micro entrepreneurs in post conflict regions be willing to work together with other micro entrepreneurs if they perceive the economic benefits that could be derived through collective actions? By doing so can they contribute to the reconciliation and peace building process? Current literature on peace building and reconciliation emphasizes on the need for stakeholders in all levels of society including the grassroots levels to be engaged in the peace and reconciliation process for peace to be sustainable (Lederarch 1997). Economic factors and lack of access to resources are often the root cause of the conflict and addressing such economic factors becomes important in a post conflict environment.

Do micro entrepreneurs have adequate networks through which they can access resources, services and information? Networking has been an important factor contributing to the success of entrepreneurs. Social structures play an important role in who becomes an entrepreneur and analyse the role that social networks play in initiating a business (Aldrich and Kim 2007, Premaratne 2002). Through the formation of entrepreneurial teams and resulting social relationships micro entrepreneurs can mobilise more resources that they need to succeed.

Literature Review

Entrepreneurship has been studied in respect of many disciplines (Premaratne 2002) including economics (costs and profits), management (leadership styles), sociology (social and cultural context), psychology (the need for achievement) and organisational development (entrepreneurial processes). Approaches used in these studies involve networking and clusters. Aldrich and Kim (2007) develop the theory that social structures play an important role in who becomes an entrepreneur and analyse the role that social networks play in initiating a business. They argue that through the formation of entrepreneurial teams and resulting social relationships these business start-ups can mobilise more resources that they need to succeed.

This research focuses on the sociological aspects of entrepreneurs and entrepreneurship with special focus on micro entrepreneurs in post conflict regions. The social capital theory builds on the premise that social networks have value (Aldrich and Kim 2007). Social capital can be beneficial in bringing people together. It becomes especially significant in a post conflict setting since social capital used positively can be used to bring about reconciliation and social integration.

Adverse circumstances can bring people together and make them more cohesive groups such as sharing among refugees (Woolcock 1998). Micro entrepreneurs in the North of Sri Lanka are also emerging from such “adverse circumstances”. According to Woolcock (1998) micro enterprise development programs use social capital as a form of collateral as in the case of rotating savings and credit schemes.

Mark Granovetter (1973) asks the question of the degree to which the place in the social structure determines a person’s ability to escape their origin. A key theme he explores is if modernisation and structural differentiation frees people from their constraints ascribed at birth. He postulates that economic and social relationships are interrelated and describes the concept of “embeddedness” that of “economic rationality as "embedded" within social relationships.” (Granovetter 1985). Granovetter emphasizes that weak ties are a powerful source through which networks are developed and provides opportunities to those in these networks to benefit.

In his paper “the Strength of Weak Ties’ he defines the strength of a tie based on time, emotional intensity, intimacy and reciprocity. He maintains that in forming social relationships weak ties can support to reach audiences and persons who could not be reached via strong ties. He argues that ties act as a bridge and connect groups that are otherwise disconnected. The weaker the ties the stronger the possibility of connection because according to him when people are strongly tied to each other those around them will also be tied to each other preventing the possibility of increasing the number of ties. This is especially significant for a post conflict community where people are recovering from the aftermath of the conflict and exploring the possibility of establishing new economic and social ties.

For someone starting a business alone access to information, resources and services is of great importance (Cantner and Stuetzer, 2010). They can access these via friends, colleagues and former employers as well as acquaintances they meet at various events such as trade fairs (Premaratne

2001). These “weak ties” support them in their start up while the “strong ties” of family and close friends only provide support in the form of feedback. However within entrepreneur teams, members rely on each other for information, and sharing of resources even though they have access to many contracts through the members of the team.

George Simmel (1955: 151) writes about the contrast in the ‘modern pattern’ of social webs with the earlier pattern of ‘concentric affiliations.’ The latter confined people in larger rings of attachment such as immediate family, extended relatives, other villagers and entire communities. The new modern pattern provided people with the opportunity to change their positions based on new ties they created with others. This meant that people were no longer “stuck” in fixed positions assigned to them through birth.

Lederarch (1997) presents a model known as the peace-building pyramid where he indicates three layers of society – the grassroots level, mid level and upper level. Micro entrepreneurs would fit into the third level of this structure at the bottom of the pyramid. Working together with grassroots levels stakeholders they can make a contribution to peace building and reconciliation. For example promoting economic ties between inter ethnic and inter regional groups could lead to more economic and social interaction between these groups resulting in economic benefits as well as social integration resulting from the economic ties that are established. Such economic ties would also eventually result in more social ties among such groups.

Karol Boudreaux (2007) discusses how local entrepreneurs can play an important role in reconciliation in a post conflict area. She says ‘...*people who survive conflict need jobs and some source of income, ... Trade provides an effective vehicle for people with few options, giving them the opportunity and incentive to work together towards a common goal.*’ (Boudreaux, 2007, 7)

Galtung (1998) explains violence as arising out of cultural and structural factors. According to him violence arises out of people revolting against existing structures and using culture to legitimize their violent behaviour (Galtung 1998). Therefore he argues that peace too must be built into the culture and structures and not only in the mind of the conflicting faction. This research builds on the hypothesis that economic factors are as important as political factors in understanding conflict and resolving it. If we apply Galtung’s (1998) argument to this we could say that if we address the economic and social factors that cause conflict – namely lack of access to resources and lack of

social integration – the potential for future conflict could be reduced. When micro entrepreneurs working together derive economic benefits out of doing so and also build social relationships with each other they develop long lasting “cultural” and “structural” ties through economic as well as social relationships thereby reducing the potential and the need for violent behaviour.

Self employment can contribute to economic development in a post conflict context especially through the creating of employment opportunities for those affected by the conflict (Demirguc-Kunt et al 2011). Demirguc-Kunt, Klapper and Georgios (2011) in their study of post conflict communities in Bosnia Herzegovina discovered that those in the informal sectors are more likely to become entrepreneurs specially when provided with access to finance. Their findings support the idea that self-employment can be a viable form of economic recovery in transition economies.

Results and Discussion

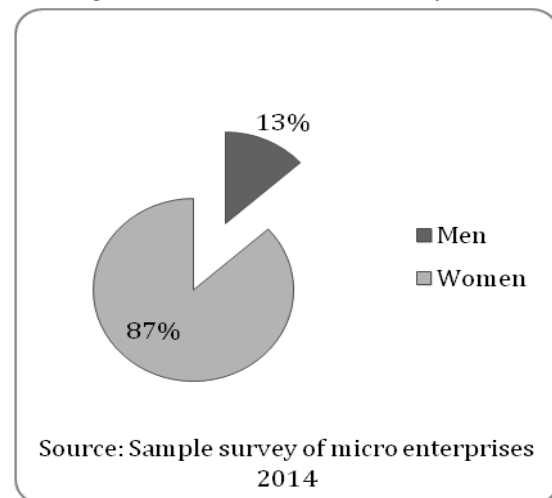
The district distribution of the 592 micro entrepreneurs under study is given in table 1 below:

Table 1: District distribution of sample

District	No.	Percentage
Jaffna	99	16.7
Mannar	110	18.6
Vavuniya	114	19.3
Kilinochchi	81	13.7
Mullaitivu	188	31.8

Source: Sample survey of micro entrepreneurs
2014

Figure 1: Gender distribution of sample



There were 513 (87 percent) women and 79 (13 percent) men in the sample. A majority (96 percent) of them were Tamil while 3 percent were Muslim and 1 percent was Sinhala reflecting the ethnic distribution in the region. The youngest entrepreneur was 18 years of age the oldest was 80. The average age of the entrepreneurs was 38 years. More than half of those surveyed (54.6 percent)

were educated up to GCE Ordinary level. 29.1 percent has below O/L qualifications while 12.5 percent were educated up to GCE Advance level.

Even though a majority of the entrepreneurs were women (87 percent) only 15 percent of them were female head of households. 10.8 percent of the micro entrepreneurs were widows. 12.2 percent of the women entrepreneurs had children under 5 years of age. 5.4 percent of the micro entrepreneurs had a person with disability in their families. 34.8 percent of those surveyed were internally displaced persons while 40.2 percent of them had been recently resettled. This indicates that 82.2 percent of the micro entrepreneurs had been displaced at some time due to the war. The average monthly income of the sample was SLR. 24,189.00 while their monthly expenditure was SLR. 15,522.66.

