Living Wage Report

Tiruppur City

Tamil Nadu, India

Context Provided in the Garment and Textile Sectors

August 2016

By: Sandhya Barge, M. E. Khan, Richard Anker, Martha Anker, Banwari Periwal and Mital Petiwale

Photo courtesy of Fairtrade International

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Under the Aegis of Fairtrade International, Forest Stewardship Council, GoodWeave International, Rainforest Alliance, Social Accountability International, Sustainable Agriculture Network, and UTZ, in partnership with ISEAL Alliance and Richard Anker and Martha Anker

GLOBAL LIVING WAGE COALITION

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PREFACE

In recent years, the concept of 'Living Wage' has gained considerable momentum. Along with the multinational corporates, it has captured the attention of governments, employers, NGOs, and international organizations, among others. The concept of living wage conceives that a worker receives wages with which a decent life can be susatined and does not continue toiling in poverty. This has had a long and notable history. Addressing this and translating it to actual wage levels poses a number of formidable challenges. A new methodology developed by international living wage experts Richard Anker and Martha Anker has been used extensively in recent times across eighteen countries to measure living wage. Fairtrade International and Social Accountability International (SAI) as members of the Global Living Wage Coalition are committed to helping workers earn a living wage and have used this methodology for assessing living wage among garment workers in Tiruppur. This task was assigned to Centre for Operations Research and Training (CORT), India.

We take this opportunity to acknowledge our thanks to Fairtrade's Network of Asian and Pacific Producers and SAI, particularly Rochelle Zaid, Senior Director, Standards and Impacts (SAI) and Stephanie Wilson, Senior Manager, Strategic Programs (SAI), for facilitating us at various stages of study implementation. It would have been a herculean task to implement the study but for the cooperation and assistance received from local team members in Tamil Nadu. We appreciate this support. Our sincere gratitude to garment industry workers and key stakeholders in these industries for giving us the requisite time. Last but not least, we thank the beneficiaries who responded in our data collection.

We also thank Michelle Bhattacharyya, Coordinator, Global Living Wage Coalition.

We wish to put on record the sincere efforts made by CORT team members Mr. Banwari Periwal, Dr. Mital Petiwale and Ms. Premlata Kshatriya, who worked relentlessly under the guidance of Dr. M. E. Khan. We hope the findings from the report will provide helpful insights of the garment workers and facilitate key players to take measures for betterment of their life.

Dr. Sandhya Barge 2018

Director, CORT

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ABBREVIATION

bhk	Bedroom Hall Kitchen
CORT	Centre for Operations Research and Training
DA	Dearness Allowance
ESI	Employee State Insurance
ESIC	Employee State Insurance Corporation
EWS	Economically Weaker Section
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GLV	Green Leafy Vegetables
GLWC	Global Living Wage Coalition
HIG	Higher Income Group
ILO	International Labor Organization
LIG	Lower Income Group
LW	Living wage
MIG	Middle Income Group
NFNH	Non-Food and Non-Housing
NSS	National Sample Survey
OECD	Organization for Economic Co-operation and Development
PF	Provident Fund
RA	Rainforest Alliance
RE	Research Executive

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SAI	Social Accountability International
SAN	Sustainable Agriculture Network
Sq. feet	Square feet
TEA	Tiruppur Exporter's Association
TNHB	Tamil Nadu Housing Board
TNSTC	Tamil Nadu State Transport Corporation
WHO	World Health Organization

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ABSTRACT

The concept of a living wage (LW) is that it should allow the worker and her/his family to live a decent life. This decent life should allow for a low cost nutritious diet, basic healthy housing with essential amenities of water, electricity and sanitation facility, and other essential needs including adequate health care, education of children through secondary school, transport, personal care, entertainment, etc. along with some savings for unforeseen events. This report establishes a living wage for Tiruppur, a city in the state of Tamil Nadu, India. Tiruppur is the biggest center for exports of knitwear in India. Nearly 600,000 people are dependent for their livelihood on 6,250 garment and textile manufacturing factories spread in and around Tiruppur. In 2014, this industry had an annual turnover of US $ 3.6billion. This study, undertaken by Centre for Operations Research and Training (CORT), India was funded by the TransFair e.V. (Fairtrade Germany).

To estimate a living wage for Tiruppur, we used the Anker methodology that uses a combination of primary and secondary data. Primary data collection started with visiting three factories and interacting with key personnel and workers; 52 workers were interviewed on issues like their working pattern, family members, housing, schooling for children, food items consumed, and health. To determine the cost of a nutritious model diet based on WHO recommendations, a market survey was carried out in different locations of Tiruppur from where workers buy their food to find out the cost of common foods eaten by workers. Similarly, information on the rental and utility costs of more than 50 houses was collected and 31 houses were visited. While almost all the houses that were rented by workers did not meet a minimum decency standard, as most were much too small for even a small family (often being 100 square feet in size), we were able to locate and visit 8 basic but decent houses not rented by garment workers that met our minimum decency standard for healthy housing. We also discussed with workers and others the cost of health care from private and public providers, and the cost of schooling. We used available secondary data from the National Sample Survey (NSS), other surveys and the population census for Tamil Nadu to help determine non-food and non-housing expenses and needs, typical family size, typical number of workers per family, and typical wages in Tamil Nadu.

Considering that a typical family in Tiruppur consists of four people (2 adults and 2 children), the living wage for a full-time worker was estimated to be Rs. 13,817 ($207). This allows for a healthy and nutritious diet plan with 2291 calories per family member costing Rs. 7,792 ($117) per month (after taking into consideration free school lunches for children which reduces the cost of meals prepared at home), decent housing with living space of at least around 388 square feet (36 square meters) and basic utilities at a cost of Rs. 4,788 ($72) per month for rent and utilities, and Rs. 5,353 ($80) per month for all other non-food and non-housing needs (such as for health care, children's education through secondary school, clothing, recreation, transportation, personal care, and other household expenses). Further, the estimation of our living wage also includes a small provision for unexpected expenses of Rs. 897 ($13) per month, as well as the amount of

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mandatory deductions that would be taken from pay at our living wage (12% for provident fund and 1.75% for ESI) of Rs. 1,900 ($28) per month.

The prevailing wage for cutters, tailors/operators, ironers, and packers (who are the majority of workers in the garment and textile industry) agreed by TEA (Textile Exporters Association) and trade unions in 2016 was Rs. 9,553, which is more than the government minimum wage (Rs. 7,962) notified in 2016. Our estimated living wage (Rs. 13,817) is around 45 percent more than what workers are currently receiving, thereby indicating a big gap that needs to be addressed. The living wage estimated in this report indicates how much garment workers in Tiruppur would need to earn to be able to afford a decent basic living standard in Tiruppur.

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Living Wage Estimates
Urban Tamil Nadu, India
Tiruppur City

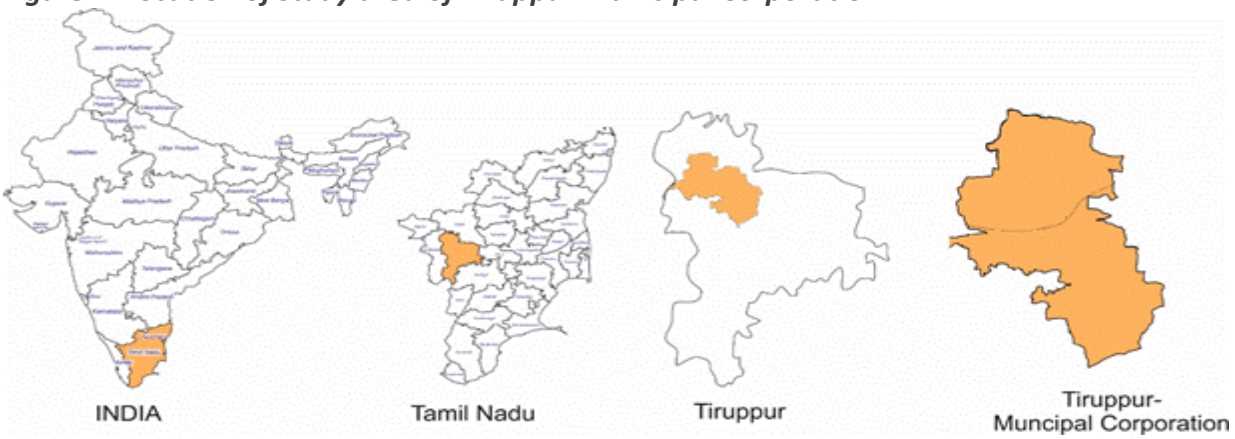
SECTION I

INTRODUCTION

1. BACKGROUND

This report estimates a living wage for Tiruppur Municipal Corporation located in Tiruppur District of Tamil Nadu State in India, which has large concentrations of textile and garment industries. The report is prepared based on secondary data as well as primary data collected through field investigations in Tiruppur city with a focus on workers who are engaged in the textile and garment industry (Figure 1).

Figure 1: Location of study area of Tiruppur Municipal Corporation



Tiruppur is a major textile and knit wear hub that has grown manifold times over recent decades and is a vibrant garment center. Factories are located across the Municipal Corporation of Tiruppur City (Figure 2).

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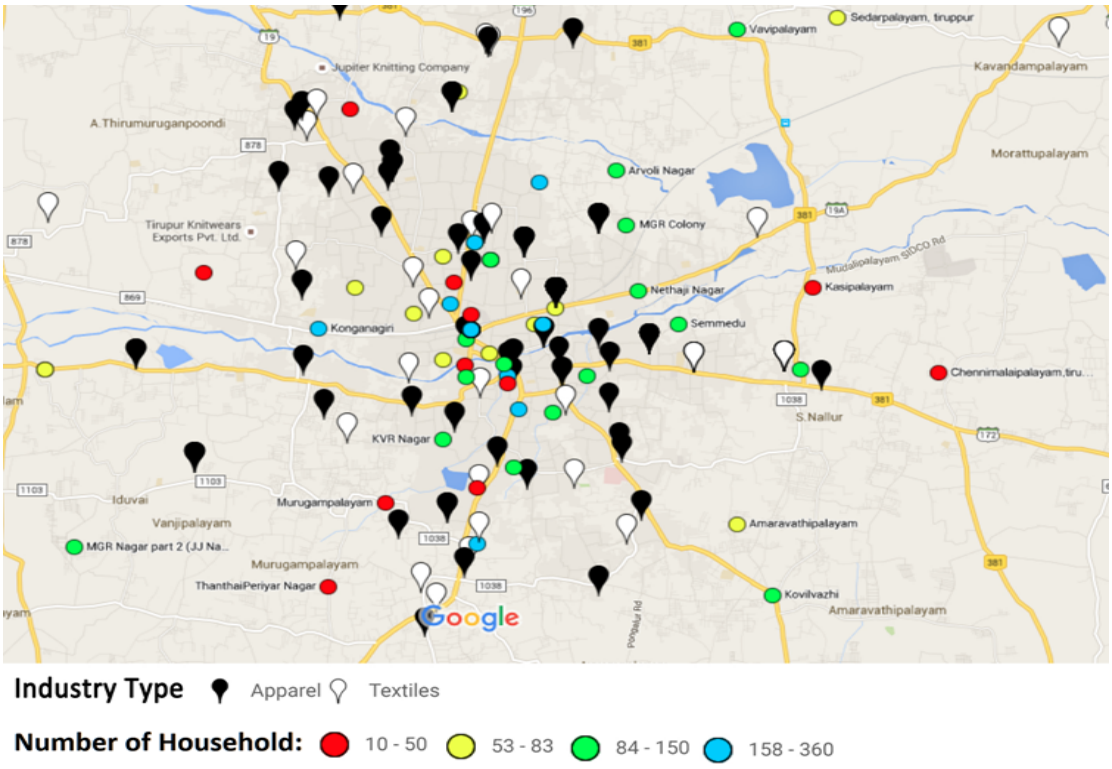
Figure 2: Spread of garment and textile industries in Tiruppur



This study uses a methodology developed by Anker and Anker (2017) that builds and improves on their earlier work on living wages published by ILO (see Anker, 2006a, 2006b, 2011). This study was commissioned by the Global Living Wage Coalition (GLWC) that brings together seven sustainability organizations namely Fairtrade International, Forest Stewardship Council (FSC), GoodWeave International, Rainforest Alliance (RA) joining forces with UTZ, Social Accountability International (SAI), and Sustainable Agriculture Network (SAN), in partnership with ISEAL Alliance and Richard and Martha Anker. The GLWC has a shared mission of promoting continuous improvements in workers' wages, in the farms, factories and supply chains participating in their respective certification systems and beyond - with the long-term goal that workers receive a living wage. Each living wage study and estimate commissioned by the GLWC is made public to further this aim and to increase the opportunity for collaboration toward payment of a Living Wage. Twenty-nine other living wage studies in 18 other countries were recently completed or are now under way for GLWC using the Anker methodology. The present report was commissioned by GLWC, funded by Fairtrade Germany, and facilitated by GLWC members Fairtrade International and SAI. The study was undertaken by Centre for Operations Research and Training (CORT), India, a large research and consultancy organization.

