An Assessment of Sector Specific Living Wages for Sri Lankan Apparel Industry Workers

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Abstract
The workers in the apparel industry are often recognized as precariously employed workers due to low wage. These low wages eventually push the workers into debt, malnutrition, cause health problems, and make workers and their dependents extremely vulnerable to unemployment, disability and faster deterioration in old age. Thus, this study attempts to assess the living wage specific to apparel industry workers to support the contention that living wage can contribute to enhance workers economic and social status in the industry while analyzing the existing wage problem in the industry. The data for the study was sourced from a Local Area Survey carried out both in- and out-side Free Trade Zones during September 2012. The study adopted the nutritional based living wage estimation method to derive the living wage for industry workers by employing actual expenditure patterns of workers on food and non-food consumption. The result indicated a significantly high gap between the actual wage and the living wage, indicating the precarious situation of low wage women workers. Finally, it was evident that filling this high gap between living and actual wage and implementing living wage in the apparel industry lead to solving many problems related to workers and the industry in the country.

Keywords: Living wage, Apparel industry, Women workers, Sri Lanka.

1. Introduction

The concept of a living wage has long history[1] and it is accepted as a human right by the Universal Declaration of Human Rights (UDHR)[2] and International Labor Organization (ILO). It was initially mentioned in the ILO constitution in 1919, ILO Philadelphia Declaration in 1944 and the ILO declaration on social justice for a fair globalization in 2008 (Anker, 2011). Although the living wage does not have a universally accepted definition, it is defined as the monthly wage that workers and their families need for a decent standard of living in the region(s) where they live. As emphasized by many labor economists, there are many potential benefits to the firm in paying of living wages such as increasing the effort level, reducing shirking, lowering turnover costs, improving average quality of workforce and worker morale, and greater feeling of loyalty by workers to the firm (Reynolds, 1978; Katz, 1986). The empirical findings, which support the contention of a firm`s living wages, suggest that low wages push the workers into debt, lead to malnutrition, cause health problems, and make workers and their dependents extremely vulnerable to unemployment, disability and faster deterioration in old age (Merk, 2009). Meanwhile, there is a larger corpus of theoretical and empirical literature on the effects of low wage on workers, firms and society. But less attention has been focused on the determination of living wage as an alternative wage that recognizes the dignified life of workers in the apparel industry in Sri Lanka.

By 2008, the Sri Lankan apparel industry comprises a 270,000 workforce of mostly young and unmarried internally migrant women. It accounts for 13 percent of industrial employment of the country (Savchenko and Acevedo, 2012). The industry is renowned for low wages, excessive overtime and poor working conditions (Oxfam Community Aid Abroad, 2004;

[1] For details, see Anker (2011).
[2] UDHR Artricle23, paragraph 3. As quoted by Prasanna and Gowthaman (2006), the UDHR provides that "everyone who works has the right to just and favorable remuneration ensuring for himself and his family an existence worth of human dignity.

Prasanna and Gowthaman, 2006). Although it is a globalized industry, the workers at the bottom level of the supply chain are often recognized as precariously employed workers due to their low wages. This contradicts the most prominent economic theory of efficient wage that states the positive relationship between workers` productiveness and their wages (Katz, 1986). However, determination of a living wage for the workers in the apparel industry in Sri Lanka has become a renewed issue of interest for labor economists due to existing empirical evidence against the industry minimum and the actual wages (Oxfam Community Aid Abroad, 2004; Prasanna and Gowthaman, 2006; Biyanwila, 2010; Draca *et al*., 2011).

The industry minimum wage has proven to be increasingly inadequate to maintain an average family in the major apparel producing countries in Asia (Gustavo, 2005). According to Prasanna and Gowthaman (2006), in consideration of the average basic salary of the industry, 84 percent of workers were below the United Nations defined poverty line of two US dollars a day and 60 percent of workers were below the household poverty level of Rs. 5,000 defined by the Institute of Policy Studies in 2005. At the same time, the industry minimum wage has not been revised adequately in line with escalating cost of living and the wages suggested by previous studies, though workers demand a decent wage hike.[3] For instance, the Colombo Consumer Price Index (CCPI) indicated an increase of cost of living by 77 percent from 128 in 2005 to 226 in 2011.[4] With the recent minimum wage revision adopted by the Sri Lanka Wages Board, the industry minimum wage remains at Rs. 8,970. It is a 30 percent increase in the minimum wage considering the fact that the last

[3] Prasanna and Gowthaman (2006) estimated the sector specific living wage for Sri Lankan apparel industry workers in a sample of 850 workers. Under the estimation option A, a married and unmarried apparel industry worker in the FTZ should be able to earn Rs. 12,726 (US dollars 127) and Rs. 14,782 (US dollars 147), respectively in order to achieve a dignified life. A married and unmarried industry worker who work outside FTZ should earn Rs. 9,855 (US dollars 98) and Rs. 11,476 (US dollars 114), respectively.

[4] The CCPI is used as the official Consumer Prices Index in Sri Lanka. It uses the year 2002 as a base year.

revision made in 2010. Further, the nutritional status of women workers in the industry was found to be lower than that of workers in other occupations and industries (Amarasinghe, 2007). This is largely supported by the contention that the industry minimum wage is not adequate to maintain even the minimum nutritional standard of a majority of industry workers. According to the apparel industry survey conducted by the Sri Lanka Labor Department and Oxfam in 2006, 85 percent of the industry workers are women (Sri Lanka Labor Department and Oxfam, 2006). Yet, the method applied for minimum wage fixing is debatable as it fails to provide sufficient income to the average family above the poverty line of many developing countries (Numark, 2002; Gustavo, 2005; Prasanna and Gowthaman, 2006).