77 percent of the interviewed micro entrepreneurs are engaged in the production sector. 8.45 percent are in the service sector, 1.5 percent in agriculture and 1.2 percent in retail. 11.8 percent did not respond to the question on which sector they were from. 46.3 percent are sole proprietorship while 28.5 percent are partnerships. Only 1 percent (6 companies) was Private Limited Companies.

64 percent of the respondents said that the business was carried out at their homes/lands. 10 percent had rented their business premises while 4 percent were using government lands to carry out their business activities. A majority of the micro entrepreneurs (59.3 percent) had started their business themselves. Only 1 percent has bought it from someone else, while only one of the entrepreneurs had inherited the business. This signifies that there is a high propensity for those in conflict affected regions to initiate a micro enterprise of their own. This is further collaborated by the fact that over 60 percent of these enterprises have been started after 2012. Only 11 percent of the enterprises had been started during the time of the conflict.

On average these micro enterprises employed 4.60 employees within their businesses. The average number of female employees at 4.46 is higher than the average number of male employees (0.13). 97 percent of total employees are female, while only 3 percent are male. 91.33 percent of the total employees are employed on permanent basis. The number of family members working in the business is comparatively low with an average of 0.36 (less than 1 percent). 59.7 percent of family members working in the enterprises are female. The majority of the family workers (48.6 percent) are also either semi skilled or unskilled persons.

The average monthly income of the micro enterprises studied is SLR. 16,701.35. This is lower than the average total monthly income which is SLR. 24,189.96 indicating that they also derive an income from sources other than the micro enterprise. About 37.3 percent of the entrepreneurs receive income from more than one source.

Use of business development services and financial services

66.9 percent of the entrepreneurs had attended some type of training before they commenced their business activities. Of these 54.2 percent had attended program that were less than 6 months in duration. Only 3 percent of the entrepreneurs had participated in training program that were more than a year long. The micro entrepreneurs were asked about the business development service they had used during the last 12 months.

Table 2: Usage of business development services

Business Development Service	Percentage of Entrepreneurs
Training program	34.3
Exposure visits	7.4
Market surveys	21.3
Production improvement	33.9
Entrepreneurship and business planning	19.5
Financial management	0.2
Packaging and marketing	14.6
Business registration and legal requirements	0.2

Source: Sample survey 2014

As the above table indicates the use of business development services by micro entrepreneurs in the region are quite low.

While 38.9 percent of the entrepreneurs maintain cash books, 5.2percent maintain inventory and 4.25percent maintain a sales ledger. This indicates that financial literacy is quite low among these micro entrepreneurs. 72.1 percent (427) of the entrepreneurs have the habit of saving money regularly. The average savings per month is SLR. 2553.25. The highest value was SLR. 25,000.00 and the lowest value was SLR. 100.00. The methods that they use include *Seetu* (24.7percent), savings society (19.9 percent), maintaining a bank account (25.2 percent) and other methods (6.3 percent). These other methods are Women's Societies (4.1percent), Savings Groups (0.5 percent), and Cash Box (0.5 percent). Among the 72.1 percent that have savings accounts 63.9 percent have them in one bank while 7.9 percent (47) have accounts in two banks and 0.8 percent (5) have accounts in three banks.

Table 3: Sources of funding for enterprise

Source of funding	Percent of micro enterprises receiving such funds
Own (personal) funds	40 percent
Borrowings from family	12.8 percent
Business partnership	3.2 percent
Bank loans	6.8 percent
Micro finance institutes	8.3 percent
Other sources	21.3 percent

Source: Sample survey 2014

Only 24.2 percent of the micro entrepreneurs use banks as a source for borrowing money. Of these 22.6 percent use only one bank while only 1.4 percent use two banks and 0.2 percent use three banks. Borrowings remain significantly lower than savings. Only 32.1 percent of the entrepreneurs had borrowed money during the past year, of these 9.6 percent borrowed from banks, 8.4 percent from savings societies, 5.2 percent from MFIs, 2.9 percent from relatives and 1.4 percent from moneylenders. 3 percent of the entrepreneurs indicated other sources of borrowing.

The most pressing issue affecting these businesses was marketing (31.9 percent), followed by financial issues (22.5 percent). Other issues included difficulties in accessing raw materials, lack of machinery, competition, transport difficulties, lack of buildings and location and lack of electricity.

Table 2: Issues affecting enterprises

Problems	No.	Percentage
Marketing	189	31.9
Financial	134	22.5
Raw materials	64	10
Low pricing	54	8.1
Lack of machineries	49	7.8
Competition	44	7.1
Transports	42	6.9
Building and location	41	6.6
Electricity	15	2.4

Source: Sample survey 2014

When asked what changes they had made in their businesses during the last two years 33.1 percent of the entrepreneurs had found new customers while 31.9 percent had introduced new products. Only 3 percent had hired additional staff, 2 percent had expanded their markets and 1.5 percent had constructed new buildings. 14.2 percent had not made any changes in their business over the last two years. The entrepreneurs were also asked about the perceptions about the future performance of their enterprises. 68 percent said that it would be better (37.3 percent said it will be a little better and 30.7 percent said that it will be much better). Only 0.7 percent (4 people) said that it would be worse. 4.6 percent said that it would remain unchanged. This signifies that a majority of the entrepreneurs in the region has a positive outlook about the future of their enterprises.

Business and Social relationships and interactions

The micro entrepreneurs were asked if they are members and/or office bearers of any groups such as Rural Development Societies, Cooperatives, religious or sports clubs. Out of 592 entrepreneurs, 307 entrepreneurs (51.9 percent) are a member or office bearer of a group, of these 41.2 percent are ordinary members while 10.6 percent are office bearers. Only 19 percent are members in more than one group. However, only 11.5 percent of the interviewed entrepreneurs were members of a business sector group such as a chamber of commerce or trade association. Since social networks play an important role in running a business (Aldrich and Kim 2007), even though these entrepreneurs may be have access to business membership organizations such as chambers of commerce it may be assumed that their membership in other village centres groups such as Rural Development Societies and Cooperatives support them in carrying out their businesses in terms of obtaining inputs and getting access to suppliers.

In an attempt to understand the business linkages of these entrepreneurs questions were asked about the type of business networks that they use for the activities pertaining to the running of their enterprises. Table 5 provides an overview of these linkages.

Table 3: Sources of business linkages

Source of business link for:	Own village	District	Province	Other Province	Other country
Obtaining raw materials	40.39	30.47	6.17	9.85	2.11
Markets of produced goods/ services	49.27	22.83	4.02	7.25	2.17
Partnerships (joint sales/ sharing resources)	32.41	2.14	0.42	5.62	0.68
Getting employees	39.26	1.42	0.20	5.58	0.42
Training/ coaching support	60.66	10.86	1.37	3.00	0.21
Lobbying for benefits	16.86	1.22	0.02	3.73	0.17
Information sharing and networking	39.46	3.31	0.59	0.64	0.0