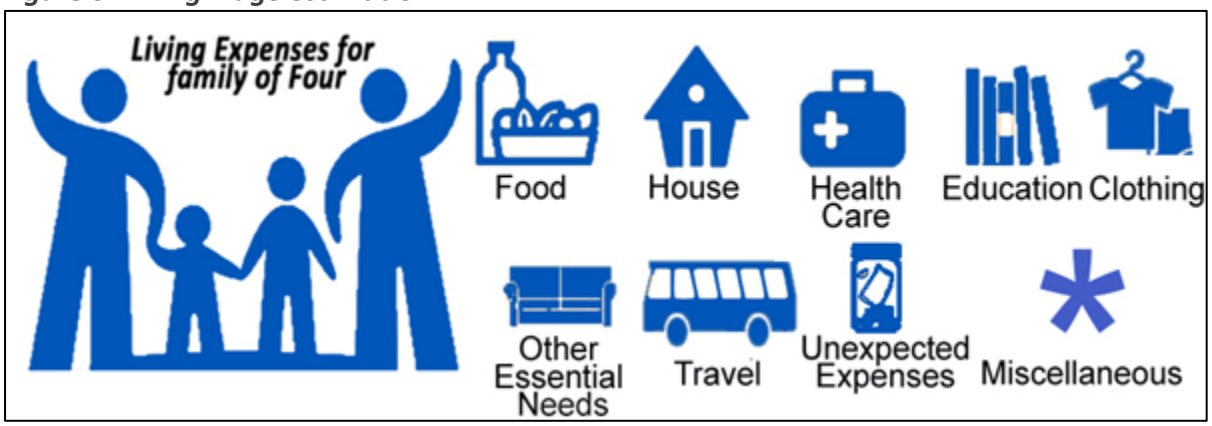
2. LIVING WAGE ESTIMATE

Our estimate of a living wage for a garment worker in Tiruppur City is Rs. 13,811 ($207). Prevailing wages of the workers varies depending on the type of work. The lowest in the ladder being the 'helper' and the highest being 'cutter'. Wages by type of work do not differ very much. For expositional purposes, we use the wages for cutters, tailors/operators, ironers, and packers (who comprise the majority of workers in the garment and textile industry in Tiruppur – which is one of the most important locations for this industry in India - and who have the same minimum wage and negotiated wages). The living wage estimate is around 45% more than the prevailing wages in the garment industry in Tiruppur. This large gap between prevailing wages and our living wages is due to the low wages in the garment industry and not because our living wage being too high or overly generous, as we used conservative assumptions to estimate living costs for a basic but decent living standard.

The rest of this report explains how our living wage was estimated. An attempt has been made to keep a balance between scientific rigor and simplification of the procedure so that readers and stakeholders are able to understand the methodology used and how our living wage was estimated.

Our living wage was estimated by first estimating the cost of a basic life style for a worker and his or her family. This involved adding up the cost of food (for a low cost nutritious diet), housing (for basic healthy housing), and other essential expenses for a family that includes education of children through secondary school, decent health care, transportation, recreation, clothing, other essential needs, and a small margin for emergencies and unforeseen events. The estimated cost of this basic but decent life style was then defrayed over the number of full-time workers per couple expected to provide support based on secondary data for urban Tiruppur (Figure 3).

Figure 3: Living wage estimation



Source: Authors

Considerable effort was put into making our living wage estimate. This was done in light of the importance of the garment and textile industry in Tiruppur and possible uses of this report by

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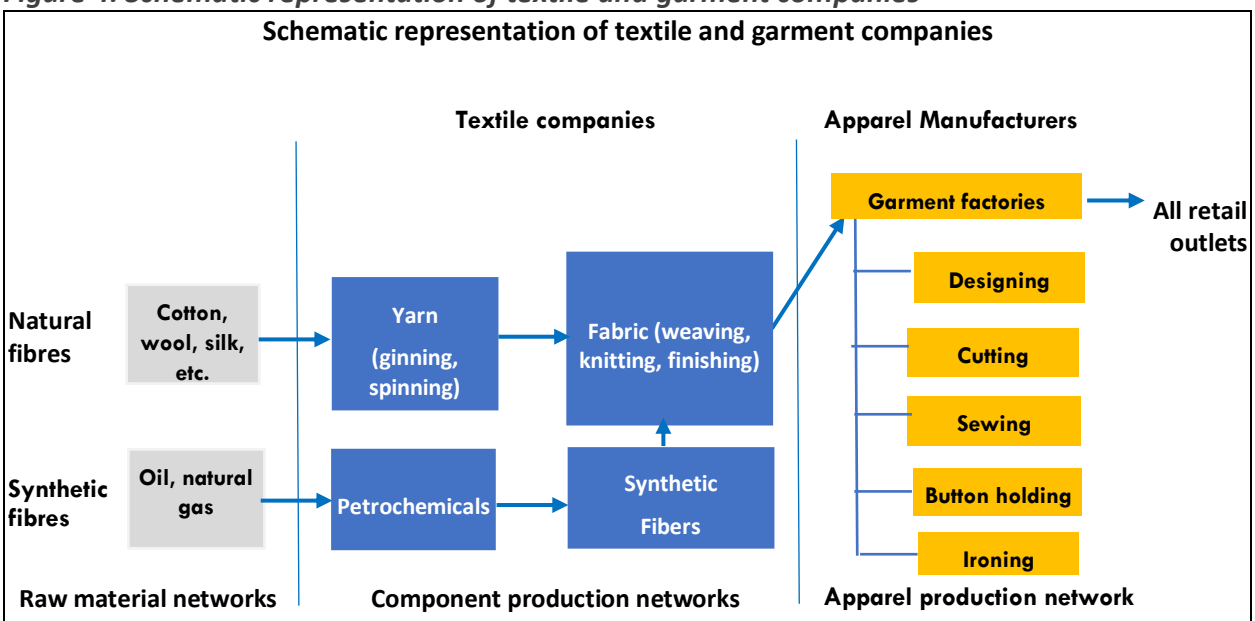
key stakeholders like: employers and employer associations, trade unions, government, and standards setting organizations to help improve wages of the workers and create a pathway to increased wages so that garment and textile workers could live decently. Using the Anker methodology, all essential components of living wage were estimated by collecting a variety of data. This included a local market survey of food prices from places where workers purchase their food; interviewing workers and visiting workers' houses to know about rental costs of decent housing and the cost of monthly utilities; contacting real estate agents to see and assess expected costs of local housing if workers move from their present poor housing conditions to decent housing, considering local and minimal international housing standards given by WHO, UN-HABITAT, and by Government of India urban housing department for low income group segment of population. Similarly, the cost of children's education was assessed both by interviewing workers and visiting schools. Health care expenses were assessed considering prevailing disease patterns, typical health seeking behavior, interviewing Employee State Insurance (ESI) doctors, and carrying out a local market survey of prices in private health clinics, pharmacies and pathology laboratories. Among the secondary data used were the population census (GOI, 2011), NSS report (GOI, 2014), nutrition survey report (NIN, 2011), and various other government publications. Secondary data were extensively used. This included information from Indian Council of Medical Research (ICMR) that helped us to develop a nutritious low cost model diet in order to estimate local food costs; housing statistics from household surveys and censuses that helped us to develop a local healthy housing standard; household expenditure statistics that helped us to estimate non-food and non-housing costs; labor force and household survey statistics that helped us to estimate the number of full-time workers per family; and censuses and household surveys that helped us to determine a reasonable reference family size. Thus, our living wage study used mix methods of quantitative and qualitative approaches and primary and secondary data and triangulated all this information to arrive at a reasonable living wage estimate for Tiruppur.

3. CONTEXT

According to National Skill Development Corporation (NSDC), "India is the second-largest producer and exporter of textiles and clothing in the world. As of 2012, the textile sector contributed to 4 percent of India's GDP and 11 percent of total Indian exports, primarily driven by the availability of raw materials such as natural fiber, mainly cotton, silk and jute. The textile and garment sector in India is characterized by small-scale, non-integrated spinning, weaving, finishing, and apparel making enterprises. This structure arose due to policies on tax, labor and other regulations that favored small-scale, labor-intensive enterprises, while discriminating against large-scale, capital-intensive operations. Small-scale 'unorganized' players dominate the sector which does not have many stringent regulations."(GOI, NSDC – Volume 22- Human Resource and Skill Requirement in the Textile and Clothing Sector (2013-17, 2017-22), http://www.nsdcindia.org/sites/default/files/files/Textile-and-Clothing.pdf). A schematic representation of activities in textile and garment companies is given in Figure 4.

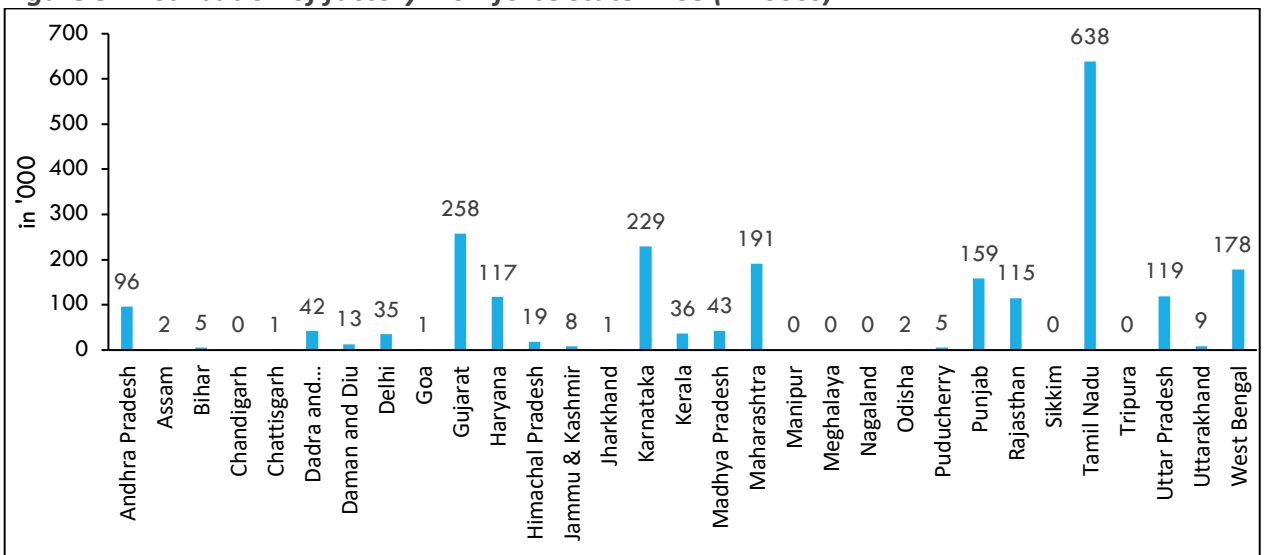
Figure 4: Schematic representation of textile and garment companies



Source: www.tamilnadugim.com.

The NSDC report further states that the "factories located in Tamil Nadu are among the largest employers in the textiles and clothing sector in India. Tamil Nadu textile and garment sector employs 27 percent of the total workforce of the textile subsector of India followed by Gujarat (11 percent), Karnataka (10 percent), Maharashtra (8 percent), West Bengal (8 percent), and Punjab (7 percent)" (Figure 5).