The main objective of this study is to estimate the women sensitive living wage for the Sri Lankan apparel industry workers while evaluating the existing wage problem of this prominent industry in the Sri Lankan economy. Due to the following reasons, the focus of this study was on female industry workers. Firstly, the gender biased employment structure of this industry in the country and countries of the region indicates the presence of a relatively high degree of women workers in this prominent industry. Secondly, it is evident that today there are approximately 30,000 vacancies for women workers in the industry. It clearly indicates that the industry labor market is in a state of disequilibrium, specifically in attracting female workers. Thirdly, at present, the industry is planning to boost its earning to reach the five billion US dollars by 2016. In this context, it is obvious that increase in female work force of the industry is essential in order to attain its objectives. Thus, the enhancement of the socioeconomic status of the women workers in the industry would be very helpful in attracting them into the industry. Accordingly, this study will examine the characteristics of the workers in the industry; the existing wage structure, income and consumption patterns and nutritional standards, and estimate the women sensitive sector specific living wage for the industry by taking into account the nutritional status of women workers.

2. Overview of the Sri Lankan Apparel Industry

The apparel industry in Sri Lanka emerged as an important sector with the introduction of open economic policies in 1977. Since 1977, the industry has grown with secured market conditions established by two international trade agreements: Multi Fibre Arrangement (MFA)[5] which was entirely phased out in 2005 and GSP+ system.[6] Under the MFA, 80 percent of exports to the USA were under the quota system. In addition, low labor costs, liberal economic and trade policies and tax benefits and concessions granted to the industry are other critical contributory factors for the emergence of this industry as a leading industry of the country.

Since 1977, the industry has played a major role in several aspects of the Sri Lankan economy. First, employment contribution to the unskilled, young and women labor force is incredibly important. Today, the industry provides 270,000 direct employment opportunities (13 percent of country`s industrial employment) (Savchenko annd Acevedo, 2012) and over 0.5 million indirect employment opportunities to make it as the largest single employment provider in the industrial sector. Second, it is the strongest manufacturing sub-sector that generates foreign exchange to the country. In 2011, it accounted for 52.4 percent of industrial exports and 39.6 percent of the country`s total export earnings with the value of USD 4,191 (Central Bank of Sri Lanka, 2011).

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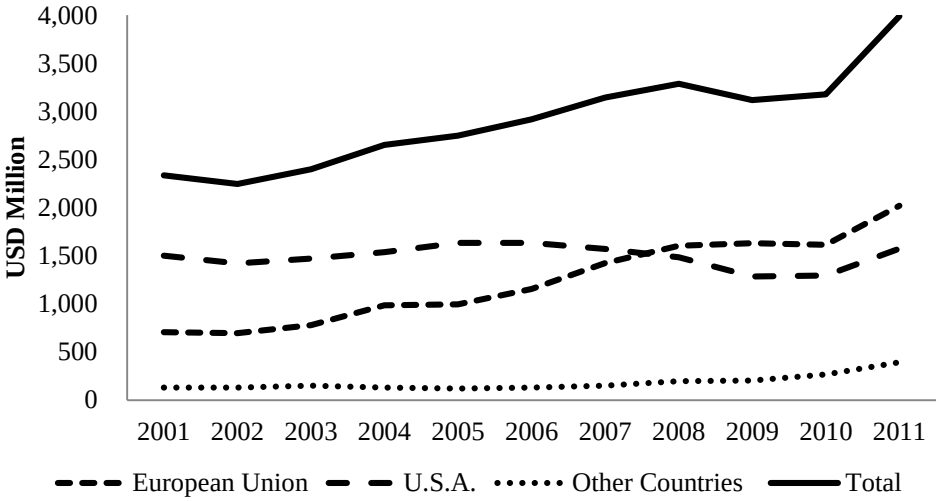
[5] MFA was designed as a short term protectionist measure to allow industrialized countries mainly USA, European Union and Canada to restructure and adjust to the competition from less expensive imports from developing countries. Under this Multilateral Agreement, quotas were negotiated, specifying the volume of items traded between partners. The controversial Uruguay Round negotiations of General Agreement on Tariff and Trade (GATT) in 1995 it was agreed to eliminate all restrictions applicable to the textile and garment industry under the Agreement on Textiles and Clothing (ATC) within ten years under four phasing out stages beginning in January 1995 (Prasanna, 2007).

[6] The Generalized System of Preferences (GSP) is a trade arrangement which was established by EU to certain developing countries aiming to contribute to the reduction of poverty and the promotion of sustainable development and good governance. It provides preferential access to the EU market in the form of reduced tariffs for certain export items in entering the EU market (Prasanna, 2009).

Figure 1
Trends of garment exports in the market of USA, EU and Other countries: 2001-2011



Source: Central Bank of Sri Lanka, Annual Reports, 2001-2011.

Third, the industry was able to attract a huge amount of Foreign Direct Investment (FDI) due to the favorable government policy measures with regard to the industry. For instance, in 1992, US dollar 100 million worth of inflow of FDI into the industry was recorded and it increased to US dollar 265 million by 2002. During the period from 1992 to 2002, FDI in the apparel industry has averaged over 75 percent of the country`s total FDI. By 2006, there were approximately 300 garment factories consisting of 20 percent small, 53 percent medium and 27 percent large and extra large scale factories in Sri Lanka (Department of Labor and Oxfam, 2006). Apart from the 200 garment factory programs, a majority of the industry is concentrated in various dedicated Free Trade Zones (FTZs), and in and around a few townships. These economic measures indicate that the Sri Lankan economy is highly dependent on the apparel industry, in terms of the creation of employment, generation of foreign

exchange and attraction of FDI. Moreover, the recent export statistics of the industry indicates the growing exports to the USA, EU and other markets (see Figure 1). In this scenario, the Sri Lankan garment sector can be recognized as a crucial sector in terms of its support to the economy and society.