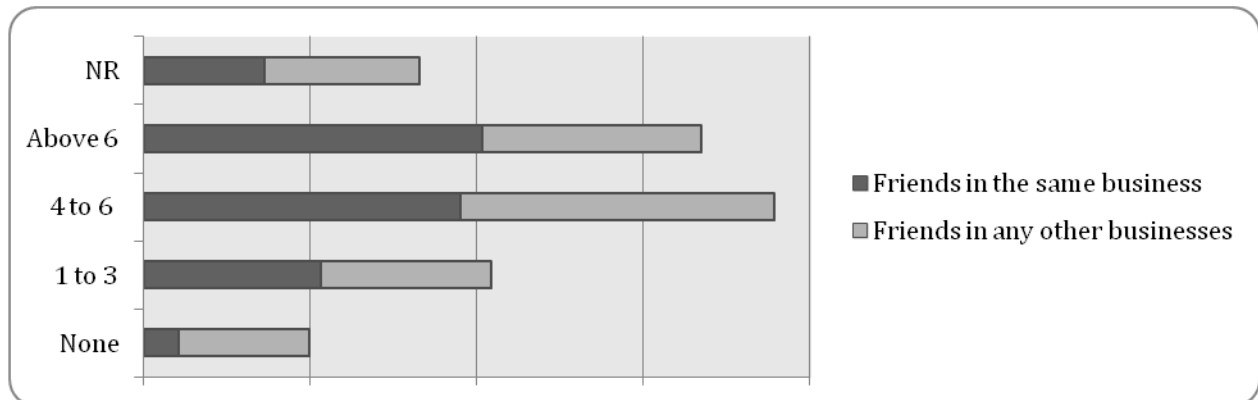
Source: Sample survey 2014

40.39 percent of the raw materials are obtained within their own village (Table 7). Only 2.11 percent of the raw materials are imported. In case of output market, 49.27 percent of the outputs are sold in their own village. 2.17 percent are exported. Partnership in terms of joint sales and sharing resources is mainly concentrated in own village. 32.41 percent of such partnerships are within their own village. The entrepreneurs mainly seek their employees within the own villages. 39.26 percent of the employees are found within the village. In training and coaching support, it shows that 60.66 percent of such support is obtained by the entrepreneurs from within their own villages. Lobbying for benefits is also mainly targeted their own village (16.86 percent lobbying activities). Information sharing and networking are also taken place within their own villages. Overall, the results show that business linkages beyond entrepreneurs' own villages are negligible.

The lack of business linkages could be due to the fact that these communities are just emerging from the conflict situation that existed until 2009. Since many of the businesses have commenced after the end of the conflict they are still in the growth stage, these micro entrepreneurs are emerging from “adverse circumstances”, such a situation can bring people together and make them more cohesive groups, it has been known that migrants in a new country, or refugees come together to share resources and experiences (Woolcock 1998). It would be interesting to study further if the war that prevailed in the North until 2009 has had similar impact on the communities in that region and whether micro entrepreneurs from the North are willing to come together to access resources and services.

34.3 percent of the entrepreneurs mentioned that they have more than 6 friends who are doing the same businesses (figure 3). 32.1 percent said that they have between 4 to 6 such friends and 17.9 percent stated that they have between 1 and 3 such friends. Only 3.5 percent said that they do not have friends who are engaged in the same businesses. 22.1 percent (131) mentioned that they have more than 6 friends who are engaged in other businesses. 31.8 percent (188) of the entrepreneurs stated that they have between 4 to 6 business friends and 17.2 percent (102) said that they have between 1 to 3 business friends. Only 13.2 percent (78) of the entrepreneurs stated that they do not have even friends from other businesses. In considering friends from the same as well as other businesses a majority said that they had between 4 and 6 friends.

Figure 2 Friends in the same and other businesses



Source: Sample survey 2014

In order to determine their attitudes towards and perceptions of other entrepreneurs engaged in the same business the respondents were asked how they see others engaged in the same business. 48.5 percent said that they consider them as colleagues. 13.5 percent said that they consider others engaged in the same business as competitors. Only 9.3 percent considers them as “personal and professional friend”. When asked if they would like to join a groups comprising of other entrepreneurs only 27.2 percent (161) said they wanted to share ideas with others while a further 22 percent said that they don't mind trying it out. Therefore it can be concluded that nearly 50 percent ($27.2 + 22 = 49.2$) are willing to share ideas and/ or join a group of same sector entrepreneurs.

Findings indicate that many of the micro enterprises do have “weak ties” (Grannovetter, 1973), a powerful source of networking through which mutually beneficial networks can be developed. The fact that many of the entrepreneurs perceive other entrepreneurs as “colleagues” rather than competitors indicates that there is a willingness to develop relationships that can be beneficial to their business. By developing such “weak ties” these micro entrepreneurs can reach other entrepreneurs from other regions of the North as well as elsewhere, which would not be possible if they were to limit their business relationships to their own communities.

The participation in social activities is one of the key factors that determine social networks of entrepreneurs. These activities include mainly participation in cultural events, weddings, religious events and funerals. With regard to the number of activities participated in within the preceding year, most of the entrepreneurs had participated in 10 or less social events (table 6). A very few of

the entrepreneurs had participated in between 31 and 40 weddings, funeral, religious and social events, namely 1.2 percent, 0.2 percent, 0.7 percent 1.4 percent respectively. The data indicates that the micro entrepreneurs are active in the social and cultural sphere but a majority of them are not overly active in these events.

It would be interesting to undertake a similar survey among micro entrepreneurs from other regions (non conflict) and compare this data with the outcomes from that survey to determine whether the participation of micro entrepreneurs in non conflict situations are similar of different to these findings.

Table 4: Social interactions of entrepreneurs

Activity	No. & percent	Number of activities participated in:							
		< 5	6-10	11-20	21-30	31-40	> 40	NR	Total
Wedding	No	286	172	37	8	8	0	81	592
	Percent	48.3	29.1	6.3	1.4	1.4	0	13.7	100
Funerals	No	348	122	22	9	1	0	90	592
	Percent	58.8	20.6	3.7	1.5	0.2	0	15.2	100
Religious	No	378	80	23	15	4	4	88	592
	Percent	63.9	13.5	3.9	2.5	0.7	0.7	14.9	100
Cultural	No	380	92	32	8	0	0	80	592
	Percent	64.2	15.5	5.4	1.4	0	0	13.5	100
Festival	No	400	78	11	5	0	0	98	592
	Percent	67.6	13.2	1.9	0.8	0	0	16.6	100
Social	No	235	83	101	43	8	2	120	592
	Percent	39.7	14.0	17.1	7.3	1.4	0.3	20.3	100
Sports	No	355	98	19	22	0	0	98	592

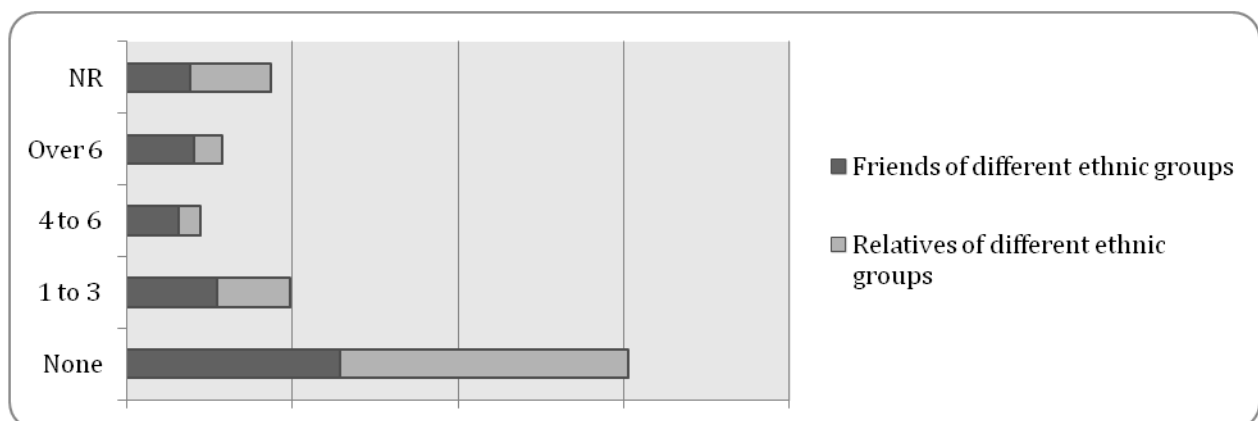
	Percent	60.0	16.6	3.2	3.7	0	0	16.6	100
Others	No	111	24	11	9	0	0	437	592
	Percent	18.8	4.1	1.9	1.5	0	0	73.8	100

Source: Sample survey 2014

Since sustainable peace requires that it be built into the cultural and structural of the conflicting factions (Galtung, 1998) such social events and participation of the people in these events can contribute to the reconciliation process by bringing together communities who has earlier been isolated and polarized as a result of an ongoing war.