Figure 5: Distribution of factory workforce state-wise (in '000s)



Source: http://www.nsdcindia.org/sites/default/files/files/Textile-and-Clothing.pdf

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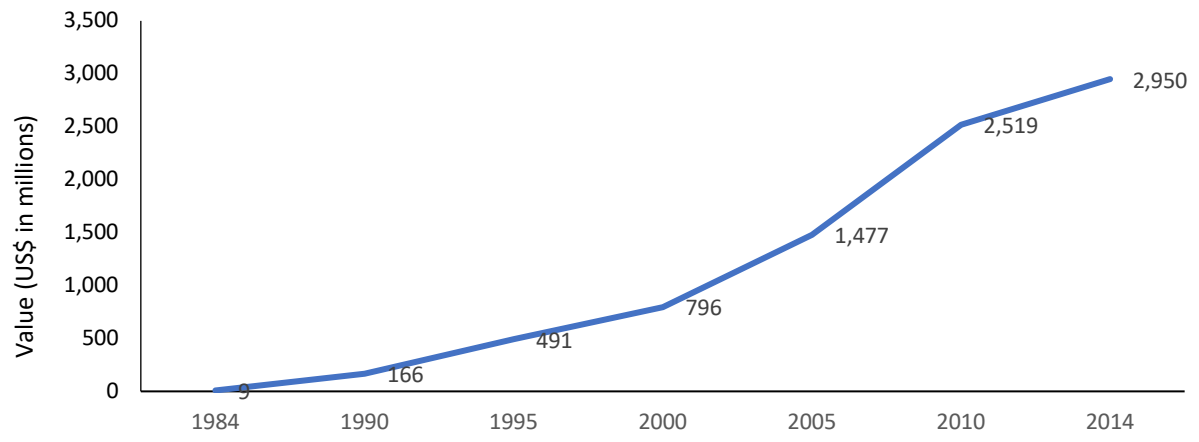
Tiruppur is located on the banks of the Noyyal River, which divides the city. It is the administrative headquarters of Tiruppur District. According to the 2011 census, Tiruppur had a population of 444,352 with a sex-ratio of 955 females for every 1,000 males, higher than the national average sex ratio of 943. Scheduled Caste and Scheduled Tribe populations accounted for 14% and 0.4% respectively of the urban Tamil Nadu population. Tiruppur had a total of 124,617 households and 207,358 workers in 2011 (Tiruppur Export Association, 2014).

3.1 Overview of Tiruppur garment and textile industry

Tiruppur is the biggest center for exports of knitwear in India and is considered an important hosiery hub and the knitwear capital of India. Knitted products like briefs, vests, pajamas, sportswear, T shirts, children's garments, etc. are mainly exported. Approximately 55% to 60% of Tiruppur's exports are targeted at the European market and approximately 30% at the US market. As of 2014, Tiruppur had an annual turnover of 220 billion Rupees (US$ 3.6 billion) (www.tiruppur.nic.in/textile.html). According to a Tiruppur Exporters' Association (TEA) report, nearly 600,000 people of Tiruppur District are dependent for their livelihood on garment manufacturing and related industries.

According to a case study by the Indian Council for Research on International Economic Relations (ICRIER) and TEA handbook, Tiruppur's direct exports started with Italy. Mr. Verona, a garment importer from Italy came to Tiruppur in 1978 to buy white T-shirts. He realized the potential and returned to Tiruppur to purchase more T-shirts the following year. Others soon followed suit. In 1981, European retail chain C&A came. By 1984 garment exports from Tiruppur were worth 9 million US$. Exports have continued to expand since the mid-1980s and reached 2,950 million US$ in 2014 (Figure 6).

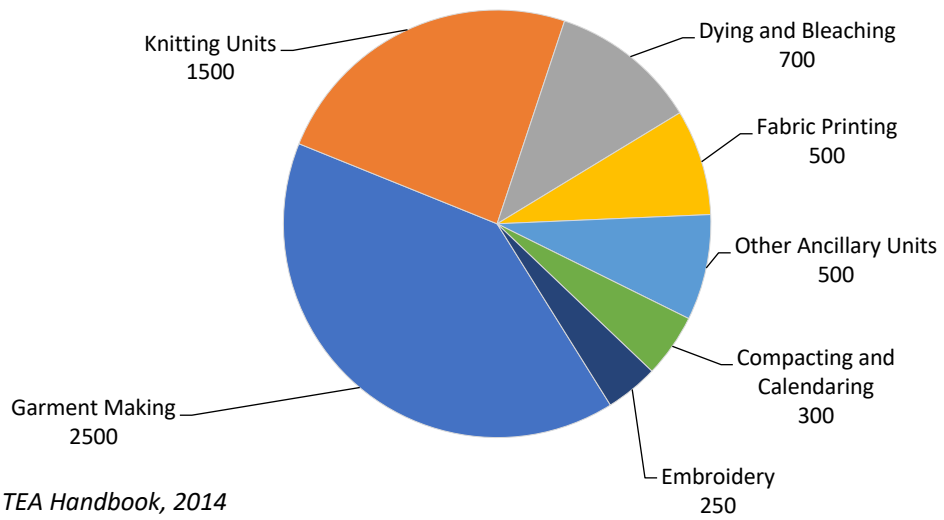
Figure 6: Exports since 1984 (in US$)



Source: TEA – handbook 2014

Today, Tiruppur is the largest exporter of cotton knitwear from India, and contributes roughly 90% of the total exported cotton knitwear. According to the TEA handbook, Tiruppur has more than 6,250 garment manufacturing and job work units in the district (Figure 7).

Figure 7: Number of textile and garment factories in Tiruppur District



Source: TEA Handbook, 2014

4. CONCEPT AND DEFINITION

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The idea of a living wage is that workers and their family should not have to live in poverty. But a living wage should do more than simply keep workers and their families out of poverty. It should also allow them to participate in social and cultural life. In other words, wages should be sufficient to ensure that workers and their families are able to afford a basic life style considered decent by society at its current level of development. Workers should receive a living wage in normal work hours without having to work overtime. The following definition of a living wage was accepted by the Global Living Wage Coalition (GLWC) and its members.

> ***"Remuneration received for a standard work week by a worker in a particular [time and] place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, healthcare, transport, clothing and other essential needs including provision for unexpected events."***

This definition is consistent with findings in the comprehensive review of living wages in Anker (2011).

The idea of a living wage is not new (see Anker 2011 for following and other quotes). Nor is it a radical idea. Adam Smith (1776) wrote, "No society can surely be flourishing and happy, of which far greater part of the members are poor and miserable. It is equity besides that they who feed, clothe and lodge the whole body of the people should have such a share of the produce of their own labor as to be themselves well fed, clothed and lodged." Pope Leo XIII (1891) in a Papal encyclical Rerum Novarum stated, "Remuneration must be enough to support the wage earner in reasonable and frugal comfort. If through necessity, or fear of worse evil, the workman accepts harder conditions because an employer or contractor will give no better, he is the victim of fraud and injustice." American President Franklin D. Roosevelt (1933) wrote that "Liberty requires opportunity to make a living – a living decent according to the standard of the time, a living which gives men not only enough to live on but something to live for." International Labor Organization Constitution (1919) states that "Peace and harmony in the world requires provision of an adequate living wage", and United Nations' Universal Declaration of Human Rights (1948) states that "Everyone who works has the right to just and favorable remuneration ensuring for himself and his family an existence worthy of human dignity." See Anker (2011) for descriptions of living wage by other prominent individuals, international organizations, NGOs, companies, and governments.

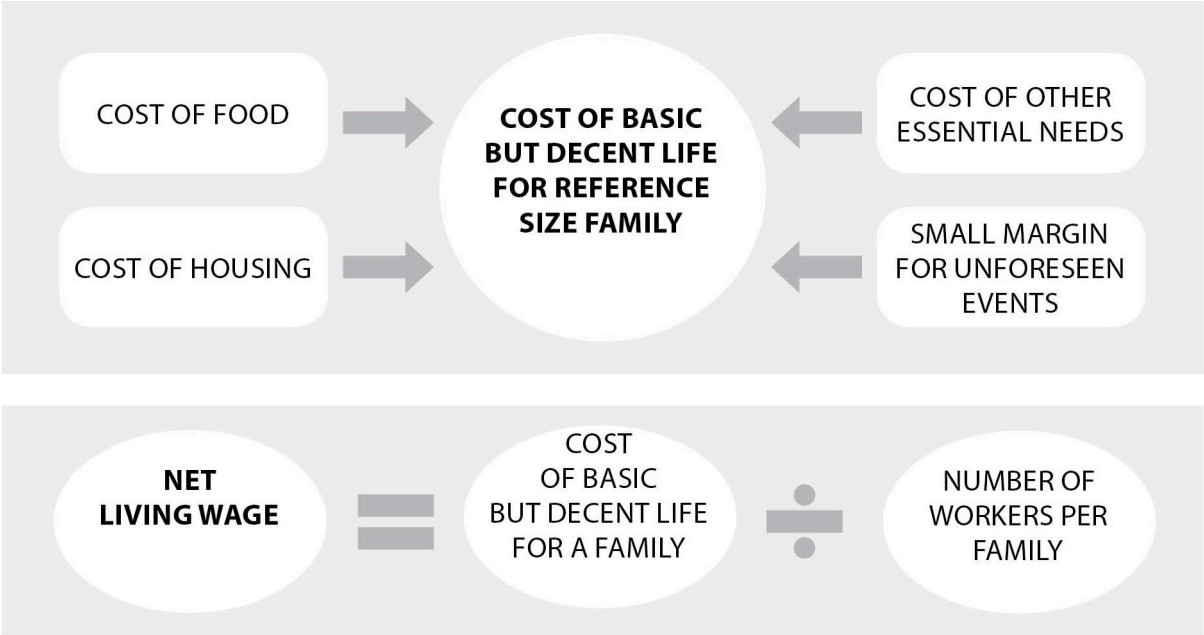
5. HOW OUR LIVING WAGE IS ESTIMATED

The following flow chart indicates how our living wage was estimated. Conceptually the first step was to identify the key factors that contribute to a decent living as defined globally while allowing for adjustments based on the local conditions. The Anker methodology defines these basic elements of living as indicated in Figure 8 based on agreed international standards. Required living costs were estimated by summing up separate estimates of cost for a low cost nutritious

diet, basic decent healthy housing, education of children through secondary school, decent health care, transportation, and all other necessary expenses such as for clothing, furniture, recreation, personal care, etc. A small margin above this total cost of a basic but decent life style was then added to help provide for unforeseen events such as illnesses and accidents or special occasions like marriage or travelling to other places to attend some family ceremony that demand considerable expenditure to help ensure that common unplanned events do not easily throw workers into debt and possibly perpetual poverty. This new total cost of a basic but decent quality life, that up to now was mostly expressed in per capita terms, was then scaled up to arrive at cost for a typical family size in the area and defrayed over a typical number of full-time equivalent workers per family in the area.

A significant number of workers in Tiruppur are migrants from rural areas of Tamil Nadu or other parts of India. These migrant workers often come to Tiruppur without their families (leaving them behind in their home areas). Although some might feel that it is appropriate to consider living costs back in the home area, since migrants often send money home to help support family, we feel that only Tiruppur living costs should be considered, because for decency we believe that workers should be able to afford to live with their family in the locality in which they work. Long periods of separation from family because of an inability to afford a minimal decent standard of living for the entire family is clearly detrimental to the health and well-being of workers in the long run. Therefore, we do not estimate a separate living wage for migrant workers, and our living wage estimate for Tiruppur assumes that workers who earn a living wage are able to afford to live with their families in Tiruppur.

Figure 8: Components of a basic but decent life for a family, going from cost of a basic but decent life to a net living wage, and moving from a net living wage to a gross living wage



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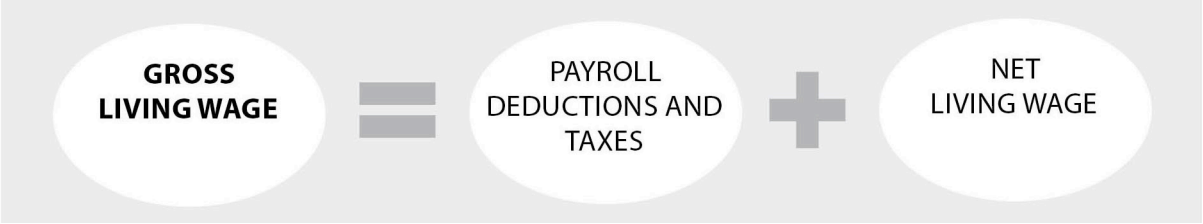


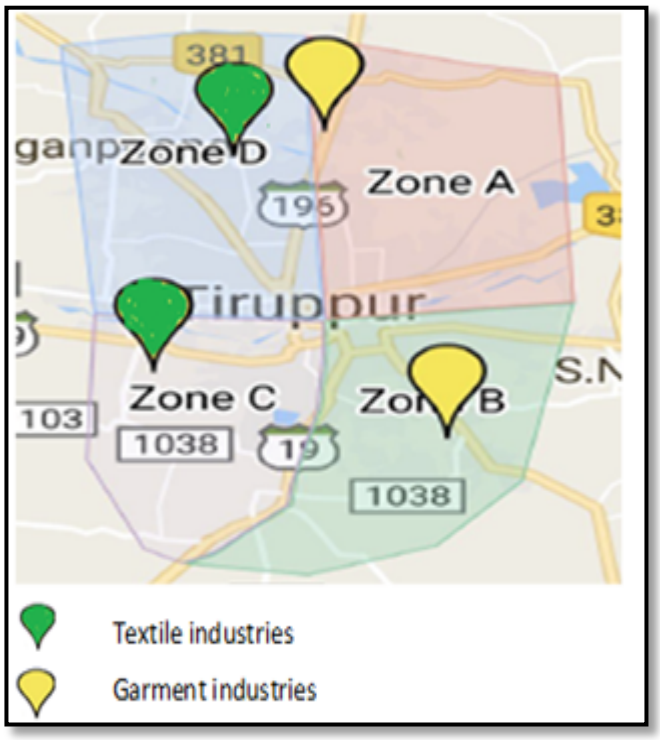
Source: Anker & Anker (2017).