3. Research Methodology

Sampling Strategy and Data Collection

In order to fulfill the study objectives, the data were drawn from a Local Area Survey (LAS) carried out during September 2012. The LAS method was selected for several reasons: We study the standard of living of a particular type of demography; it provides the space to tailor ones sampling strategies and survey questions based on need and pilot experience; and it can easily control the differences between the general population and the reference group. Additionally, the results cited in many previous studies suggest the appropriateness of the LAS method in the calculation of living wage of a particular segment of the work force (Prasanna and Gowthaman, 2006).

The LAS was conducted in two sub-regions of the industry: the Free Trade Zones (FTZs) and outside Free Trade Zones (OFTZs). By taking into account the heterogeneity of worker earnings, workers expenditure patterns and market conditions, which were indicated by previous studies, these two sub-regions were considered for the LAS. Next, we considered the employment structure of the industry to determine sample size. The employment statistics reveal that 44 percent of workers are in the FTZs (Katunayaka, Biyagama and Koggala) and the rest (56 percent) in OFTZs. However, due to the high density of the workers in the FTZ area and location of several industrial parks in other regions of the country, we put high weightage on the FTZ in the selection of the workers sample. Therefore, we selected 160 workers, including 90 and 70 workers from the FTZ and OFTZ respectively, by using a stratified random sampling technique. The targeted worker category of the industry was the operational category (cutters, helpers,

ironers, machine operators and checkers) because they represent 94percent of total industry work force (Dheerasinghe, 2003) and almost all were at the bottom level of the supply chain and received the lowest salary scale in the industry. The workers, who were randomly selected, were interviewed by the trained data enumerators administering a semi-structured questionnaire. The questionnaire was primarily designed to elicit the data on workers households, earnings and expenditure patterns, current market prices where they live, savings and indebtedness. Subsequently, we conducted a market survey based on the information provided by workers in the selected regions in order to gather prices of commodities that workers consumed.

Estimation of the Living Wage for Sri Lankan Apparel Industry Workers

In literature, there is no commonly accepted methodology for estimating the living wage. The previous research suggests the essential guidelines for living wage methodologies (Gustavo, 2005; Prasanna and Gowthaman, 2006; Anker, 2006) and highlights existing methodological issues (Brenner, 2002; Prasanna and Gowthaman, 2006; Anker, 2011). It is generally accepted that four essential steps constitute living wage estimation: (i) per capita cost of basic needs; (ii) household size needing to be supported; (iii) number of full-time equivalent workers in the households; and (iv) margin for discretionary expenditures.[7]

Firstly, the per capita cost of basic needs consists of the amount on low-cost food which essentially supports maintaining the required nutritional standard of the worker, housing of an acceptable standard and adequate clothing and other basic needs. Some studies suggest a food basket approach which provides standard level of per capita calorie (Kcal) to determine the food cost. For instance, food basket, based on 3,000 Kcal, is used in the calculation of the Asia Floor Wage (AFW) for the apparel industry by the labor organizations (Merk, 2009). The Apparel Industry Labor Rights Movement

[7] For details, see Anker (2011).

adopted a food basket method based on 1,900 Kcal as recommended by the Medical Research Institute (MRI). However, there is no uniform method of determining other basic needs but studies suggest the importance of including the cost of water, personal-care and medical, fuel and electricity, education, transportation and communications and long term purchases (Brenner, 2002; Gustavo, 2005). The determination of a specific standard for these variables is subject to various factors such as countries (high, middle and low income countries), localities (urban, semi-urban and rural), gender, living standards, cultural patterns, etc.

Secondly, according to Glickman (1997), living wage is a wage level that offers workers the ability to support families to maintain self respect and to have both the means and the leisure to participate the civil life of the nation. Respecting this concept, some studies have used different household sizes in the living wage estimation process. For example, Prasanna and Gowthaman (2006) used the average household size of the studied worker sample in living wage fixing for apparel industry workers in Sri Lanka. It was mainly due to the study which was done on a specific segment of the labor force of the country. However, many institutions recommend four persons (two adults and two children) as their core household size (Merk, 2009). Same as in other steps, studies suggest different margins for discretionary income. Gustavo (2005) includes the savings for long term purchases and emergencies, Ethical Trading Initiative (ETI) (2000) set the savings as 10 percent of income in their living wage summit formula. This is further expounded in *Singalowada Suthraya* of Buddhist philosophy, which emphasizes that a worker should save 25 percent of income.

There are two main methodological issues of estimating the living wage; subjectivity and endogeneity. The issue of subjectivity arises because reasonable people can honestly differ on living standard that they espouse and a living wage should be supportive of living. The endogeneity problem arises because of the dependency of the living wage on workers expenditure details. It is problematic from a conceptual point of view owing to the fact that workers

expenditure patterns are strongly conditioned upon the existing wages. The current expenditure levels of workers, particularly the low wage workers, may not reflect the real market preferences of the workers due to the income constraints. Therefore in this study, we adopted the nutritional based living wage estimation methodology with a representative reference group in order to minimize the problems of subjectivity and endogeneity.