The entrepreneurs were also asked if they had any friends and relatives of different ethnic groups to their own, the figure below illustrates their responses:

Figure 3: Friends and relatives of different ethnic groups



Source: Sample survey 2014

43.6 percent (258) of the entrepreneurs do not have friends of a different ethnic group while 58.8 (348) percent do not have any relatives of different ethnic groups. 18.6 percent (110) have 1 to 3 friends of different ethnic groups, 10.8 percent (64) have 4 to 6. 14.9 percent (88) have 1 to 3 relatives of different ethnic groups, 4.4 percent (26) have 4 to 6. Only 13.9 percent (78) have even more than 6 friends of different ethnic groups while even less, 5.7 percent (34) have more than 6 relatives of different ethnic groups.

Even though participation in cultural events within the community was high the relationship across ethnic groups (friendships and family ties) were comparatively weak. A majority did not have any friends or relatives of other ethnic groups. Peace and reconciliation should be built into culture and structures as well as in the minds of the conflicting actors (Galtung, 1998). Developing marital and by extension family relationships across ethnic groups maybe difficult due to prevailing norms, values beliefs and attitudes towards such relationships where people most often prefer to marry within caste, religion and ethnic group. However developing business and social linkages between regions and between ethnic groups can contribute positively to the reconciliation process.

When asked how many times they had travelled outside of their district in the last year 31percent said that they had travelled 1 to 3 times. 24 percent had travelled outside their district more than 6 times during the last year. It was significant that 16 percent of the entrepreneurs had not left their district during the last one year.

One could explore the possibility of developing inter regional and inter ethnic business linkages which could ensure that local entrepreneurs from the North could play an important role in the reconciliation process by developing business links with those from the South. Experience from elsewhere in the world indicates that forging economic ties between former enemies could be a means to peace building and reconciliation (Boudreaux, 2007) as in the case of the Hutus and Tutsis in Rwanda who have since the war between these two factions worked together to develop the coffee industry in that country.

The entrepreneurs were asked about different scenarios and from whom they would seek support when faced with a crisis situation. See table 7:

Table 5: Sources of support during times of crisis

Type of support	Relative		Friends		Colleague		Others	
	No	Percent	No	Percent	No	Percent	No	Percent
In financial trouble	355	60.0	203	34.3	57	9.6	32	5.4
Get inputs	291	49.2	202	34.1	145	24.5	26	4.4

Marketing	203	34.3	224	37.8	177	29.9	51	8.6
Additional assistance	302	51.0	227	38.3	100	16.9	50	8.4
Favor for family	303	51.2	217	36.7	47	7.9	19	3.2
Share business secrets	167	28.2	140	23.6	253	42.7	31	5.2
Any difficulties	304	51.4	162	27.4	43	7.3	1	0.2

Source: Sample survey 2014

In case of financial support, 60 percent of the entrepreneurs seek support from their relatives, 34.3 percent from friends, 9.6 percent from colleague and 5.4 percent from others. In case of inputs requirements, while 49.2 percent of the entrepreneurs seek support from their relatives, 34.1 percent from friends, 24.5 percent from colleague and only 4.4 percent from others. When they need marketing support, the entrepreneurs mainly seek assistance from friends (37.8 percent). 34.3 percent of the entrepreneurs are willing to seek marketing support from relatives. 29.9 percent are from colleagues and 8.6 percent from others. When they need additional assistance in production, the majority of the entrepreneurs (51percent) get support from relatives. While 38.3 percent seek support from their friends, 16.9 percent seek from colleagues. 8.4 percent of the entrepreneurs seek supports from others. In the case of sharing business secrets, 42.7percent of the entrepreneurs trust in their colleagues while 28.2 percent rely on relatives, 23.6 percent on friends. When they are in need of some favours for their families, 51.2 percent of the entrepreneurs approach relatives. While 36.7 percent approach friends, only 7.9 percent contact colleagues. 5.2 percent talk to others as well. If the entrepreneurs are faced with any other difficulties, 51.4 percent of them seek support from relatives. 27.4 percent are from friends. 7.3 percent of the entrepreneurs contact colleagues.

It is interesting to note that during personal crisis (financial troubles, family troubles) as well as for business support (marketing and production) the entrepreneurs rely on their relatives and friends. It is only for sharing business secrets that they pick colleagues over friends and family. This would indicate that the micro entrepreneurs of the North are still reliant of their “strong ties”, which could prevent them from increasing their number of ties and by extension their business networks (Granovetter 1973).

Discussion of key findings

In this paper we attempt to explore the business and social linkages among micro entrepreneurs in the North of Sri Lanka as they recover from the conflict and regain their livelihoods. The sample covered 592 micro entrepreneurs (513 – 87 percent women and 79 – 13 percent men). The average age of the entrepreneurs was 38. 67 percent have either GCE ordinary level or advance level qualifications. Even though this may be less than the average national standards it is significant that these entrepreneurs were able to reach this level in spite of the conflict situation that existed until 2009. A majority of these entrepreneurs – 82.2 percent – had been displaced due to the war. Their current average monthly income was SLR. 24,189.00 while their monthly expenditure is SLR. 15,522.66. The average monthly income from the micro enterprises is SLR. 16,701.35 which is lower than the average total monthly income indicating that they have more than one source of income. These enterprises hired more women than men as employees, 97 percent of total employees are female.

64 percent of the respondents conducted their business from their homes/ lands. 59.3 percent of the micro entrepreneurs had started their business themselves. 60 percent of these enterprises have been started after 2012 indicating that in the aftermath of the war people are commencing micro enterprises as a means of sustaining their livelihoods. In a situation where jobs are scarce, people who have been displaced have returned to their homes may not want to leave their families and go for employment to other areas where there are jobs. Furthermore especially for women with families self employment offers a viable alternative to wage employment. Furthermore income generation is a real need for these communities.

We also aimed to identify whether the type of business and social interactions they have that can contribute to breaking down isolation, division, prejudice, and polarization. 51.9 percent entrepreneurs are a member or office bearer of a group such as Rural Development Societies, Cooperatives, religious or sports clubs. However only 11.5 percent of them were members of a business sector group. During the war access to resources including training, information, networking, business development series and financial services were constrained due to the security

situation and lack of free movement. Therefore these entrepreneurs would have depended on their own villages and surrounding areas for obtaining inputs as well as marketing their products. This is also validated by the fact that a majority of the micro entrepreneurs depended on those from their own village for their business activities including procurement of inputs, marketing and findings employees.

The use of business development services by micro entrepreneurs in the region was quite low. Many had started their business after having received training of less than 6 months. Having lacked access to technology, resources and information during the war, these micro enterprises still operate in comparative isolation, within a limited circle or network of stakeholders often restricted to their own village. 16 percent of the entrepreneurs had not left their district during the last one year. 31 percent said that they had travelled outside their district 1 to 3 times. 24 percent of the respondents had travelled outside of their districts more than 6 times.

96 percent of those interviewed were Tamil with 3 percent being Muslim and 2 percent Sinhala. Relationships between different ethnic groups are limited: 43.6 percent (258) of the entrepreneurs do not have friends of a different ethnic group while 58.8 percent do not have any relatives of different ethnic groups. With regard to their participation in social events the highest participation was in cultural events followed by weddings, religious events and funerals. Such participation in social and cultural activities indicate that these entrepreneurs are gradually coming out of their isolation and participating more in socio cultural activities. They can be encouraged to take a step towards building business linkages as well. If supported to come out of their regions and participate at events at national level and in other regions these entrepreneurs can be exposed to new technology, new marketing strategies and new business linkages that cut across ethnic and regional divides.

Out third objective was to find out the micro entrepreneurs' sources of support during times of crisis and the networks they rely on as support structures for their enterprises. During personal crisis (financial troubles, family troubles) as well as for business support (marketing and production) the entrepreneurs rely on their relatives and friends. It is only for sharing business secrets that they pick colleagues over friends and family. Nearly 50 percent are willing to share ideas or join a group of same sector entrepreneurs. This indicates a strong social network but not so strong business

networks. Premaratne (2002) found similar results in his study of entrepreneurial networks elsewhere in Sri Lanka.