5.1 Data Collection Methodology

To ensure that the primary data we collected on local food prices, local housing costs, health care costs, education costs, and other costs are reasonably representative of costs in Tiruppur city, we collected information on these in 4 locations. For this purpose, we divided Tiruppur city into 4 zones –Zone A, Zone B, Zone C, and Zone D. Zones A and B have many garment factories, and zones C and D have many textile factories. With the help of SAI (Social Accountability International) SA8000 certified textile and garment companies with more than 100 workers, we visited one factory in each of our four zones to talk to workers (although the management of the factory located in Zone C did not allow us entrance).

A combination of approaches was used to collect the required primary data during July – August 2016. Briefly the following steps were taken.

Figure 9: Four zones of Tiruppur and industries for Selection



i. Visits were made to three garment and textile factories. This included discussions with management including officials in-charge of human resources and finance, as well as a walk around their floors to understand the stages of activities.
ii. Discussion was held with a senior official of the Tiruppur Export Association (TEA).
iii. In-depth interviews were held with around 52 garment/textile workers in Tiruppur City. A semi-structure tool was

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used to interview the workers. To interview the workers, two local research assistants were hired and trained. From each factory beside the managing director and/or director of human resources, 10 or more workers from various sections were selected and interviewed in depth. When the interviews of the workers were conducted, one CORT research executive (RE) was present and workers' answers were translated by the research assistant. If further questioning was required, the CORT research executive helped guide the research assistant to ask the question and note down the answer. The interviews of the workers helped in understanding their food habits, types of food product they usually take, frequency of food taken, housing information including rent and cost of utilities, and information on education and health care. This information also helped in planning the local food and housing market surveys and the analysis of available secondary data such as survey and census data.

iv. A market survey was done to determine local prices of food commodities. Five markets where factory workers typically buy their vegetables, groceries, meats and other daily requirements were visited in each of the 4 selected zones of Tiruppur. Thus, all together 20 markets were visited and from each market several shops were covered to note down prices of the common consumer products/groceries/vegetables and fruits that the workers eat. This data was used to estimate typical prices of different food items.

v. Visits were made to 22 residences of workers falling in different zones of Tiruppur to observe their housing structure and living conditions, including measurement of room size, number of people living there, toilet, kitchen facilities, amenities available, material used for constructing the building/structure, and the condition of the building. Observations were also made of the locations where they lived, hygienic condition and accessibility to essential community amenities like roads, electricity and portable water facilities.

vi. The cost of rent and details of decent housing not occupied by garment workers was determined in order to find what housing costs for decent housing would be if garment workers earned a living wage and could afford decent housing. Presently most garment workers live within walking distance from their workplace (often living in nearby slums), and therefore finding decent housing was difficult. For this reason we also visited more distant localities where decent residential houses are available at a more reasonable rent. As Tiruppur is a small city, the farthest distance is within 5-6 km radius. Data on size of such decent housing facilities, the cost of rent, and electricity and water charges were collected from residents living in these locations. To determine the size of these homes, we measured all of the living areas including the bedroom, living room, kitchen, veranda, latrine, etc.

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vii. Discussions with health care providers on health care issues and costs was done by visiting five private health facilities, three pathology labs, five medical shops, one ESI dispensary and one ESI hospital.

To complement the above findings and information, an extensive review of available literature and statistics related to household expenditures, the demographic situation, labor force and labor market behavior, housing conditions, and the garment and textile industry of Tiruppur was done and used in this report.

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SECTION II

COST OF A BASIC BUT DECENT LIFE FOR A WORKER AND THEIR FAMILY

6. FOOD COSTS

Food cost for a living wage for Tiruppur area was estimated using local food prices and a low cost nutritious model diet for Tiruppur for a typical family of 4 persons (2 adults and 2 children).

6.1 General principles of model diet

The following general principles were used to establish the model diet we used to estimate food costs for our living wage for the Tiruppur area. Our model diet needed to be:

i. Nutritious (i.e. have sufficient calories as well as acceptable quantities of proteins, fats, carbohydrates, and fruits and vegetables) to help ensure that workers and their families have enough to eat and can be healthy.
ii. Relatively low in cost for a nutritious diet. This approach mimics how cost-conscious workers shop for food while maintaining nutritional standards.
iii. Consistent with Tiruppur's development level. For this reason, our model diet includes relatively low (but nutritionally acceptable) percentages of calories from proteins since proteins are expensive per calorie. At the same time, the percent of calories from proteins meets WHO/FAO minimum requirements.
iv. Consistent with local food preferences, local food availability and local food prices. This at times means that the choice of specific food items included in the model diet to represent each major food group are not always the least expensive food items.

6.2 Model diet

Our model diet has 2236 calories. This was determined using WHO recommended equations and average height of adults in Tiruppur, size and composition of the reference family (2 adults and 2 children), and an assumption that all adults and children have moderate physical activity levels. We started the development of our model diet with 2236 calories using food consumption by major food groups according to the NSS-558 report.

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In the next step, we adjusted these quantities so that our model diet met WHO recommendations for the number of calories, macronutrients (proteins, fats, and carbohydrates), and quantities of fruits and vegetables, to ensure sufficient micronutrients and minerals.[1]

Lastly, we adjusted this nutritious diet so that it was low in cost for a nutritious model diet by taking into consideration relative food prices and Tamil Nadu's level of development. Percentages of calories in our model diet were 11.2% from proteins, 19.9% from fats, and 68.8% from carbohydrates. The 325 edible grams of pulses, fruits and vegetables included in our model diet helps to provide a variety of micronutrients and minerals. Finally, we checked that the distribution of food costs in our model diet was not very different from the distribution of food expenditures according to the NSS-558 report. As expected, percentage of food expenditures for dairy products and eggs were higher in our model diet compared to those for actual food consumption, while expenditures for the rest of the food groups were more or less similar in our model diet and in actual expenditures.

Our model diet, shown in table 1, includes:

- 321grams of rice per day, which is a lot of rice, but rice is the core food item for people in Tiruppur. Rice is consumed at all meal times including breakfast in the form of Idili and Dosa. Rice provides 52% of all calories in our model diet.

- Enough chicken and fish for 2 non-vegetarian meals per week. Nutritionally this is essential as it provides high quality proteins because adults in Tiruppur do not consume much dairy products. Consumption of chicken and fish is also consistent with local food habits. Note that it is typical for workers in Tiruppur to have meat meals on weekends with sizable portions of meat rather than having meat meals with smaller portions more frequently.

- One egg or egg omelet every day.

- 56 grams of pulses per day (which is almost the same as the 55 grams consumed on average daily according to NSS-558 data). Pulses are traditionally prepared in a liquid form and generally consumed often thrice daily in breakfast, lunch and dinner. Tur and Urad dal are the most commonly used pulses among workers.

- 1 cup of milk (240 ml) per day for children. Despite its cost, milk is needed for its nutrients required for a growing child. Also, 1/2 cup of milk is included for adults in part to add to their two (180ml) cups of tea per day.

[1]ICMR uses different equations than WHO to estimate calorie needs. Differences are small and we use WHO equations in this report to enhance international comparability.

- 22 edible grams of potatoes per day. Potato is commonly included with vegetables in curries because of its lower cost.
- 325 grams of vegetables, fruits and pulses per day. Three common and inexpensive vegetables are included in addition to onion. Onion is included in the model diet, even though it is not among the cheapest vegetables, because onion is used in all cooked meals and indeed is considered as a spice by Tamil Nadu people and in national food expenditure statistics.
- 20 grams of coconut per day is included, because it is common to use coconut in Tamil Nadu cooking.
- 25 grams of sugar per day (approximately 7 teaspoons).
- 26 grams of cooking oil per day (approximately 2 tablespoons).
- 2 cups of tea for adults as there is moderate consumption of tea in Tiruppur.
- 4% is added to food cost for spices, salt, condiments and sauces. The percent for this is high for the world but is consistent with how food is prepared in Tamil Nadu, as 6% of actual food expenditure in urban Tamil Nadu is spent for this (including onion that is classified in the statistics as a spice) according to the NSS-558 urban household expenditure survey data.

Table 1. Model diet

Model diet and food cost per person per day using food prices observed in markets of Tiruppur city, July-August 2016				
Food items [c]	**Grams edible [a, b, g]** (1)	**Cost per kg for Tiruppur [e]** (2)	**Cost per person per day [f]** (3) = (1) x (2)	**Comments (Diet is for average person in family of 4. Portions for adults are bigger than for children) [h]**
Rice	321	35.15	11.28	Rice provides 52% of all calories. Rice is the main part of the Tiruppur diet and is consumed in one form or the other as the main dish in all meals. *Ponni* and *Rajbhogan,* less expensive and acceptable varieties of rice are used. Cost per kilo of rice takes into consideration that a sizable proportion of the rice needed in the model diet is obtained from the Public Distribution System (PBS) for free.
Wheat (atta)	40	22.7	0.91	Consumed around once a week. Price of flour used. Cost per kilo of atta takes into consideration that a sizable proportion of the atta needed in the model

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				diet is obtained from the Public Distribution System (PBS) at a low cost.
Potato	22	33	0.97	Least expensive root and tuber. Regularly used in curries and as fillings for *Dosa.*
Tur dal	28	145	4.06	Not the least expensive pulse but included as it is strongly preferred and eaten even by the poor.
Urad dal	28	163	4.56	Not the least expensive pulse but included as it is strongly preferred and eaten even by the poor and used in the local preparation of *Idili/ Dosa*.
Milk	180	46	8.28	Fresh milk used. One cup (240ml) per day for children. 1/2 cup per day for adults in part to add to tea.
Egg	44	89	4.45	1 egg per day. Egg is less expensive per protein than chicken, fish, or milk.
Fish	20	150	5.00	Average price of 2 common inexpensive fish *(Katla* and *Neemahi*) is used. One fish of around 900 grams, as purchased, for family per week.
Chicken	15	126	2.78	1 time per week. Broiler chicken, the least expensive meat, is used.
Vegetable 1 (least expensive GLV)	54	44	3.31	Spinach is the least expensive and most commonly used GLV.
Vegetable 2 (2nd least expensive non-GLV)	54	27	1.80	Eggplant is least expensive and most commonly used non-GLV.
Vegetable 3 (least expensive non-GLV)	54	29	1.72	Tomato is another less expensive and commonly used non-GLV.
Onion (vegetable cum spice in Tiruppur)	54	21	1.26	Onion, a spice cum vegetable, is an essential part of food preparation in Tiruppur.
Coconut	20	20	0.77	Commonly used in diet daily.
Fruits (banana)	54	32	2.70	Banana is the least expensive fruit available year around.
Cooking oil	26	95	2.47	Groundnut oil sold in packets is commonly used and less expensive. Approximately 2 tablespoons per day.
Tea	2	140	0.28	Packet tea is used. 2 cups of tea per day for adults.
Sugar	25	41.8	1.05	Roughly 7 teaspoons per day. Loose sugar is used (as less expensive than packaged sugar).
Total (of above) [i]			57.65 ($0.86)	
Total (including miscellaneous costs)[d,i]			**68.03 ($1.02)**	
Total (reduced by value of free school lunch) [k]			**64.04 ($0.96)**	

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Notes: pd indicates per day. pw indicates per week. GLV indicates green leafy in vegetable. [a] Edible (consumed) quantity differs from purchased quantity for foods with inedible parts such as fruits and vegetables with inedible skin or stem; chicken with bone; fish with head, tail and scales; and egg with shell. Percentage edible is drawn from USDA-NAL database. [b] Number of calories, proteins and fats are estimated using USDA NAL databases for nutritional values per 100 grams for each food item. [c] Specific food items used to cost our model diet are foods that are lower in cost for each major food group except for pulses. [d] Additional miscellaneous food costs are 18%. This consists of: (i) 4% for salt, spices, sauces and condiments not listed in our model diet (with soft drinks, cakes and sweets excluded); this % is similar to the 6% (including onion) of urban household expenditure according to NSS-558 report; (ii) plus 11% to allow for some variety (e.g. more meat sometimes; more expensive varieties of rice, vegetables and fruits sometimes; holiday meals sometimes; etc.); (iii) plus 3% for minimal waste and spoilage. [e] Cost per kilo is based on prices observed in local food markets where workers shop. [f] Cost for each food item was calculated by multiplying quantity purchased by cost per kg. [g] In addition to having a sufficient number of calories (2291), our model diet meets WHO recommendations for proteins (10-15% of all calories), fats (15-30% of all calories) and carbohydrates (less than 75% of all calories). 11.2% of calories in the model diet are from proteins, 19.9% are from fats and oils, and 68.8% are from carbohydrates. [h] Calories required by adult males, adult females and children were calculated using Schofield equations recommended by WHO/FAO. Then, the average number of calories required per person for our reference family of 4 was calculated which turned out to be 2236. i Exchange rate used to convert Rs. to USD was Rs. 66.88 as found when food price data were collected. [k] Free school lunch means that fewer meals need to be prepared at home. This reduces the cost of home prepared meals.