It is better if the methodology of a study does not deviate much from the previous studies in a situation where there are no rigorous changes that happen in the phenomena of the study. To maintain the consistence of research findings on a sector specific living wage for Sri Lankan Apparel Industry Workers, the same methodology used by Prasanna and Gowthaman (2006) was adopted for this study (nutritional based living wage estimation). Further, this methodology was identified as an effective methodology in calculating the sector specific living wage by labor researchers and labor organizations (Adhikari and Yamamoto, 2008; Chandararot and Dannet, 2009; Miller, 2009; Miller and Williams, 2009; Biyanwila, 2010). Yet, we defined the living wage at the outset of the study as a living wage would support the contention that the worker and her family should be able to afford a decent standard of living as acceptable by the society where she lives.

From this conceptual point of view, we adopted four steps in estimating the living wage: (i) per capita cost of basic needs and other; (ii) household size needing to support; (iii) number of full-time equivalent workers in the households; and (iv) margin for discretionary expenditures or savings. As explained in the methodological guidelines, Per Capita Average Cost of Basic Needs was determined based on per capita food consumption cost and per capita non-food consumption cost. In this connection, the food basket method based on 1,900 Kcal as recommended by MRI was applied. Specifically, an application of nutritional anchor method minimizes the problem of subjectivity and endogeneity in estimating the living wage. Thus, first, we calculated calorie consumption cost per rupee following the mathematical model (1) and second, derived the cost of food consumption bundle for each worker, which

gives 1,900 Kcal, by using the calorie consumption cost per rupee.

$$\text{Calorie consumption per rupee} = \sum_{k=1}^{n} \frac{\left((Q_i/100) \times Kcal_i\right)}{P_i} \quad (1)$$

where Q_i is the quantity of i-th food item in gram, Kcal is the amount of calories per 100 gm of i-th food item and P is the market price of i-th food item.

Following the four above steps, the study employed following mathematical model in estimating the living wage. It is the model developed and adopted by Prasanna and Gowthaman (2006), combining the method used by Organization for Economic Co-operation and Development (OECD) and the Living Wage Summit (1997).

$$\text{Living Wage} = \left[\sum_{k=1}^{n} \frac{AHS_i \times PCCBN_i}{AIR_i}\right] + I_i \times SM \quad (2)$$

where, *AHS* is the Average Household Size of the *i*-th household, *PCCBN* is the Per Capita Average Cost of Basic Needs of *i*-th worker, *AIR* is the Average Income Receivers of *i*-th worker's household, *I* is the average Income of *i*-th worker and *SM* is the Savings Multiplier. Moreover, the statistical significance of the earnings and expenditure of different worker groups -in- vs out-side FTZs and male vs female workers-were tested using the Student's t-test.

4. Results and Discussion

Characteristics of Surveyed Workers in the Apparel Industry

The characteristics of 160 workers in the sample are presented in Table 1. The age group of 17-32 represents approximately 80 percent of each sample. Similarly, the female representation in the work force is higher in the both regions compared to males. Table 1 shows that 77 percent and 81 percent of workers in the FTZ and OFTZ are respectively female workers. These findings

indicate that the general characteristics of the industry work force are consistent with the other research findings (Brenner, 2002; Prasanna and Gowthaman, 2006; Anker, 2011). The average household sizes are 2.63 and 3.21 persons per household in the FTZ and OFTZ respectively. It indicates a smaller family structure of this work force compared to the national average household size of 4.2 (Department of Census and Statistics, 2012). The average numbers of income receivers are 1.9 and 2.34 respectively in the FTZ and OFTZ.

The majority of the workers, 54 percent and 50 percent of sampled workers in the FTZ and OFTZ, respectively, have only less than 5 years of working experience in the garment sector. According to the study by Prasanna and Gowthaman (2006), the workers experience in the industry was nearly 70 percent. As stated by Oxfam Community Aid Abroad (2004), the main reasons for such short terms of service might be the poor wages, monotonous and hard working conditions, marriage and its consequences *i.e.* lack of employment opportunities for the spouse, lack of affordable accommodation for a family unit in close proximity to the work place, long hours of work which are not conducive to mothers with young children and lack of social recognition for the apparel industry workers. However, we did not find any significant change of characteristics of the industry workers that was identified by the living wage estimation study.[8]

Income Patterns of the Workers in the Sample

The gender basis analysis of the surveyed workers` income revealed that there is no statistically significant difference of wages between female and male workers (see Appendix 1). The result of the hypothesis test indicated that the difference between the wages of two worker groups (female and male) was not statistically significant (t = 0.462). However, region (FTZ and OFTZ) basis analysis of the workers' income indicated a statistically significant difference. It showed that the workers in the FTZ earned 17,145 rupees which is 1,927

[8] For details, see Prasanna and Gowthaman (2006).

rupees higher than the earnings of the workers in the OFTZ (see Table 2). The result of the hypothesis test indicated that the difference between the wages of workers in two regions was statistically significant; t = 2.12, at five percent significance level. Thus, our living wage analysis was performed in order to derive the two living wage indices owing to the wage differences between both regions – the FTZ and OFTZ.