Even though only few micro entrepreneurs are currently members of business organizations they can be encouraged to become more active in such entities. Once they perceive the benefits they can obtain such as sharing the cost of activities designed to promote their business, the advantage of sharing ideas and experiences and the cost effectiveness of sharing resources, information and networks these entrepreneurs would willingly collaborate with others like them. In this context social capital can be beneficial in bringing people together. It becomes especially significant since social capital used positively can be used to bring about reconciliation and social integration in a post conflict situation.

Conclusions

Given the above would micro entrepreneurs in post conflict regions be willing to work together with other micro entrepreneurs if they perceive the economic benefits that could be derived through collective actions? By doing so can they contribute to the reconciliation and peace building process?

Findings indicate that these micro entrepreneurs would be willing to forge such ties, many of them are already members of village level groups such as Rural Development Societies and Cooperatives. Most have started their enterprise since the end of the war, indicating that they have a real need to develop their (economic) livelihood. In a scenario where employment requires them to relocate to urban areas most opt for self-employment, especially women since it gives them an opportunity to carry out their business from their homes. They also participate in many social activities within their communities indicating that given the opportunity they would be open to the notion of further developing their networks. These entrepreneurs whose social linkages are already strong can be encouraged to develop also business linkages that would benefit them in the areas of marketing, financial literacy, financial management, and financial reporting, network building, technical skills.

Do micro entrepreneurs have adequate networks through which they can access resources, services and information? Currently the use of business development services is low among micro entrepreneurs of the North of Sri Lanka. Even though many use financial services it is limited to owning and operating a savings account. Many have started their business after receiving less than 6

months of training in a given trade. They are mostly not members of any trade association or chamber of commerce. Although there are services offered by government through various departments these micro entrepreneurs are not aware of them or they are too mistrustful of to make use of them. At times of crisis they mostly depend on family members or friends. They have not explored the possibilities offered by “weak ties” and resulting business networks.

Weak ties are a powerful source through which networks are developed and provide opportunities to those in these networks to benefit (Granovetter, 1985). Entrepreneurs who are just entering the maturity stage of their business can make use of such weak ties to further their business interest and grow their enterprise. These “weak ties” could take the form of other entrepreneurs engaged in similar business, input suppliers, business development service providers, financial service providers, trainers, consultants and other business owners. Developing networks with such stakeholders can broaden their horizons, expose them to new business ideas and assist in the growth of their enterprise.

The advantage that collective action can offer those seeking to make use of scarce resources cannot be ignored, examples from former conflict regions indicate that by coming together entrepreneurs can benefit more than if they were to work in isolation (Boudreaux, 2007). It will be interesting to study and analyse further the how social and economic networks can support micro entrepreneurs in former conflict regions to make use of new opportunities and come together to access services and to determine if these entrepreneurs be willing to work together if they realize the economic benefit of such collaboration.

Acknowledgements

We would like to thank Mr Dave Maurice, Director of the Nucleus Foundation for entrusting us with the task of implementing this survey. We appreciate the roles played by Dr B Nimalathan and Dr A Pushpanathan from the University of Jaffna in supervising and managing the data collection at field level. Special thanks go to the micro entrepreneurs of the North of Sri Lanka for providing information without hesitation.

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Integration between Practice of Strategic Human Resource Management and Organizational Strategy Process: View Points from CEOs and Heads of HR in Sri Lankan firms

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Abstract

The Practice of Strategic Human Resource Management has become more important to strategic management, largely as a result of its role in providing competitive advantage and the rush to competitiveness. Existing literature reveals that it is critical to address the research issue of why the practice of SHRM should integrate with Organizational Strategy Process. The objective of this study was to find out reasons for why the practice of SHRM should integrate with Organizational Strategy Process from the viewpoints of Chief Executive Officers and Heads of Human Resource of Sri Lankan Listed Companies. Qualitative approach was used and the research strategy of this study was descriptive. In order to select the respondents the purposive sampling technique was used. Semi-structured interviews were conducted in order to explore the existing uncovered realities. Heads of HR and CEOs of 20 organizations were interviewed and the data were analyzed through thematic analysis. Initially five themes were identified and later refinement produced four themes. These are original contributions to the Sri Lankan SHRM Literature. The findings of the study help fill the existing knowledge gap and provide some practical implications for professionals on SHRM practices in the Sri Lankan context.

Key words: *Practice of Strategic Human Resource Management, Integration, Organizational Strategy Process*

Introduction

Strategic Human Resource Management (SHRM) became popular in the 1980s with the development of the Harvard Business School's two models integrating strategy and HRM (Jain,

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2004). The key differences between traditional concepts of HRM and SHRM are the extent to which HRM is integrated with the strategic decision making processes and SHRM focuses on organizational performance rather than individual performance (Becker & Huselid, 2006; Karami, Analoui & Cusworth, 2004). Traditionally the HR function was considered as a cost center and in contrast the SHRM perspective is that it should be considered as an investment (Becker and Huselid, 2006). SHRM is an approach to making decisions on the intentions of the organization concerning people, the essential components of the organization's business strategy (Armstrong, 2001). Thus SHRM is a long-term direction of the HR function in an organization (Chanda, Krishna & Shen, 2007). As Armstrong (2001) mentioned "The key feature of strategic HRM is the concept of fit or integration" (p. 36). Two types of integration can be explained as vertical integration and horizontal integration. While vertical integration involves the alignment of HRM practices and the Strategic management process of the firm, horizontal integration implies congruence among the various HRM practices (Wright & Snell, 1998). So vertical integration concerns about the whole organization's aspects and horizontal integration concerns the function of human resource management in the organization.

In the first arena, the state of theory in SHRM research, was at best "borrowing" Meta – theories from other disciplines, and at worst almost completely theoretical (Wright & Snell, 1998). The theories that were used at that time were resource based theory, the behavioral approach, open systems theory, and control theory with a few authors exploring population ecology and critical theory (Wright & McMahan, 1992). After several years Wright had mentioned that the resource-based theory of the firm had become almost the universally embraced meta-theory among SHRM researchers, largely because of both its popularity in the broader strategic literature, and its ability to articulate why HRM could be linked to the economic success of firms (Wright & Haggerty, 2005).

The practice of integration of HRM to organizational strategy has been studied by Boxall and Purcell (2000). They have pointed out that there is a poor explanation for the main logic which can explain "why" of these practices.

Even in the South Asian context, comparatively fewer studies on SHRM have been done (Budhwar, 2000). Even after ten years Stanton and Nankavis (2011) have mentioned that "Earlier research studies have explored the overall value adding potential of the HRM process as a whole. Few have

focused on the links between Strategic HRM and Organizational Strategy process even fewer has examined these relationships in Asia”. In the Sri Lankan context this belongs to the infancy stage. As explained by Dharmasiri (2009), based on the findings of his research there are two factors affecting the relationship between HRM and Organizational strategy Process. They are personal factors and organizational factors namely, Competency Deficits and Opportunity Deficit. He has done a research on these two scenarios and recommends that it is needed to ensure that the Head of the HR is involved in the strategic decision making process of the organization. Further, he has proposed that doing a research with a large sample representing all major industries in South Asia would be useful for the development of SHRM within that context. In the Sri Lankan scenario it is hard to find a research study which has examined the relationship between practice of SHRM and Organizational Strategy Process. Empirical evidence reveals that in the Sri Lankan context there are some organizations practicing SHRM (Sajeevanie & Opatha, 2007), however there is no empirical explanation in Sri Lankan context on why the Practice of SHRM should integrate with the Organization Strategy Process. Hence, this study explains from the view points of CEOs and Heads of HR of Sri Lankan Listed Companies why the practice of Strategic Human Resource Management of these firms should integrate with their Strategy Process.