Table 1 indicates food cost per person per day for our model diet. Eighteen percent is added to this cost for additional miscellaneous food costs. These costs cover salt, spices and condiments (4 percent), wasted and/or spoiled food (3 percent), and ensure a minimum variety of food items (11 percent) (see Anker and Anker, 2017). It should be noted that food costs per day for our model diet took into consideration that a substantial proportion of the rice and wheat consumed in Tamil Nadu are bought in the Public Distribution System (PDS) at a very low cost.

Our initial estimate of food costs for a family of four people came to Rs. 68.03 ($1.02) per person per day as shown in table 1. However, children attending public school or government-aided school receive a free meal (for 220 school days a year). These free meals provided by schools reduce the number of meals that need to be prepared at home and therefore food costs for families. Assuming that lunch accounts for 40 percent of daily food costs and that children eat less than adults as according to WHO equations, we used the following formula, as recommended by Anker & Anker (2017), and an Excel program developed by Anker and Anker (2017) to calculate the cost of meals not needing to be prepared at home by age of the child:

> *Value per day of home cooked meals for family not needing to be prepared because of free school lunches = Number of children in family × value of a lunch for children not prepared at home × (220 school days per year/365 days per year) × 10 years that children have free school lunch) / 18 years of childhood*

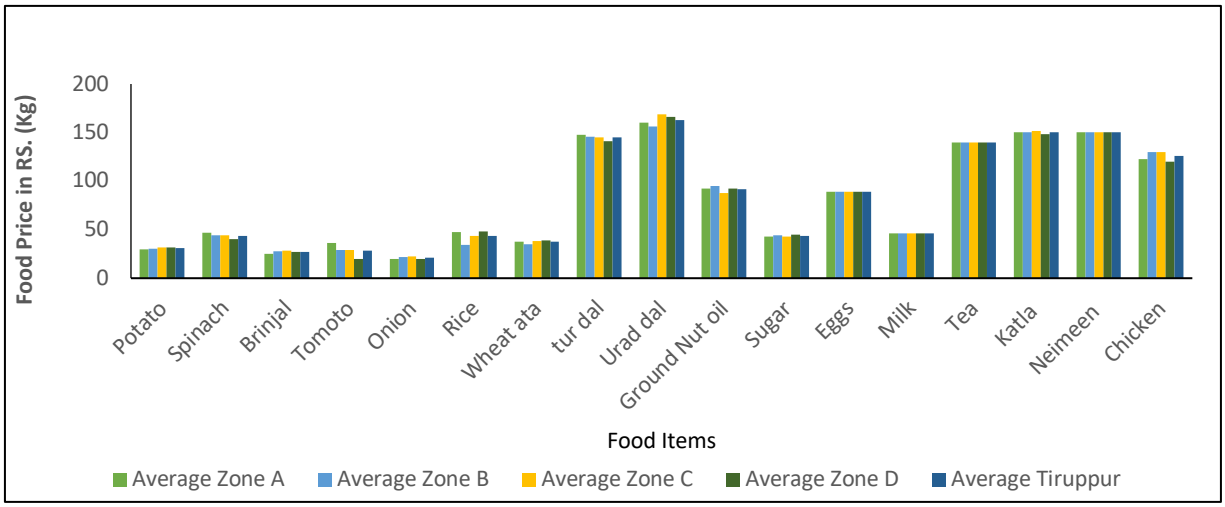
In Tiruppur, free meals are provided in school through standard X. In other words, for children aged 5 to 14 years. Our estimate is that the replacement value of a free lunch to families is Rs. 24.04 per meal on average per child. By applying the above formula (i.e. amount saved by the family because children are not eating lunch at home on school days), this comes to Rs. 16.09 per

day for two children on average (when defrayed over all 18 years of childhood, and when the proportion of school days during the year are considered). This means that the avoided cost per person for the family of 4 is on average Rs. 4.02 per day (i.e. Rs. 16.09 divided by 4 persons in the family). This amount is subtracted from food costs per person per day indicated by our model diet in Table 1. After this is done, food cost per person per day comes to Rs. 64.04 ($0.96). The final step is to calculate monthly food costs for a family of four, which works out to be Rs. 7,792 (Rs. 64.04 per person per day × 4 persons in family × 30.42 days per month).

6.3 Food prices

To estimate the cost of our model diet, as discussed below, the research team collected food prices from markets where workers typically shop. Unlike large metropolitan cities, there are not many demarcated markets in Tiruppur. There is only one big wholesale market for vegetables and fruits near the bus station. The other main market is the smaller vegetable and fruit market, which is lined with groceries shops on the road side. These are the only two markets available at a prime location in the city. On the fringes of the city in some areas, there are weekly markets where sellers/vendors from nearby come to sell their produce and these are sporadic markets according to the local community. Apart from this, there are combinations of shops along the road side which sell groceries and vegetables as well as eggs and dried fish. By collecting food prices from four different zones in Tiruppur, we were able to get a fairly good idea about variations of food prices within Tiruppur. As the price variation was marginal between the four zones, we used the average price of each food item using prices from the four zones to calculate the cost of our model diet. Figure 10 shows prices of food items used in our model diet in the four zones. Based on this, an average price for each food for Tiruppur was calculated.

Figure 10: Distribution of food price across study areas



Source: Authors

To keep the living wage model diet at low cost, less costly food items were included taking care to ensure that the model diet provides the required balanced nutrition to the family. However, in certain cases when local food preferences were strong, a preferred food variety was taken in

place of a lower cost variety. For example, among different types of lentils, local *Tur dal* and *Urad dal* is used by a majority of even poor workers in Tiruppur. Similarly, rice is a very important part of Tiruppur diets. Lower cost and most commonly used rice variety was selected. In this way while food costs were kept to a minimum, local food habits were not neglected and cost of the model diet was estimated by using the prices that workers actually pay for different foods. It is also important to note that we took into consideration the fact that according to NSS report 545 that 67% of households in Tamil Nadu use Public Distribution System (PDS) rice and this constitutes 30% of rice consumed and that 51% of households in Tamil Nadu purchase wheat from the Public Distribution System (PDS). These PDS foods are available either for free (rice) or at a low cost per kilo (wheat). This reduced the average price per kilo for rice and wheat for families (compared to market price per kilo for these) used to calculate the cost of our model diet.

These data indicate that for some food items like egg, milk, tea and fish, the cost was almost the same across the four zones, but variation was observed in cases of vegetables, rice, dal, and chicken. Field observation revealed that prices of these foods tended to be slightly higher when shops were located in a residential area away from the main market.

Image Set 1: Mid-Day Meal in School

Type of Food served in Mid-Day Meal

School children having lunch

Keeping in mind that the availability and costs of some food items varies by seasons, prices for key food items in our model diet were reviewed for possible seasonal variation in prices of common cereals, pulses, vegetables and chicken for the last five years. It was observed that there is not much variation across the months except to some extent due to inflation over the year (www.fcainfoweb.nic.in). Therefore, we feel that the data we collected in July – August can be considered as reasonably representative of food prices throughout the year.

Image Set 2: Market Pictures of Tiruppur

Grocery shop

Vegetable shop

Grocery shop

Roadside vegetable vendor

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Vegetable shop

Fish shop

7. HOUSING

7.1. Local standard for basic acceptable housing

Housing is one of the three basic needs of humanity (food, housing, and clothing). In fulfilling housing needs, the state's Tamil Nadu Housing Board (TNHB) plays a vital role in striving to meet the ideal objective of providing a house to everyone. TNHB has a policy to ensure quality materials and the latest modern techniques in construction and to provide shelter to people under Economically Weaker Section (EWS), Lower Income Group (LIG), Middle Income Group (MIG), and Higher Income Group (HIG) at costs affordable by people of these groups.

Textile and garment workers prefer to live close to their area of work so that they can walk to their workplace and avoid use of transport. To estimate the cost of decent healthy housing in Tiruppur, we set a basic local healthy housing standard that meets minimum requirements for healthy housing that protects inhabitants against the elements as well as is consistent with current local conditions and norms. Our local housing standard has the following characteristics. This standard is consistent with current housing conditions and Government recommendations for floor space (see Table 2 and Figure 11).

- Walls and floor are made of brick or cement
- Roof is either made up of concrete or has red tiles
- Piped water supply in the house or in close proximity
- Electricity
- House is well ventilated

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- Separate kitchen area in the house and not shared
- Toilet facility (flush toilet or pit toilet with slab) available within house or in close proximity of house
- House has a "carpeted" floor size of minimum of 388 square feet (36 square meters) of living space which is in line with living space standards of the Tamil Nadu Housing Board for LIG households which is the income group that workers earning a living wage would fall in (Table 2).

Table 2: Floor Size Recommendations by Income Group

Recommendations on minimum floor size for different income groups		
S.no	**Income group [a]**	**Size**
GoI, Ministry of Housing and Urban Poverty Alleviation (MHUPA) (2011)		
1	Economically Weaker Sections (EWS)	Minimum 300 sq feet super built up area [b] Minimum 269 sq feet carpet area
2	Low Income Groups (LIG)	Minimum 500 sq feet super built up area [b] Maximum 517 sq feet carpet area
KPMG (2011)		
1	Economically Weaker Sections (EWS)	Up to 300 sq feet
2	Low Income Groups (LIG)	300-600 sq feet
Jones Lang Laselle (2012)		
1	Economically Weaker Sections (EWS)	Minimum 250 sq feet carpet area
2	Low Income Groups (LIG)	300-600 sq feet carpet area

Notes: [a]Definitions of annual household income levels for EWS and LIG in 2011 were Rs. 1,000,000, and Rs. 1,00,001 to Rs. 2,000,000 respectively for Mhupa (2011); and less than Rs. 1,500,000 and Rs. 1,500,000 to Rs. 3,000,000 respectively for KPMG (2011). These ranges would be higher in 2016 because of inflation. [b] Super built up area is typically around 25% greater than carpeted area.

Key features of housing conditions in urban Tiruppur (Figure11) indicate that 47% of urban houses are owned houses. However, 52 % of the houses have only a single room and 27% have two rooms. 85% of houses are permanent[2] in nature. All households have electricity connection

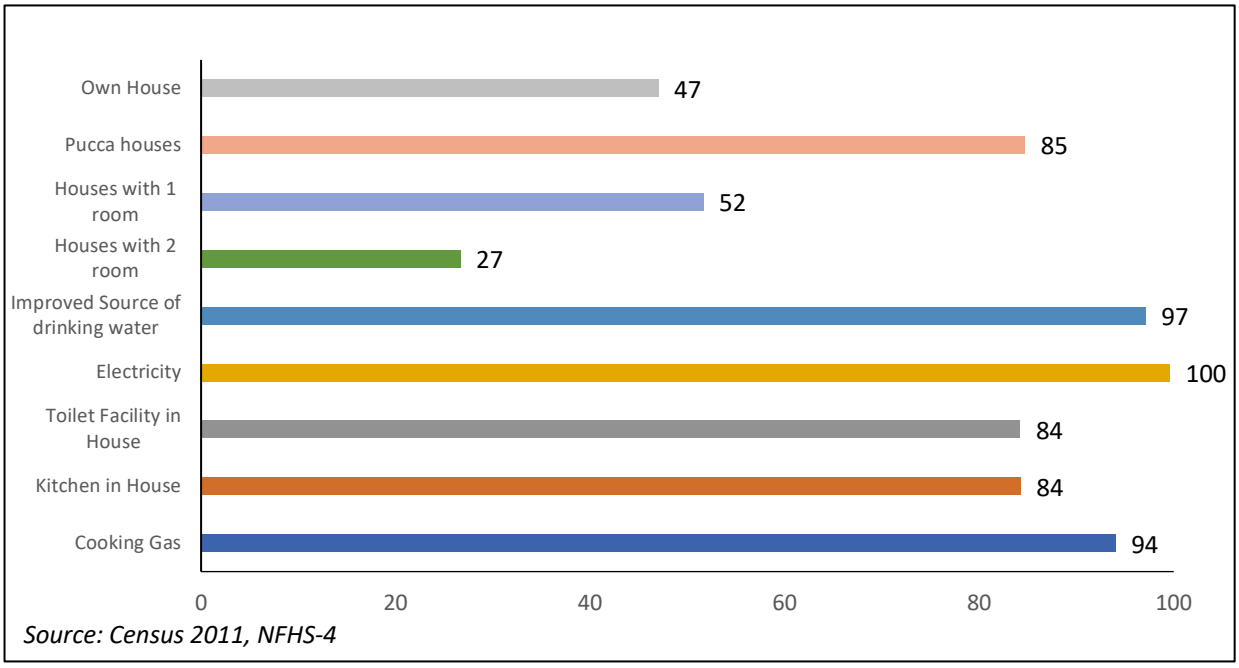
[2]Permanent houses refer to houses whose walls and roof are made of *pucca* materials, i.e., burnt bricks, G.I. sheets or other metal sheets, stone, cement. Concrete is used for wall, and tiles, slate, shingle, corrugated iron, zinc or other metal sheets, asbestos sheets, bricks, lime and stone and RBC/RCC concrete are used for roof.