Table 1
Descriptive Statistics of the Surveyed Samples

Particular		FTZ		OFTZ	
		Frequency	%	Frequency	%
Age	17-22	21	22.6	16	23
	22-27	26	28.0	18	26
	27-32	27	29.0	22	31
	32-37	6	6.5	6	9
	37-42	6	6.5	5	7
	42-47	3	3.2	3	4
	47-52	4	4.3	0	0
Gender	Female	69	77	57	81
	Male	21	23	13	19
Civil status	Unmarried	47	52	34	49
	Married	43	48	36	51
Household size		2.63 (1.81)	100	3.21 (1.53)	100
No. of income receivers		1.90 (0.84)	100	2.34 (1.01)	100
Year of experience in the garment sector	< 5	49	54	35	50
	5 – 10	24	27	27	39
	> 10	17	19	8	11

Note: Figures in parentheses are standard deviations
Source: Field survey on garment workers in the apparel industry in Sri Lanka, September 2012

Table 2 further revealed that approximately 60 percent of the workers' earnings are represented by the basic wage and rest by the overtime, target

incentives, service intensives, attendance incentives, bonus and ETF/EPF. Overtime income represents the major earning component other than basic wage, which is 18.2 percent and 19.3 percent of the total wage of workers in the FTZ and OFTZ, respectively.[9] The workers in the FTZ earn on average 71.7 rupees per hour of overtime. On average they work 1.56 hours of overtime on each working day. In terms of the worker in the OFTZ, the worker receives 63.4 rupees per hour overtime while working on average 1.62 hours of overtime in an every working day. It showed the workers' high dependency on working in excess of 48 hours per week in the consideration of 6 working days per week. For instance, the average worker in the FTZ and OFTZ work 57.4 hours and 57.7 hours per week, respectively. It is 9.4 and 9.7 hours excess of regularly working 48 hours per week as stipulated by the ILO.

The main reason for working in excess of 48 hours would be low basic wage. According to the Spurgeon (2003), working in excess of 48 hours per week appears to constitute a significant occupational stressor which reduces job satisfaction, increases the effects of other stressors and significantly increases the risk of mental health problems. Further, working more than 50 or 60 hours per week, would lead to increase the risk of cardiovascular diseases (Spurgeon, 2003). It also hinders the family relationship. The main reason for involving in excess work in the factory is the existing amount of large orders (high demand) in the industry that cannot be met by employing the existing work force within regulated working hours. This obviously indicates the disequilibrium of the industry labor market which is mostly associated with low wages. Therefore, these findings indicate the existing precarious conditions of the workers due to the low wage.

[9] Any work performed in excess of the normal working day to be treated as overtime work and shall be remunerated accordingly. Every hour of such work should be paid at 1.5 times the normal hourly rate of wages which is determined by dividing the monthly rate of wages by 200 in the case of factory employees (Board of Investment, 2010).

Table 2
Monthly Distribution of Earnings of the Workers in Apparel Industry: FTZ vs OFTZ

	Variable	Mean income (Rs.)	Sta. Dev.	Min.	Max.	% of total wage
FTZ	Basic wage	9,555	1,057	7,500	17,000	59.7
	Overtime	2,913	1,308	90	10,000	18.2
	Target incentives	1,708	784	75	3,000	3.5
	Service incentives	176	721	500	4,000	1.1
	Attendance incentives	960	574	500	4,000	6.0
	Bonus	400	220	0	1,925	2.5
	ETF/EPF	1,433	478	1125	2,550	9.0
	Total wage	17,145	1,404	5,300	24,500	100.0
OFTZ	Basic wage	8,452	1,102	7,300	17,000	61.0
	Overtime	2,674	1,246	220	7,800	19.3
	Target incentives	1,550	622	500	3,000	2.1
	Service incentives	152	712	500	2,500	1.1
	Attendance incentives	831	488	500	3,000	6.0
	Bonus	191	120	0	255	1.4
	ETF/EPF	1,268	520	1,095	2,550	9.1
	Total wage	15,118	1,482	9,500	18,300	100.0
	t statistics	2.12**				

Notes: The t-test was performed to test the hypothesis that there is a statistically significant difference between the two total wages of the workers-in- and out-side FTZs. 12 percent and 3 percent of basic wages contributed by employer to EPF and ETF, respectively.

Source: Field Survey, September 2012

Estimation of Sector Specific Living Wage for Apparel Industry Workers

The Medical Research Institute (MRI) of Sri Lanka provides three factors; age, gender and body weight, in determining a person nutritional requirement. As the estimation of living wage is undertaken with regard to the women workers is mostly characterized by the young and the nutritional level of female, moderately active (above 18 years) and average body weight of 47 kg were determined for the living wage estimation (see Table 3). It suggests 1,900 calories which are required for minimum nutritional well-being.

Table 3
Recommended Daily Intake of Energy (calorie) for Sri Lankan Population
(Based on Recommendation of WHO/FAO Expert Panels)

Category	Age (years)		Body weight (kg)	Energy (Kcals)
Male	> 18		65	3,000
	Moderately active		55*	2,530
Female	> 18	Non-pregnant	55	2,200
	Moderately active	Non-pregnant	47*	1,900
		Pregnant	47*	2,100
		Lactating 0-6 months	47*	2,650

Note: * Average weight for Sri Lankan males and females
Source: Medical Research Institute, Sri Lanka

The cost of the consumption bundle which provides 1,900 calories was calculated by taking into account the market prices of purchased food items at the time of the survey. Specifically, those food items were low-cost. The cost of food consumption bundle for each worker was determined using the mathematical model (1) as explained in the methodology section.