Literature Review

Based on the theoretical and practical approaches of the organizations which fail to adopt a strategic approach are clearly at risk of reacting to somebody else’s agenda (Budhwar, 2000; Othman, 2009). It can be that they are reacting to the external agendas of Government bodies or professional associations. Also the human resource functions may be drawn into reciting to the trade union agenda, since it has no strategic direction of its own to pursue. An important assertion in this context is the assertion of Massey (1994, p. 27) “Failure to take a strategic approach to human resource management will directly impact on the performance of the organization”. It has also been mentioned that failure to take a strategic approach will have implications for costs, efficiency, productivity and quality.

In the absence of a clear link between HR strategy and corporate strategy, there would be a lack of synergies among HR practices (Crumpacker & Crumpacker, 2004; Karami, Analoui & Cusworth, 2004; Kane & Palmer, 1995). In the absence of HR strategy HR practices are likely to be

inconsistent with one another because there is no broad framework to guide individual HR practices. So the presence of HR strategy, whether formal or informal, explicit or implicit, helps to manage HR strategically, and organizations that manage HR strategically have consistent HR initiatives and thus their HR practices (Kandula, 2008). Budwar has done a study on SHRM practices. The results of that study have shown that over 50% of the firms under the study practice a high level of strategic integration. On the other hand, over 61% of the sampled firms practice a low level of devolvement practices. Interestingly, both the practices of integration of HRM into the corporate strategy and devolvement of HRM to line managers are more determined by a number of organizational policies than traditional contingent variables.

Basically, one of the important features of SHRM practices is integration of HRM into business/Corporate strategy (Badhwar, 2000; Chang & Huang, 2005; Crumpacker & Crumpacker, 2004; Jain, 2004; Othman, 2009; Wright et al., 1992). As such authors have mentioned that the practice of such integration is becoming more important and is increasingly recognized. Lengnick–Hall and Lengnick-Hall (1998) have pointed out three main reasons for recognition of the importance of such integration. Integration provides a broader range of solutions for solving complex organizational problems; to ensure that all resources such as human, technical and financial are with given due consideration in setting organizational goals and assessing implementation capability; and to diminish subordination of strategic considerations to HR preferences and the neglect of the human resource as a vital source of organizational competence and organizational advantage (Othman, 2009). Holbeche (2003) pointed out that through the integration of HRM with the organization's business/corporate strategy, rather than HR strategy being a separate set of priorities, employees will be managed more effectively and organizational performance will get improved. More specially, integration can be defined as the degree to which the HRM issues are considered as part of the formulation of the business strategy (Budhwer, 2000).

The desire to gain competitive advantage by integrating HRM with business strategy and the need of managing people more effectively are main reasons behind strategic HRM thinking. Budhwar (2000) has mentioned that in order to analyze the scenario of SHRM in a national context, the interplay between a number of influences (contingent variables, organizational policies and levels of integration) must be examined. At this stage, human resource management is recognized as

everyone's job. Managers realize the importance of the human resource in positioning the organization for the future (Chang et al., 2005). As Budhwar (2000) pointed out Human resource programs are integrated not only among themselves but also with other functions, such as accounting, marketing, and operations. Human resource implications are considered before a major business decision is made whether it is a new acquisition, a new product or new markets. At this stage, human resource management is recognized as everyone's job. Considering all the above it can be concluded that integration means that changes in any one HR practice will be consistent with other HR practices. Hence, as a strategic Architect, the Head of HR in an organization is supposed to diagnose and design aligned and integrated HR practices, so that, strategic aspirations show up in daily HR actions. Even though most of the researchers have found integrated Human Resource Management practice very significant still there is a debate.

Methodology

Conceptualization of Variables

Practice of Strategic Human Resource Management: SHRM is a set of techniques which enables interventions to be made within the business in order to improve performance. But still there is a significant diversity in the literature over the meaning of "Practice of Strategic Human Resource Management" (Boxall et al., 2000). Basically, SHRM involves designing and implementing a set of proactive HR policies/ practices that ensures that an organization's human capital contributes to the achievements of its competitive objectives. Baker (1999) has identified a number of key features of SHRM, including the internal integration of personnel policies and their external integration with overall strategy and line management responsibility for HR implementation. Furthermore, according to academic research conducted by Wan, Ong and Kok (2005) the practice of SHRM is the degree of participation in core decision making and partnership played by the HRM department and the specificity and formality that HRM departments require in planning and implementation, all of which are designed to ensure that a firm's human capital contributes to achieving the firm's business goals. In this sense Wan et al. (2005) have identified the importance of contributing to the firm's business goals. According to Dessler (2003), "Strategic Human Resources Management (SHRM) can be defined as the linking of Human Resource Management with strategic goals and objectives in order to improve business performance and develop organizational cultures that foster

innovation and flexibility.” As mentioned by Dhar (2010), SHRM means accepting the HR function as a Strategic partner in the formulation of the company’s strategies as well as in the implementation of those strategies through HR activities such as recruiting, selecting, training and rewarding personnel. HR professionals become strategic partners when they participate in the process of defining business strategy and when they design HR practices that align with the business strategy. Meanwhile, Fombrun, Tichy and Devanna (1984) have explained SHRM as a set of practices, policies and strategies through which organizations manage their human capital that influences and is influenced by the business strategy, the organizational context and the socio economic context. However, according to some authors, strategic HRM is an outcome ‘an organizational system designed to achieve sustainable competitive advantage through people’. On the other hand other groups of authors have identified SHRM as a process, ‘the process of linking HR practice to business strategy’. Accordingly, Budhwar (2000) has explained that SHRM is a process of integrating HRM into the corporate strategy and devolvment of responsibility for HRM to line managers. Here integration can be identified as the Head of HR being intimately involved in the overall strategic process in both formal and informal interactions, a real reflection of strategic human resource management in practice. The working definition of Practice of Strategic Human Resource Management for the purpose of this study was adopted from Budhwar (2000) and Opatha (2009) as “HRM policies/functions cohere within themselves and with other functional fields of the organization, practice of integration of HRM into the business/corporate strategy, and devolvment of HRM to line managers.”

Organizational Strategy Process: According to the Oxford dictionary (2011) strategy means a “long- term plan or policy”. Strategy means a comprehensive plan developed by top management to achieve organizational purposes and long- range objectives. Henry Mintzberg has defined strategy as “a pattern in a stream of decisions or actions” and it can be described further as it is more than what the organization intends or plans to do; it is also what it actually does (Hill & Jones, 1992, p. 8). According to the Colling Birmingham University English Language Dictionary (1987), the term “strategy” means something that is done or planned to put you in a situation in which you can achieve what you want or in which you can get an advantage over other people (Opatha, 2009). Strategies exist at a number of levels in an organization. They are basically four levels called;

corporate-level strategy, business-level strategy, functional strategy and operational strategy. Here, corporate-level strategy is concerned with the overall direction and scope of an organization and how value will be added to the different business units of the organization. Business – level strategy can be thought of as second – level strategy. It is about how to compete successfully in particular markets. Similarly, functional strategies are detailed action plans or means that are undertaken in functional areas to achieve short-term objectives and establish competitive advantage. Finally, the fourth level of strategy is at the operating end of an organization. These strategies are concerned with how the component parts of an organization deliver effectively the corporate and business – level strategies in terms of resources, processes and people (Rao, Rao & Sivaramakrishna., 2008). Basically there are four strategy types: the prospector, the analyzer, the differentiated defender, and low cost defender (Slater & Olson, 2000). Furthermore, strategy can be divided into three dimensions. They are strategy formulation, strategy implementation and strategy evaluation. As mentioned above, it is especially disconcerting to find that there exists no widely accepted operational meaning for the term “Strategy” (Venkatraman & Grant, 1986). The organizational strategy process is the creation, implementation and evaluation of decisions within an organization that enables it to achieve its long-term objectives. As mentioned above, a multitude of measures have been employed to capture strategy in different research studies. For this study as the working definition of the organizational Strategy process has been identified as “the creation, implementation and evaluation of decisions within an organization that enable to achieve its strategic objectives.”