Semi-permanent houses refer to houses made of other types of materials.

Temporary houses refer to houses having walls and roof made of k*utcha* materials, i.e., where grass, leaves, reeds, bamboo, mud and unburnt bricks are used for the construction of walls, and grass, leaves, reeds, bamboo thatch, mud, unburnt bricks and wood, etc. are used for roof.

and kitchen and toilet facility are available inside in 84% of houses. 94% of houses have clean fuel for cooking[3] and 97% of houses have improved source of drinking water.[4]

Figure 11: Ownership of amenities in urban Tiruppur (in %)



7.2. Visiting local households and estimating rent for acceptable healthy housing

We collected information on rent and utility costs in three different ways. (1) We visited homes of garment workers (Table 3 and Table A in Appendix 1); (2) we collected information on other homes of garment workers through discussions with them (Table B in Appendix 1); and (3) we visited homes that were not rented by garment workers that met our healthy housing decency standard that were away from the factory area and so required some commuting time and cost if a worker's company did not provide free transport (Table C in Appendix 1). We used all this information to estimate housing costs.

We visited the homes of 22 garment workers. Workers were chosen from different locations so that they were distributed across our four zones A, B, C, and D. These houses were largely located in a radius of around 1 to 2 kilometers from the worker's factory. They were mostly one room row houses and 14 of them were semi-pucca (i.e. the walls and floors were brick and cement, while the roof was made of red tiles). Fifteen of the 22 rented houses had only one room (Table 3). The carpeted area of houses was around 165 square feet on average for rented houses

[3] Electricity, LPG/natural gas, biogas.

[4] Piped water into dwelling/yard/plot, public tap/standpipe, tube well or borehole, protected dug well, protected spring, rainwater, community RO plant.

(ranging between 66 and 360 square feet). Toilet and bathrooms were generally located outside the house either in the immediate vicinity or a little further away and were either privately owned (for 14) or shared among two to three households (for 8). Discussions with the community people revealed that the construction of these houses were made on *Vastu Shastra style.*[5]Consequently, the floor plan of most of the houses was similar.

Table 3: Housing

Key features of garment workers households visited, by zone					
Houses (number visited)	**Zone A n=5**	**Zone B n=5**	**Zone C n=6**	**Zone D n=6**	**Total n=22**
Average carpeted area of rented houses (in sq. feet)	173 (mean) 160 (median)		160 (mean) 160 (median)		165 (mean) 160 (median)
Average carpeted area (in sq. feet.)	263	212	159	180	200
Number of rooms					
1 Room	2	2	5	6	15
2 Rooms	1	2	1		4
3 Rooms	2	1			3
Availability of Toilets					
Shared	1	2	3	2	8
Individual	4	3	3	4	14
Average (housing costs per month (in Rs.)					
Rent (rented houses only)	2,050		1,750		1,850
Electricity	245	130	207	250	210
Gas/fuel	290	253	239	251	257
Total monthly costs for rent + utilities					**2,317**

Source: Authors

On average, monthly housing expenses incurred by the workers who rented was around Rs. 2,300 (Rs. 1,850 for rent, Rs. 210 for electricity, and Rs. 257 for gas/fuel). As will be shown below, these costs are much too low for decent housing – mainly because workers' houses are unacceptably small. Note that there were no water costs generally, because water is provided free of cost to most houses by the municipal corporation twice in a week which is stored in underground storage tanks or in drums for daily usage. Only for two houses we visited was the cost of electricity included in the rent, while in the rest it was paid by the tenant.

Fifteen houses had a separate smaller room that was used as a kitchen, while in the remaining 7 houses a platform/table was used within the room for cooking. Figure 12 presents a schematic sketch of typical houses. Details of each house with a brief description are given in Table A in Appendix 1. According to our observations, only 1 out of the 22 worker houses we visited met our healthy housing standard and that house was owned. Only 1 rented house came close to meeting our housing standard (as while it had all of the needed characteristics and amenities, it

[5]*Vastu shastra* (vāstu śāstra) is a traditional Hindu system of architecture.

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was a bit on the small size with 360 square feet of carpeted space compared to our minimum standard of 388 square feet of carpeted living space). It rented for Rs. 3,800. This rent of Rs. 3,800 is smaller than an estimate of rent for our minimum living space of 388 square feet we made of around Rs. 4,200 for rent for a house if we assume that the relationship between rent and living space is linear (e.g. if living space doubled, rent would double) – which probably provides an underestimate of rent for 388 square feet of carpeted living space because the worker houses we visited were generally without all required amenities and adding amenities would undoubtedly increase the cost for rent per square foot.

Figure 12: Schematic sketches of different garment worker's houses

We also interviewed 30 workers whom we asked about their houses (see Table B in Appendix 1). Quality of these houses was generally far from adequate for a family. 23 were semi-*pucca* in nature while only 7 were *pucca* houses. Among the semi-*pucca* houses, 13 had roofs made of red tiles while 8 had an asbestos roof and 2 had a tin roof. All the houses had walls of brick and cement and concrete flooring. Most of the houses were one room (including kitchen) houses. As regards the size of these houses, average carpeted area was 182 square feet overall with a median of 160 square feet for rented housing (Table 4). 10 houses had a separate toilet and bath located outside the household premises, while 20 houses had a shared toilet and bathroom (1 for 2 units). 23 of the 30 houses were rented and the utility cost of electricity and cooking gas/fuel had to be paid by the tenant except for 3 houses where the rent included electricity. Water was provided free of cost to these houses by the municipal corporation twice in a week and stored in underground storage tanks or in drums for daily usage. Average rent of houses in Table 4 was Rs. 1,658. Since average carpeted area was 172 square feet for these rented houses, this implied rent of around Rs. 3,500 for a house with our minimum acceptable living space of 388 square feet (again assuming that the relationship between living space and rent is linear; for example, if living space doubled, rent would double) – which undoubtedly provides an underestimate of rent for 388 square feet of carpeted living space because worker houses were generally without all required amenities and adding amenities would increase rent per square foot. The average utility cost for electricity was Rs. 118 per house per month. Cooking gas/fuel cost was Rs. 250 per month on average.

Table 4: Households

Key features of households from interviews, by zone				
Households	**Zone A**	**Zone B**	**Zone D**	**Total**
	n=10	**n=10**	**n=10**	**n=30**
Average carpeted area of rented houses (in sq. feet)	156 mean 160 median	141 mean 145 median	219 mean 160 median	172 mean 160 median
Average carpeted area (in sq. feet)	191	141	215	182
Number of rooms				
1 Room	10	8	8	26
2 Rooms		2	2	4
Availability of toilets				
Shared	3	6	1	10
Individual	7	4	9	20
Average monthly costs if rented (in Rs.)				
Rent (rented houses only)	1,329	1,660	1,911	1,658
Electricity	116	133	105	118
Gas/fuel	235	286	228	250

[a]Water is provided free of cost by Municipal Corporation.

Image Set 3: Houses where garment workers live

Front view of houses

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Row houses

View of houses with toilets located in rear

Cluster of houses

Common corridor outside house

Image Set 4: Garment workers' houses from inside

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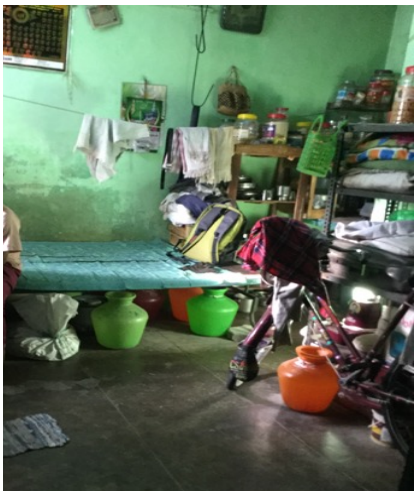
View of kitchen

One room house

Room size being measured for study

One room house



One room house

7.3. Cost of Other Decent Houses Visited

In order to determine the cost of decent house that is not overly expensive and meets our local housing standard and workers would aspire to live in, we purposely located and visited better built houses that meet our local housing standard for healthy and decent housing including around 388 square feet of living space.[6] These houses had cement walls, separate kitchen, individual toilet, and bathrooms. Rooms were well ventilated. Overall findings from these 9 houses are given in Table 5 (with details provided in Table C in Appendix 1).

We found that rent without utilities for the 8 generally decent 1-bedroom and 2-bedroom housing (that included a toilet/bath and kitchen) ranged from Rs. 3,500 to Rs. 6,000 per month.[7]

[6] Defined in a previous section.

[7] We excluded here the one house that rented for Rs. 3,000, because it was a semi-pucca house and had only 334 square feet of living space.

Rent varied depending on location in the city and if the house was recently constructed as well as by size. Acceptable houses also varied in size from 343 square feet to 470 square feet of living space. Average rent for these 8 houses was Rs. 4,100 per month – and so we feel that around Rs. 4,000 is a reasonable amount for rent for a basic acceptable house. While we found that 5 of these 8 houses rented for less than Rs. 4,000 (4 rented for Rs. 3,500 and 1 rented for Rs. 3,800), 4 of these 5 generally decent houses were on the small size having less space than our 388 square feet standard (341, 343, 345, and 368 square feet). Furthermore, all of the 8 better houses we visited were located away from factories and so required additional expenses for commuting to work (or employment in a factory that provided free transport to work).

Table 5: Housing Standard

Characteristics of decent houses visited	
	Total (n=9)
Average carpeted area (square feet)	381 (368 median)
Number of rooms 1 bedroom 2 bedrooms	 6 3
Had separate living area	9
Rooms had window for ventilation	9
Kitchen separate	9
Toilet Inside House Outside House	 6 3
Average monthly rent excluding electricity and gas (in Rs.)	3,978 (4,100 for the 8 houses acceptable houses)

7.4 Utilities and other housing costs

The above discussion on rent for acceptable housing did not consider costs of essential utilities like electricity, gas, and water.[8] Utility costs indicated by the residents of the decent houses that we visited was Rs. 548 per month on average (Rs. 215 for electricity and Rs. 333 for gas) with water generally provided for free by the municipal authorities. This amount for utility costs is a bit higher than the around Rs. 400 currently being spent by the approximately 50 garment workers we spoke to, which makes sense since many of these garments workers live in a very small dwelling. Thus, we feel that Rs. 548 ($8) per month for utility costs is reasonable.

In housing cost, we also factored in the interest cost payment to workers towards the loan that they usually take for having to give advance rent of six months to the owner of the house. We

[8] Water is free of cost as provided by Municipal Corporation.

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used an Interest per annum on a housing loan of 12%. This cost worked out to be Rs. 240 per month.

7.5 Summary of housing costs

The information we collected on local housing indicates that the size and amenities of the houses in which garment workers are presently living is far from decent for a family. The typical size of a worker's housing is 160 square feet (15 square meters) which is less than half of the minimum decency standard set by Government for low income families in Tamil Nadu.

We estimate that the rent per month for a decently constructed dwelling with adequate size of approximately 388 square feet and with basic amenities and outside of a slum area in Tiruppur is around Rs. 4,000 ($60) per month. This estimate for rent is consistent with the 3 different ways that we estimated rent for acceptable housing. Rent for 8 decent houses 5-6 kilometers from factories with 388 square feet of living space that we visited was around Rs. 4,000 on average, especially when added transport costs are considered. Also, houses of the roughly 50 garment workers living near to factories that we either visited or learned about through interviews with workers would have an estimated rental value of around Rs. 3,500 to Rs. 4,200 on average for 388 square feet of living space based on their cost per square foot. We also estimated Rs. 548 ($8) per month for utility costs and Rs. 240 ($4) per month for interest on the house loan required for 6 months advance payment.