Table 4

Monthly Per Capita Food Costs Required to Maintain the Recommended Energy Level by the Workers in FTZ and OFTZ

	Category	Age (years)		Body weight (kg)	Recommended energy (Kcals)	Cost of food bundle (Rs.)
FTZ	Male	> 18		65	3,000	7383
		Moderately active		55*	2,530	6226
	Female	> 18	Non-pregnant	55	2,200	5414
		Moderately active	Non-pregnant	47*	1,900	4676
			Pregnant	47*	2,100	5168
			Lactating 0-6 months	47*	2,650	6522
OFTZ	Male	> 18		65	3,000	4993
		Moderately active		55*	2,530	4210
	Female	> 18	Non-pregnant	55	2,200	3661
		Moderately active	Non-pregnant	47*	1,900	3162
			Pregnant	47*	2,100	3495
			Lactating 0-6 months	47*	2,650	4410

Note: * Average weight for Sri Lankan males and females

Source: Medical Research Institute, Sri Lanka and authors' calculations based on the Field Survey, September 2012.

By employing the mathematical model (1), we determined the per

rupee calorie consumption level for both worker groups. A significant difference was found in the per rupee calorie consumption among the two worker groups concerned owing to the fact that both workers were not facing similar market conditions. This is proved by a higher standard deviation of the market prices of food items. By taking into account these factors, we determined the monthly per capita food costs required to maintain the recommended energy level by the MRI (see Table 4). Though Table 4 presents different worker categories, the study only focused on the moderately active non-pregnant female workers due to the high representation of them in the industrial work force.

Table 5
Representation of Workers in Below and Upper Levels of the Reference Food Consumption Cost

Region	Worker group	No. of workers	Mean monthly food cost (Rs.)	Standard deviation
FTZ	Below 1,900 Calorie level	32	4,368	175
	Upper 1,900 Calorie level	37	4,912	168
OFTZ	Below 1,900 Calorie level	34	2,895	202
	Upper 1,900 Calorie level	23	3,325	190

Source: Authors calculations based on the Field Survey, September 2012

Based on the food expenditure level on 1,900 calories, we define the reference group for the study in order to avoid measurement errors in calculation. In this connection, women workers in each sub-region of the industry (FTZs and OFTZs) were divided to represent equally the lower and the upper side of defined level of food consumption cost for each group in a month. In this connection, we found that there was no significant variation in

food consumption data of the workers whom were below and above the defined food consumption cost in each sub-region (see Table 5). The main reason for the insignificant variation is that the food consumption pattern of workers in each region was more homogenous.

Table 6
Cost of Basic Needs of Apparel Industry Workers in FTZ and OFTZ

Particulars	FTZ (Rs.)	%	OFTZ (Rs.)	%	t value
Per capita food consumption cost	4,676	28.0	3,162	21.2	1.85**
Per capita non-food consumption cost	12,026	72.0	11,744	78.8	2.82***
1. Clothing and textile & foot wear	1983	16.5	1,904	16.2	
2. Housing	1500	12.5	1,500	12.8	
3. Personal care and health	2594	21.6	2,383	20.3	
4. Fuel and light	1136	9.4	467	4.0	
5. Education, cultural and entertainment	516	4.3	444	3.8	
6. Transportation and communication	2719	22.6	2,453	20.9	
7. Other	1578	13.1	2,593	22.1	
Total per capita cost of basic needs	16,702	100.0	14,906	100.0	2.49***

Note: Cost of housing was determined based on field observations. According to field observations, workers are sharing the rooms. Therefore, we, in this study, determined Rs. 1,500 as cost of housing per month considering the all cost including rent and any other cost related to the housing incurred to the workers. Cost of other included the contribution to family, trade union and societies, payments of debts, expenditure on wedding/ funerals.
Parentheses are *P* values.
*** $P < 0.01$ significance level; ** $P < 0.05$ significance level.

Source: Field Survey, September 2012

In addition to the cost of food consumption, we derived the expenditure on non-food consumption relating to housing, clothing, health care, fuel and energy, transportation, communication and entertainment by taking into account the expenditure patterns of the surveyed sample. However, the study identified the non-reflection of the specific and acceptable standard for some expenditure variables of the workers such as housing. Therefore, in order to avoid this downward bias in using actual expenditure data of workers, we made certain adjustments relating to housing based on the principles adhered

by the living wage studies in different countries.

According to Table 6, the per capita non-food consumption cost of workers in the FTZ is 12,026 rupees and it represents 72 percent of total cost of basic needs of the worker. In terms of the OFTZ, per capita non-food consumption cost is 11,744 rupees which is 79 percent of the total cost of the basic needs of the worker. In terms of the total per capita cost of basic needs, the workers attached to companies in FTZ recorded 16,706 rupees which is 1,796 rupees higher than the workers in the OFTZ. Moreover, the results of the hypothesis test indicated the statistically significant difference between the two worker groups in terms of per capita food consumption cost (t = 1.85 with p = 0.07), per capita non-food consumption cost (t = 2.82 with p = 0.02) and the total per capita cost of basic needs (t = 2.49 with p = 0.03).

Determination of Household Size Needing to Support

All the definitions of living wage in literature emphasize the responsibility of workers to support the family members (Glickman, 1997). In this connection, we defined the household size base on sampled workers in the two sub-regions. The reason for adhering to this method was that pervious research indicated a significant difference of household sizes due to specific characteristics such as age level of the majority of the workers, marital status, localities etc.[10] Therefore, we defined the household size as 2.63 and 3.21 for the workers in the FTZ and OFTZ respectively.

Determination of Number of Full-time Equivalent Workers in Households

Similarly, we used the actual number of household full-time equivalent workers in the defining the household size. Thus, the study defined 1.9 and 2.34 as number of full-time equivalent workers for the FTZ and OFTZ respectively.