Data Collection: As at 01st October 2013, 288 companies were listed on the Colombo Stock Exchange (CSE) representing twenty business sectors with a market capitalization of Rs.2380.9 Billion which corresponds to approximately 24% of the Gross Domestic Product of the country. These companies are the top performing companies in Sri Lanka. Since industry sectors represented by these organizations were 20, it ensured a broad spectrum of industries. In order to select the respondents the purposive sampling technique was used. Twenty CEOs and Heads of HR of Sri Lankan Listed Companies covering all industries (20) were interviewed⁴. Qualitative data and in particular semi-structured interviews were conducted to explore existing uncovered realities. The

⁴ Their comments were identified as SLCR1 to SLCR20 respondent wise without any sequence.

interview schedule included questions on Practice of SHRM and why SHRM should link with the Organizational Strategy Process.

Method of Qualitative Data analysis: As per Bryman (2008), one of the most common approaches to qualitative data analysis is thematic analysis. Since Thematic Analysis is a foundational method for qualitative analysis this method provides a flexible and useful research analysis tool which can potentially provide rich detailed complex data. Braun and Clarke (2006, p.79) define: “Thematic analysis is identifying, analyzing and reporting patterns (themes) within data. It minimally organizes and describes the data set in (rich) detail. However, frequently it goes further than this, and interprets various aspects of the research topic.” Many authors have mentioned that Thematic Analysis is a widely used qualitative data analysis method. Further they have mentioned that Thematic Analysis is one of a cluster of methods that focuses on identifying patterned meaning across a data set. As mentioned by Braun and Clarke (2006, p.78), thematic analysis is a poorly demarcated, rarely acknowledge yet widely used qualitative analytic method within psychology. Further they have concluded thematic analysis as a useful and flexible method for qualitative research.

Following is the process of qualitative analysis followed by the researchers which was adopted from Braun and Clarke (2006). As mentioned above one of the researchers personally conducted the semi structured interviews with Heads of Human Resources and CEOs of 20 Sri Lankan Listed Companies. Hence, the researchers had some prior knowledge of data. However, in order to familiarize with the data set repeated reading of the data was done and search for meanings and patterns was done. Accordingly, the researcher took some notes and created ideas for coding. Since this research involved interviews, the data was transcribed into written form to conduct the thematic analysis.

Results

A CEO from the Sri Lankan Listed Companies stressed that the main reason of why SHRM should integrate with the Organizational Strategy Process as; “If there is a clear linkage between the organizational strategy process and HR strategy then it is very easy to perform implementation part of the strategy. This helps to achieve organizational objectives” (SLCR2). The following comment

was made by one of Heads of the HR in Sri Lankan Listed Companies “Such integration helps to take more people oriented decisions, and then employees of the organization help to achieve the organization’s objectives” (SLCR4). This comment has been supported by another Head of HR’s views regarding this as “if the top management of the organization accepts HR integration as a policy then it will be easier to achieve organizational objectives” (SLCR6). Another Head of HR in a Sri Lankan Listed Company stressed that why SHRM should integrate with Organization Strategy Process as “Strategic Human Resource Management bridges organization strategy and Human Resource Management. We consider Human Resource Strategy as a very important part of when formulating company strategy. And the people are the most important resources in our company. SHRM is not simply about personnel management and it is about the management of work and people in the company. As we all know SHRM differs from traditional HRM. As I mentioned earlier an organization gets competitive advantage through SHRM Practice. For example having the right employees may be very significant to the success or failure of the business” (SLCR8).

Another CEO from a Sri Lankan Listed Company gave his ideas as “To link SHRM with Organizational Strategy Process the most important matter is that Head of the HR should be a capable person. We need to spend more to recruit such a capable HR specialist and it is needed to give many facilities to motivate and retain him. I am not sure whether small scale organizations can do this. But I am sure we get many benefits having a correct person in our HR department as the Head of HR. I believe that to get much involvement at the strategy level it is required to release him from day to day activities. And line manager’s participation is also very important. As you explained, to get line managers’ involvement with HR activities is practiced in our company. However for this the line managers need to be trained in HR aspects. For example if we want their participation on selection then it is critical to give training in this. However all these are costly to the company I think we always think about the cost benefit analysis before we take a decision” (SLCR11).

After getting familiarized with the data it was attempted to generate initial codes. As mentioned by Boyatzis (1998, p 63) a code is “the most basic segment, or element of the raw data or information that can be assessed in a meaningful way regarding the phenomenon”. In this stage the researchers tried to organize the data into meaningful groups. As Braun and (2006) mentioned coding can be

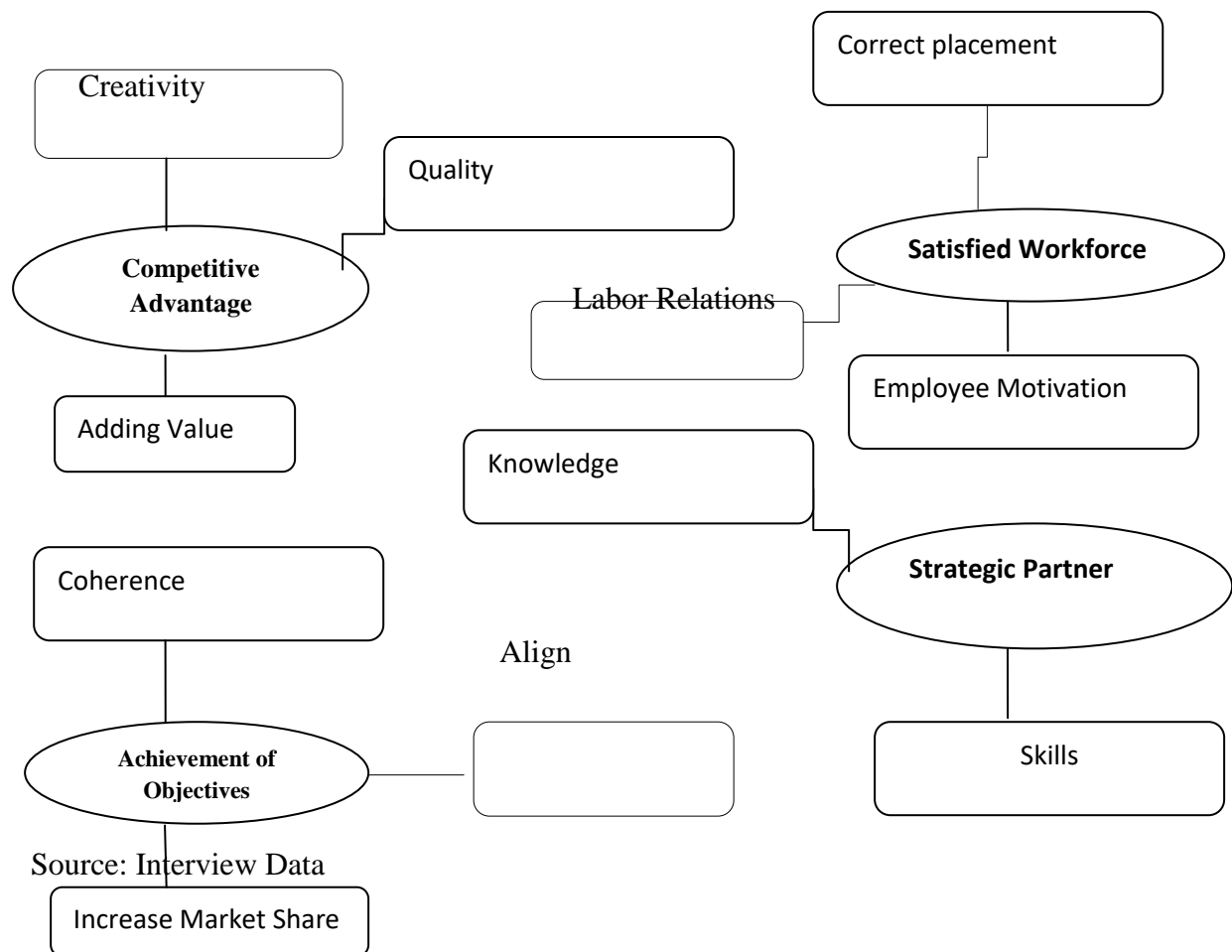
done either manually or through a software programme. For this research a manual method was used. When completing this stage the researchers followed instructions given by Braun et al. (2006) such as (i) code for many potential themes (ii) no data set is with contradiction.