8. NON-FOOD AND NON-HOUSING COSTS

Non-Food and Non-Housing (NFNH) costs are estimated in a different way than food costs and housing costs. Whereas food costs and housing costs are estimated based on normative standards (nutritious diet and healthy housing standard), NFNH costs are estimated to a large extent based on secondary data on household expenditures in urban Tamil Nadu according to the recent NSS Household Expenditure Survey (NSS-2010/11). This strategy is adopted, because it would be too difficult and time consuming to decide on appropriate standards and prices for all NFNH needs of families that includes clothing and footwear; furniture and household equipment; health care; education; recreation and culture; telephones; personal care; etc. However, since health care and education are considered human rights around the world, separate enquiries and post checks are done for these with NFNH costs increased if necessary to make sure that sufficient funds are included in NFNH for these human rights.

Non-Food Non-Housing (NFNH) costs for urban Tiruppur were estimated in three steps. In step 1, a preliminary estimate of NFNH costs was made based on current expenditure patterns in urban Tamil Nadu according to data from the 2010/11 Household Income and Expenditure Survey (NSS-2010/11). This approach, which relies on a variant of Engels's law[9] is simple and provides a

[9] Engel's law is from 1857 and states that the percentage of total expenditure that households spend for food decreases as household income increases (see Anker 2011).

preliminary estimate of the cost of all NFNH needs. It is worth mentioning that such a simple approach, where the cost of all non-food needs is estimated in one go, is often used to estimate living wages (see Anker 2011 review) and poverty lines (Anker, 2006b), including India poverty lines.[10] We used the household expenditure data for Tamil Nadu for households at the 4th decile of the urban household expenditure distribution for this calculation. The Anker methodology suggests using data for households in the 30th to 50th percentile of the income distribution for a developing country. Step 2 looks more carefully at health care and education costs to determine if funds included for these in NFNH from steps 1-2 are sufficient for decency - and then adds additional funds for these if required to ensure adequate funds for these human rights – which turns out to be not necessary for Tiruppur because of good government policy and programs for these in Tamil Nadu (see next section).

According to the NSS-2010/11, households in the 4th decile of the urban Tamil Nadu household expenditure distribution spend 42.6% on food and non-alcoholic beverages, 26.9% on housing, and 29.4% on NFNH after excluding pan and tobacco (Table 6).

[10] For step 1, we deviated from the typical approach taken in other poverty line and living wage methodologies, which estimate all non-food costs in one go (Anker, 2006a, 2006b, and 2011). We divided non-food needs and costs into two components: housing, where the cost was estimated based on normative standards for decent healthy housing (see previous section) and all NFNH needs. The latter is estimated using a variant of Engel's law. Our approach has several advantages over the usual approach. First and most importantly, our approach uses a normative standard for decent housing which is very important because many workers in Tiruppur live in substandard housing and this is reflected in household expenditure statistics. Second, since housing cost is the most important determinant of differences in living costs between areas within countries, it becomes easier to estimate separate living wages for different areas.

Figure 13: Household Expenditure Distribution

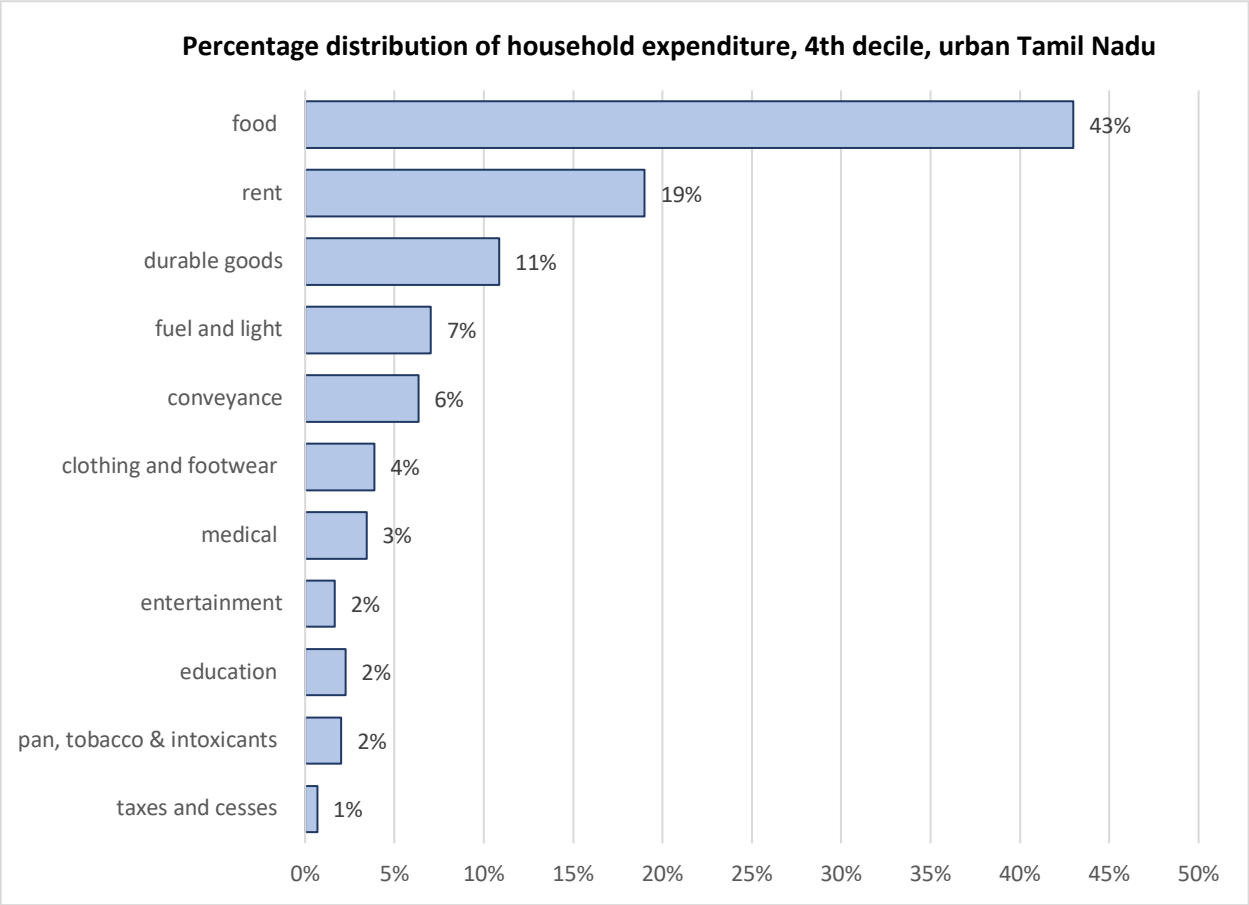

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Table 6: Non-food non-housing ratios

Estimating NFNH to Food ratio with adjustments using NSS 2010/11 household expenditure data from 4th decile households of the urban Tamil Nadu household expenditure distribution				
	Secondary data		Adjustments	
Major expenditure group	**Sub-major expenditure group**	**4th decile of household expenditure distribution (% expenditures)**	**Adjustments explanation**	**% after adjustment**
Food	Food & non-alcoholic beverages	42.6	No adjustment	42.6
TOTAL FOOD		**42.6**		**42.6**
Housing (includes imputed value of owned houses)		26.9		26.9
Alcohol, tobacco, pan				
	Alcohol	0.9		0.9
	Tobacco and pan	1.1	Excluded	0
Clothing and footwear		3.9	No adjustment	3.9
Durable goods		1.7	No adjustment	1.7
Health care		3.4	No adjustment	3.4
Education		2.3	No adjustment	2.3
Transport		6.3	No adjustment	6.3
Entertainment		1.7	No adjustment	1.7
Miscellaneous goods & services		9.2	No adjustment	9.2
TOTAL NFNH		**30.5**		**29.4**
NFNH/Food ratio		**0.72**		**0.69**

9. POST CHECKS ON NON-FOOD AND NON HOUSING COSTS

This section looks in more depth at the cost of decent health care and education in Tiruppur to see if funds included in our preliminary estimate of NFNH (which are based on NSS household expenditure data for urban Tamil Nadu) for these human rights are sufficient. If funds for these are not sufficient, NFNH is increased. Note that the preliminary estimate of NFNH costs for our reference family of 4 persons in Tiruppur is Rs. 5,353. This includes around Rs. 418 per month for education and Rs. 621 per month for health care (Table 7).

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Table 7: Education and health care

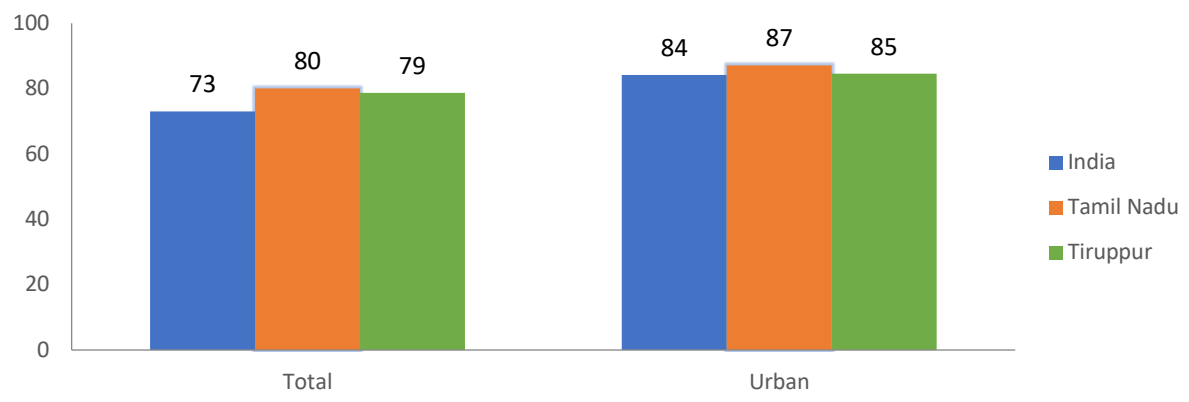
Education and health care amounts included in preliminary estimate of Non-food and Non-housing (NFNH) costs			
Item	**% of all household expenditure**	**% of NFNH expenditure**	**Amount (Rs. per month) when preliminary NFNH costs are Rs. 5,680**
Education	2.3	2.3/29.4=7.8%	444
Health care	3.4	3.4/29.4=11.6%	657

9.1 Education Post Check

Education is one of the fundamental factors of development. It is also seen as a human right around the world. No country can achieve sustainable economic development without substantial investment in human capital. Recognizing the importance of education, the Tamil Nadu State Government has placed a strong focus on education, significantly improving the quality of education imparted and ensuring that educational opportunities are available to all segments of the society. Tamil Nadu has performed better than other major states with regard to elementary education.

Overall, the literacy rate has improved in Tamil Nadu. Over the past five decades, the literacy rate has more than doubled in Tamil Nadu. It increased from 36 percent in 1961 to 80 percent in 2011. While several factors could have contributed to this, more inputs have gone to primary education. Literacy rate in Tamil Nadu is comparatively better (at 80%) than for all-India (73%). Literacy rate of Tiruppur District is also higher (79%) than all-India (73%) (Figure14). Furthermore, the literacy rate is higher in urban areas than in rural areas.

Figure 14: Literacy rate (%) for Tiruppur, Tamil Nadu, and India, total and urban



Source: Census 2011

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A slew of initiatives (Box 1) have been taken up to facilitate attendance of students in primary, upper primary, high, and higher secondary in Government and Government-aided schools.

Tamil Nadu Government tries to increase enrolment through different approaches, including providing awareness to the public about the importance of education and how it helps children.