[10] For details, see Prasanna and Gowthaman (2005).

Determination of Margin for Discretionary Expenditures or Savings

According to CREA (Center for Reflection, Education and Action) as quoted by Prasanna and Gowthaman (2006), "a sustainable living wage standard…that reflects the needs of workers, a dignified living standard and the ability to move beyond immediate necessity to planning for the future" reflects a determination of margin for discretionary expenditures or savings for this specific industry worker in Sri Lanka. Especially for a female worker, this is important because their primary motive is to save money or accumulate some durables during their working life. The rationale of incorporating a saving component into the living wage is that inadequate savings discourages the workers to continue in the industry in the long term. It was evident that most of the workers leave the industry within a very short period of work, particularly less than five years (Dheerasinghe, 2003; Oxfam Community Aid Abroad, 2004; Prasanna and Gowthaman, 2006).

Table 7
Estimated living wage for apparel industry workers in FTZ and OFTZ

Particulars	FTZ		OFTZ	
Average household size (*AHS*)	2.636	(1.81)	3.214	(1.53)
Per capita cost of basic needs (*PCCBN*)	16,702		14,906	
Average no. of income receivers (*AIR*)	1.9	(0.84)	2.34	(1.01)
Average income of the worker (*I*)	17,145		15,118	
Savings multiplier (*SM*)	0.25		0.25	
Living wage (Rs)	27,458		26,951	
Living wage (USD)	206.5		203.6	

Note:
Living wage estimation was done based on the equation (2) in the methodology.
Parentheses are standard deviations
Source: Field Survey, September 2012

The completion of a five year work period becomes the clear cut-off line for leaving the industry by most of the workers because workers are then eligible for gratuity. In fact, it indicates the need of savings for workers in this industry. On the other hand, in determining the minimum wage, the authorities

do not take into account savings or any allocation for discretionary expenditures. As the study entirely relies on the methodology adopted by Prasanna and Gowthaman (2006) and the workers expenditure patterns and savings, behavior also proved that approximately 25 percent of their income reserved for long term purchases, emergencies and future expectations, 0.25 (25 percent) was used as the savings multiplier. It could further assist to maintain the consistency of calculating living wage estimation in Sri Lanka.

Following these four steps and by taking into account the existing limitations, this study estimated that the living wage for the Sri Lankan apparel industry workers by employing the mathematical model (2) explained in the research methodology. Table 7 shows the estimated living wage. It shows that the worker in- and out-side FTZ should earn 27,458 rupees (US dollars 206.5) and 26,951 rupees (US dollars 203.6) respectively for the minimum standard of living although the minimum wage for the industry is 9,125 rupees (US dollars 68.6) and actual wage (including all earning from working in the industry) is 17,145 rupees (US dollars 106.4) and 15,118 rupees (US dollars 113.6) in- and out-side FTZ, respectively. These results further indicate that the low minimum wage has pressurized workers to be involved in other income variables of the industry which affect the increase of occupational stress, hinder family relationships and sustainability of job, etc.

5. Conclusion

This study evaluated the sector specific living wage for apparel industry workers in Sri Lanka. The analysis of worker earnings from the industry indicates the existing wage problem in the industry. Only, about 60 percent of workers' earnings are represented in the basic wage of workers. The study found high dependency of workers on overtime to supplement their earnings. These findings show a marginal increase of overtime of total wage of workers as reported by Prasanna and Gowthaman (2006). According to Spurgeon (2003), high worker dependency on overtime for their earning has an adverse impact on the workers life in terms of stress related problems, mental health,

risk of cardiovascular diseases and family relationships. This may increase the economic insecurity of these low wage workers in the future. This was further supported by the basic characteristics of the industry workers. Specifically, most of the workers leave the jobs within few years of working. This study showed that almost 83 percent and 89 percent of the workers in the FTZ and OFTZ respectively have less than 10 years of working experience. Therefore, it is evident that long term reliance of workers in this industry was limited. This is because of the low basic wage and excess overtime as reported in empirical literature.

The adoption of nutritional based living wage assessments was done in order to avoid some methodological issues of estimation such as subjectivity and endogeniety. It shows that an industry worker in the FTZ and OFTZ should be eligible for 27,458 rupees (US dollars 207) and 26,951 rupees (US dollars 204) respectively in order to maintain a decent standard of living. This is a 65 percent increase compared to estimated living wage in 2006 (US dollars 125 for FTZ worker under the option B) in terms of US dollar. The increase of living wage for industry workers is basically associated with increase of the cost of living, which is 79 percent during the concerned period (2005 to 2011) combined with depreciation of domestic currency against major foreign currencies. This number is relatively low compared to the mean household income of the country in 2009/10, which was 36,451 rupees (US dollars 319). It can be justifiable for this study because the concerned workers in this study represent one of low wage worker groups of the country. Also, it was reported the high income inequality in the country (Gini coefficient = 0.49) and poorest 20 percent of the country receives only 4.5 percent of the total household income of the country (Department of Census and Statistics, 2012). In the consideration of 3,000 calorie level adopted by the Asia Floor Wage Campaign, living wage for Sri Lankan apparel industry workers would be 34,387 rupees (US dollars 258.5). This number is closed to the mean household income of the country, though it is considered a relatively higher calorie level in the estimation. It will greatly enhance the workers economic and social recognition in the industry and country at large because studies have emphasized the lack

of workers economic and social recognition of this important industry as a constraint in industry sustainability.