After having a long list of different codes the researchers involved in sorting the different codes into potential themes. This was done by collecting all the relevant coded data extracts within the identified themes. For this Braun et al (2006) have suggested different methods such as use of tables and mind maps. For this research a thematic map (mind map) was used. These maps show how a set of codes has created a theme. Moreover these themes were further analyzed. This involved refinement of those themes. When doing this it was followed the criteria proposed by Tellis (1997) called internal homogeneity and heterogeneity. That means data within themes should cohere together meaningfully, and there should be clear and identifiable distinction between themes. Further, Braun and Clarke (2006) have suggested two refining themes. Hence, the researchers first involved in reviewing the coded data. As explained by them all the collated extracts were read for each theme, and the coherence was checked. There were some themes with problems and rework was done and new themes were created. After finalizing all of them, it was moved to level two. Braun and Clarke (2006) have mentioned clearly that at this level the validity of individual themes can be considered in relation to the data set for two purposes. First, to ascertain whether the themes work in relation to the data set. Second, to code any additional data within themes that have been missed in the earlier coding stage. When involving with this stage it was found a few data relevant to some themes and these data were re-coded and added. Since the researcher being satisfied with the present thematic map, moved to the next stage. At this stage it was further refined the themes and analyzed the data within them. According to Braun and Clarke (2013) define and refine means identifying the assessed of what each theme is about and determining what aspect of the data each theme captures. Figure 1 shows the final thematic map relating to “why SHRM should link with the Organizational Strategy Process”.

The above analysis including figure 1 and Annex 1 revealed that there were four themes that emerged. These four themes include; Competitive Advantage, Satisfied workforce, Achievement of Objectives, Strategic Partner. However there were some companies still who have not linked HR with Organizational Strategy Process. Hence it was found that Heads of HR and CEOs in Sri

Lankan listed companies made their comments on why the Practice of SHRM should integrate with the organizational strategy process so as to gain competitive advantage, to maintain a satisfied workforce, to achieve the objectives and for Head of HR to become as a strategic business partner.

Figure 1: Final Thematic Map Showing Why SHRM Should Link with the Organizational Strategy Process



Discussion

The concept of “integration of SHRM” has mainly two aspects called (a) linking of HR policies and practices with the strategic management process (b) the internalization of the importance of HR on the part of line managers (Massey, 1994). But in the Sri Lankan context the respondents have not

given considerable attention to the line manager's involvement. Interviewees from Sri Lankan Listed Companies have stressed several factors why Practice of SHRM should integrate with the Organizational Strategy Process. After completing thematic analysis the study proposed four themes; Competitive Advantage, Satisfied workforce, Achievement of objectives, and Strategic Partner. These findings reveal that the respondents have identified proper integrating of SHRM with the Organizational Strategy process gaining competitive advantage and satisfied workforce. And this helps to achieve organizational objectives. Furthermore, such integration transfers Head of the HR to a strategic partner. A study conducted by Fey and Denison (2000) has explained that strategic integration helps to achieve the organizational goals and objectives. Aynda and Seni (2010) have found that integrating SHRM with the strategic planning process enables an organization to achieve better its goals and objectives. Further, he has explained how to earn competitive advantage through practices of SHRM. Ayanda and Seni (2010, p 143) observe: "Managers in both private and public organizations are becoming increasingly aware that a critical source of competitive advantage does not often come from indigenous products and services, state of the art technology but from having appropriate systems of attracting and managing the organization's human resources". This view is also emphasized by Dharmasiri (2009) who has cited Strategic partnership as thinking and action of persons, reflecting the long term plans of the organization he/she works for. It also includes involvement in strategy formulation, implementation, and evaluation steps of the strategic decision making process. Armstrong (2001) has mentioned that organizations can achieve their business objectives by linking HR strategies to basic competitive strategies. Ulrich (1997) explained that during the last few years the role of HR professionals has changed from functionally oriented to business oriented. The reason for this may be that now HRM practitioners are becoming Strategic Partners. This finding is supported by the research of Budwer (2000) who has found high practical value in integration in terms of improving the quality of work, performance and achieving success in organizations. As the best fit school explained, HRM will be more effective when it is appropriately integrated with its organizational strategy. Chang and Huang (2005) have explained SHRM as a means of enhancing an organization's competitive advantage. As they further explained traditional sources of competitive advantage such as natural resources, technology and economic of scale are very easy to imitate, but by integrating human resource with organizational Strategy the organization's competitive advantage which is difficult to imitate could be generated from the

firm's human resources. This is well explained in the Resource Based View as developing sustainable competitive advantage through creating value which is difficult to imitate by competitors. After considering the given answers to question why SHRM should integrate with the organizational strategy process, it is clear that HR function no more means only support services. Furthermore, HR plays a strategic role in achieving business goals and organizational effectiveness.

Annex 3: Themes and Interview Extracts on Why SHRM Should Link with the Organizational Strategy Process

Theme	Coding	Comment No	Extracts from the Interview
Competitive Advantage	-Creativity - Quality -Adding value	SLC R3 SLC R14	<p>“As Head of the HR I have my own experience and ideas of employees, when I involve with the strategy formulation process then I can suggest more relevant and new ideas. Then it is very easy to implement those strategies”.</p> <p>“Our Company always considers employees as very important resources. And we give due recognition to HR function. Personally I believe when we link HR with strategy there are lots of benefits like, improving our company goodwill...”</p>
Satisfied Workforce	-Correct placement -Labor relations Employee motivation	SLC R19 SLC R17	<p>“When Head of the HR participates in the strategy process then we have correct ideas regarding company requirements. This is very important to maintain a correct workforce with the organization. Specially this is critical for top level positions.”</p> <p>“Here we get lots of benefits from such integrations, like employee motivation, good labor relations.....”</p>

Achievement of objectives	-Coherence -Align -Increase market share	SLC R2 SLC R19	<p>“If there is a clear linkage between the organizational strategy process and HR strategy then it is very easy to do implementation part of the strategy. This helps to achieve the organization’ objectives.”</p> <p>“Without having proper support from HR head and his staff we can’t run this organization. Employees are the most critical factor for a service sector organization. When they are more knowledgeable then it is easy to attract more customers”.</p>
Strategic Partner	- Knowledge -Skills	SLC R17	<p>“I always try to update my business knowledge because I should participate in strategic level meetings. I don’t like just to participate in a meeting. I try my best to give a full contribution. That is why; I always improve my skills and knowledge. Sometimes we have to take technical field decisions. So I can’t be limited to the HR field. Anyway I like this challenge”.</p>

Conclusion and Implication

The analysis of this study revealed that “why practice of SHRM should integrate with the organizational strategy process” as to gain competitive advantage, to maintain a satisfied workforce, to achieve the objectives and for the Head of HR to become a strategic business partner. Hence, the study found the views of Heads of HR in Sri Lankan Listed companies on why SHRM should link with the organizational strategy process in Sri Lankan Context. These are original contributions to the Sri Lankan SHRM Literature. The findings of the study support to fill the existing gap identified and provide some practical implications to professionals regarding practice of SHRM in the Sri Lankan context.

Further, Head of HR needs to formalize with the HRM process and support to gain competitive advantage. Moreover, Heads of the HR should adjust their mindset and they need to develop their professional capabilities in two ways; improve HR competency and business competency. Thus, as

Chage and Huang (2005, p.9) mentioned “HR practitioners should spend more time diagnosing firm strategic needs and developing practical solutions for achieving business goals”. As they further explained the role that the HR practitioner plays in the company shows the level of how much the firm is concerned with its HRM. Hence, Head of HR needs to be promoted to the strategic level. Then they can involve in the organizational strategic process from strategy formulation to strategy evaluation stage. Furthermore, Heads of the HR need to actively involve with organizational strategy formulation, strategy implementation and the strategy evaluation process of the company.

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