Moreover, the acceptance of industry living wage is important, because it facilitates the government to reach the foreign exchange earnings from the industry to US dollar five billion by 2016 from US dollar 3.5 billion in 2010. As the industry is recognized as labour intensive industry, it can be boosted by either expanding the industry workforce, women workers in particular or improving the productivity or efficiency if we assumed no unit price change in the world market. The absorption of female workers under the prevailing wage level is more critical as the industry labor market is at disequilibrium point as evident from the reported vacancies in the industry. Moreover, labor force expansion is important because high value apparels (HS 62), which mostly labor intensive categories, play a major role in Sri Lanka`s apparel export basket due to the existing competitive edge in the international market in the post MFA world (UNDP, 2006).

On the other hand, one of the main claims raised by the manufacturers in the implementation of the living wage is the inevitable increase in cost. Perhaps, it is important to study how firms tackle the problems of competitiveness in the market if workers are to be paid the estimated living wage. In this connection, it first requires a global apparel industry value chain analysis which has not been adequately studied by researchers as yet. It will provide the facts on the feasibility of paying the estimated living wage to the workers at the bottom level of the industry value chain. However, it remains an issue to be addressed in the future. Second, a strategic negotiation with main international buyers is an important step in the implementation of estimated living wage. Practicing so, the apparel manufacturers can disseminate important information about paying a living wage to the workers, who have produced their products, and can cater to the new consumer groups in the main markets in the US and the EU. For example, information about the precarious condition of the workers in terms of debt, malnutrition, health problems, etc., due to the non-payment of a living wage should be disseminated among the

consumers in the major markets via the buyers with new product certification. This will minimize the possible risk to the industry competitiveness in paying living wage. Third, the industry labor organizations in the Asia could create coalitions and form a regional living wage base on purchasing power parity which is a concept emphasized by the globally accepted. However, there are much positive theoretical and empirical evidence about the living wage in terms of labor absorption, productivity and efficiency. Under these circumstances, the acceptance of this assessed living wage at policy making level is important and the respective authorities who attend to work on the sector specific living wage for Sri Lankan apparel ind ustry workers can get the benefit from the findings of this study.

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Appendix 1

Distribution of earnings of the workers from apparel industry: male vs female

	Variable	Mean income (Rs.)	Sta. Dev.	Min.	Max.	% of total wage
Female	Basic wage	9339	1151	8500	17000	58.9
	Overtime	3060	1598	500	10000	19.3
	Target incentives	317	1546	500	1000	2.0
	Service incentives	217	900	500	4000	1.4
	Attendance incentives	1268	467	500	3000	8.0
	Bonus	254	23	0	83	1.6
	ETF/EPF	1401	451	1275	2550	8.8
	Total wage	15857	1587	10500	24500	100.0
Male	Basic wage	9,604	1,165	7,300	16,700	61.2
	Overtime	2,967	1,048	90	8,000	18.9
	Target incentives	283	889	75	3,000	1.8
	Service incentives	235	488	500	2,500	1.5
	Attendance incentives	942	636	800	4,000	6.0
	Bonus	220	300	0	1,925	1.4
	ETF/EPF	1441	496	1095	2505	9.2
	Total wage	15,693	1,183	5,300	22,350	100.0
	t statistics	0.462				

Notes: The t-test was performed based on total wage of the female workers and male workers. 12% and 3% of basic wages contributed by employer to EPF and ETF, respectively.

Source: Field survey on garment workers, September 2012.

Appendix 2

The minimum rate of wages for a month (Effective 01/01/2013)

Year of Employment	Grade I (a) Rs. Cts.	Grade I (b) Rs. Cts.	Grade II Rs. Cts.	Grade III Rs. Cts.	Grade IV Rs. Cts.	Grade V Rs. Cts.
1st Year	10,530	10,140	9,125	9,075	8,970	5700
2nd Year	10,730	10,315	9,275	9,200	9,070	
3rd Year	10,930	10,490	9,425	9,325	9,170	
4th Year	11,130	10,665	9,575	9,450	9,270	
5th Year	11,330	10,840	9,725	9,575	9,370	

Notes:

Add Rs. 1000/= to all grades as per Budgetary Relief Allowance Act No. 36 of 2005. (Act effective 01/01/2006)

Grade 1 (a) - Designers, Tailors, Design Punchers, Diskette Makers. Grade I (b) - Leaders or Section Supervisors. Grade II - Cutters, Cutters (head), Machine Minders, Final Checkers. Grade III - Checkers, and sorters, Ironing Operators (Male), Odd Job Operators (Female), Stamping Operators (Female), Ironing Operators (Female), Sewing Machine Operators, Electric Iron Operators, Issuing Operators (Female), Embroidery Machine / Head Operators. Grade IV - Laying out men, Laying out women, Packers, Cellophane Bag and Cardboard Box - Makers, Unskilled Leaner's and Apprentices.

The period of apprenticeship in relation in any trade leaner or apprentice referred to above shall be deemed to consist of 156 working days.

Other Benefits: 12% of Basic wages contributed by employer to EPF. (8% deducted from Employees) EPF can be withdrawn on reaching 55 years by male workers and on reaching 50 years by females. 3% of Basic wages contributed by Employer to ETF. ETF can be withdrawn once in 5 years. Gratuity payment of half months wages for each year of service at the time of retirement, resignation and even at the time of termination of services of a workmen. The workers who have worked for more than five years in a company where more than 15 employees are working are entitled to gratuity. If less than 15 workers worked in a company, the workman can make an application to the Labour Tribunal asking for gratuity.

Source: Compiled by Leon Joseph, Secretary, National Free Trade Union