Box 1

Schemes for students in Government and Government-aided schools

- ✓ One **free uniform set** is given to students in standards I to VIII who are enrolled in the noon meal scheme (1985-1986 onwards). This was increased to two sets per year from 2011-12, and four sets from 2012-13.
- ✓ **Free text books** are provided to all students studying in I to XII standard from 2005-06. Since 2012-13, the annual books for students studying in standards X, XI & XII and 1st term books for students of standard I to IX are distributed on the day schools reopens.
- ✓ **Free notebooks** are supplied to students studying in I to X standard (from 2012-13).
- ✓ From 2012-13 onwards, **educational kits** consisting of school bags, a geometry box, color pencils, crayons and an atlas are provided to students to make the learning process meaningful, easy and child friendly.
- ✓ One pair of **footwear free of cost** is distributed to all students studying from I to X standard in the beginning of the year.
- ✓ **A free bus pass is issued** to all students to travel in Tamil Nadu State Transport Corporation (TNSTC) buses from their residence to schools and back.
- ✓ Under **Puratchi Thalaivar MGR Nutritious Noon-Meal Program**, the State provides a nutritious noon-meal to all children up to standard X in schools.
- ✓ **A free bicycle** is distributed to students studying in plus one classes especially for those coming from deep rural pockets.
- ✓ **Special cash incentives are given** to students of secondary level from 2011-12. Rs. 1,500 per student for those studying in standard X and XI and Rs. 2,000 per student studying in standard XII are deposited in Tamil Nadu Power Finance Corporations. Amount is released to students on completion of their study.
- ✓ **A free laptop** is provided to develop skills and improve human resources, to all plus one, plus two and college students studying in Government/Government-aided institutions (from 2011 onwards).
- ✓ **Financial assistance for students who have lost their bread winning parents means that** Government deposits Rs. 50,000 in students' name. During the three-year period ending 2013-14, 1,080 students had benefited under this scheme.

Source: http://www.tn.gov.in/dear/Education.pdf

To assess how much it would cost for workers to educate their children through secondary school, we assumed that it was acceptable to attend a government school or government-aided

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school[11] - even if some workers prefer the prestige of a private school. As indicated above, government schools and government-aided schools are available, not costly, and of reasonable quality. Among 52 garment workers we interviewed, 25 had children going to school or college. Among their 43 children in school, 77% (33) were attending a Government school (Table 8). Note that generally children of garment workers live near to their school, and so they walk to school, while younger children are dropped off by one of their parents. Also note that according to the National University of Educational Planning and Administration (2014), 62% of elementary school students in Tamil Nadu went to a government school (40%) or government-aided school (22%) in 2012-13.

Table 8: Worker Children Education

Distribution of children of workers interviewed by type of school attending			
	Public	**Private**	**Total number**
Anganwadi Centre	4		4
Primary	10	4	14
Secondary	12	6	18
Higher secondary	3		3
College	4		4
Total number of students	33	10	43

According to statistics on household expenditures from the NSS 2010-11, despite Government schools being theoretically free, parents none-the-less spend Rs. 191 per month per child on average for items such as tuitions, private tuitions and books. [12] Considering two children in the reference size family, this estimate of Rs. 382 per month (i.e. 2 times Rs. 191) is a little less than the amount included for education in our preliminary NFNH estimate of Rs. 418 or $6.3 per month per family. Therefore, we did not make any post check adjustment for education to our preliminary estimate of NFNH costs.

9.2 Health Care Post Check

Government of India is committed to the goal of 'Health for All'. The obligation of the Government to ensure the highest possible health status of India's population and access to quality health care has been recognized in a number of key policy documents. The Indian health care sector is growing at a brisk pace due to its strengthening of coverage and services and increasing expenditure by public as well as private players.

[11]Government-aided schools and government schools are quite similar in cost and curriculum. Government-aided schools must have the same syllabus, curriculum, study materials, examinations, and rules and regulations as government schools. Government-aided schools can collect only minimal fees.

[12]It is worth noting that according to the primary data we collected in interviews with workers, it costs parents Rs. 1,484 per month on average to attend private school - slightly less for primary school (Rs. 1,406) compared to classes above primary school (Rs. 1,663).

According to National Family Health Survey-3, the private medical sector remains the primary source of health care for 70% of households in urban areas and 63% of households in rural areas. Reliance on the public and private health care sector varies significantly between states. For instance, 53% in Tamil Nadu avail services from a Government health facility, while in Bihar it is as low as 7% and in Rajasthan it is as high as 70%. Several reasons are cited for relying on private rather than public sector. The main reason at the national level is perceived poor quality of care in the public sector, with more than 57% of households pointing to this as the reason for a preference for seeking services from private health care. The National Urban Health Mission as a sub-mission of National Health Mission was approved by the Cabinet on 1 May 2013. It aims to meet the health care needs of the urban population with a focus on the urban poor, by making available to them essential primary health care services and reducing their out of pocket expenses for treatment.

Funds for health care included as part of the preliminary NFNH estimate costs is approximately Rs. 621 per month. To determine if this amount is sufficient for decent health care, we asked workers during the field study in Tiruppur about the number of times they fell ill recently and type of facility from where services were sought including the cost of medicines and consultancy fees incurred therein.

The workers with whom we spoke reported that on an average a person typically fell ill three to four times in a year and they generally visit an Employees' State Insurance Scheme of India (ESIC) dispensary. During our rapid assessment, while interviewing workers in SA8000 certified factories, we found that they are covered under ESIC and they get treatment free of cost from the ESIC dispensaries and ESIC affiliated private hospitals and clinics (Box 2). ESIC is an integrated social security scheme tailored to provide social protection to workers and their dependents in the organized sector (see Annex 2).

Box 2
ESIC Benefits

- ✓ Medical care
- ✓ Sickness benefit
- ✓ Maternity benefit
- ✓ Disablement
- ✓ Dependent's benefit
- ✓ Unemployment allowances
- ✓ Funeral expenses
- ✓ Rehabilitation
- ✓ Old age medical benefits
- ✓ Confinement expense

Source: http://www.esichennai.org

Workers indicated to us that they were happy with ESIC services and that no costs were incurred or that costs were reimbursed by ESIC by following general procedure. As all registered textile and garment factories are under the ESIC scheme, there is no out of pocket expense incurred for ESIC services.

Despite the availability of free ESIC services for the workers in registered factories, more than one-third of the workers we spoke to who sought treatment for themselves and/or family members during the last three months, used private providers.

To get an idea of local health care costs, we collected Information from five private doctors, three pathology laboratories, 5 medical shops, one ESIC dispensary, and one ESIC recognized private

hospital in urban Tiruppur. Based on these data and information from worker interviews, the costs incurred by patients seeking private treatment were found to typically be around Rs. 100 per visit to private clinics for a consultation; Rs. 250 for a lab test; and Rs. 200 for medicine.

We assumed that people typically visit a doctor/clinic or pharmacy four times a year to take care of routine illness and that family members covered by ESIC go twice a year to an ESIC dispensary for which all medicines and services are provided free of charge, once a year to a private medical practitioner, and once a year to a pharmacy to purchase medicine; we assumed that people had one lab test per year equally divided between private and public providers. This implied an average cost to a family of 4 persons covered by ESIC of Rs. 208 per month for routine medical care. Workers and families not insured through the ESIC would be likely to have much higher health care costs because they would use private clinics and doctors more often (3 private clinic visits and 1 pharmacy and 1 lab test per year) estimated to be Rs. 450 per month for the family.[13] These estimated health care costs are very conservative, because they only include costs for routine illnesses and do not consider the cost of serious illness.

The above conservative estimates for routine health care costs are less than the funds included in our preliminary NFNH estimate for health care (Rs. 621 per month), which makes sense as our estimate is for routine health care costs only and does not include costs for major illnesses or injuries. For this reason, no post check adjustment was made for health care expenses to the Rs. 621 (around $9) per month already included in the preliminary estimate of NFNH costs.

10. PROVISION FOR UNEXPECTED EVENTS TO ENSURE SUSTAINABILITY

Unforeseen expenses and events can quickly throw workers living at a basic life style into poverty and debt from which they may not be able to recover. When estimating a living wage, it is common to add a small margin above the cost of a basic quality life to allow for unexpected events (Anker, 2011). We decided to use a 5% margin for sustainability for urban Tiruppur to allow for unforeseen emergencies. It may be noted that interest and debt payments are ignored in our calculations. It is assumed that a living wage would be sufficient to enable workers to stay out of crippling debt.

[13]It is worth noting that our gross living wage includes the workers' contribution to ESIC (1.75% of the living wage).

SECTION III

LIVING WAGE FOR WORKERS

11. FAMILY SIZE NEEDING TO BE SUPPORTED BY LIVING WAGE

Living wage is a family concept. This is clearly shown by the ILO comprehensive review of living wages (Anker, 2011). The need for a living wage to support a family is also included in the living wage definition of the Global Living Wage Coalition (see section 4 above). It is, therefore, necessary to determine an appropriate family size for Tiruppur for estimating a living wage.

We use a family size of 4 persons (two adults and 2 children) to estimate our living wage for Tiruppur. This family size is based on information on: (i) fertility rates and child mortality rates and the number of children women in urban Tiruppur are now typically having, and (ii) average household size in urban Tiruppur.

The total fertility rate for urban Tamil Nadu is 1.5 and 1.9 for rural Tamil Nadu as per NFHS-4. Fertility has been falling over time with the total fertility rate in Tamil Nadu going from 2.65 in 1990 to 1.7 in 2015. When under-five child mortality of around 24 per 1000 births (NFHS-4) is taken into consideration, the number of children surviving to age 5 in urban Tamil Nadu is a little less than 1.5. This adjusted fertility rate implies a family size of less than 4 (2 adults and around 1.5 children).

Average household size in urban Tiruppur is around 4.7 according to the 2011 Census. When average household size is recalculated after excluding one-person households (that definitely do not include children) and very large households (that almost assuredly are extended families often with more than 2 working age adults which is not considered as a possibility when number of workers per household is estimated), adjusted average household size is found to be 3.7 according to 2011 Census data.

We decided that a reference family size of 4 (2 adults and 2 children) was reasonable for Tiruppur. Although this is higher than the mortality adjusted total fertility rate based family size (around 3.5) and the adjusted average household size (around 3.7), it is common for couples in Tamil Nadu to have 2 children - and in addition using less than 2 children per couple would not allow for population reproduction without massive immigration.

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12. NUMBER OF FULL-TIME EQUIVALENT WORKERS IN FAMILY PROVIDING SUPPORT

As living wage is a family concept, it is appropriate to expect more than one adult in a family to provide financial support through work.[14] How we determine the number of full-time working adults per couple in our reference family is explained in this section.

We use 1.58 full-time equivalent workers per couple to estimate our living wage for Tiruppur. This means that the cost of a decent but basic living standard for a family of 4 persons is divided by 1.58 to determine our living wage for Tiruppur.

To determine an appropriate number of full-time equivalent workers per couple for Tiruppur, we estimated separately the probability of males and females working full-time over the year, and took the average of these two values to represent this probability for a couple. To do this, we used: (i) information from the 2011 Census for urban Tamil Nadu on age and sex specific workforce (which is labor force minus unemployment)[15] participation rates, (ii) information from the 2011 Census on age and sex specific marginal employment rates (in terms of number of months over the year that workers work), and (iii) assumptions on male and female part-time employment rates (in terms of less than full-time work hours during days and weeks when working). Rates for ages 25-59 are used, because these are the prime working ages. This age group purposely excludes younger ages when many are still in school and older ages when many are retired.

According to 2011 Census data for urban Tamil Nadu, 93.2% of men ages 25-59 and 33.3% of women ages 25-59 work during the year (63.2% for a couple). Taking into consideration the likelihood of not working throughout the year - what Indian statistics call marginal workers (i.e. those who work less than 3 months during the year, or work 3-6 months during the year) - the percentage of males and females 25-59 working throughout the year reduces to 89.1% for men and 30.2% for women 25-59 (59.6% for a couple). Adjusting these values for what we feel are reasonable assumptions on the likelihood that men (5%) and women (10%) are part-time workers during months when they are working, reduces these values to 86.9% for men and 28.7% for women (57.8% for a couple), which we rounded to 0.58 for a couple.

The number of full-time equivalent workers per family used to estimate our living wage was then estimated by adding 1.0 (since we are concerned with a situation where there is assumed to be

[14] One assumption of the Anker living wage methodology is that children do not work and provide support for the family. This assumption is consistent with the decency concept of a living wage.

[15] This approach only appears to differ from the typical approach used in the Anker methodology that uses: (i) labor force participation rates; (ii) unemployment rates; and (iii) part-time employment rates. The approach used here for India does not use unemployment rates, because India reports workforce participation rates that excludes unemployment.

a full-time factory worker in the family) to the average proportion of full-time work per couple estimated above (0.58) to arrive at 1.58 full-time equivalent workers in the reference family.

13. TAKE HOME PAY REQUIRED AND TAKING TAXES AND STATUATORY DEDUCTIONS FROM PAY INTO ACCOUNT

The living wage estimated above should enable workers to be able to afford a basic but decent living standard for Tiruppur. This should be looked at as required net take-home pay. However, the living wage which needs to be earned needs to take into account that workers contribute to social security which reduces their take home pay. Because of low earnings, garment workers do not reach the income group who have to pay income tax. However, workers have a 12% deduction for Provident Fund and a 1.75% deduction for health security that goes to ESIC. Considering our net living wage is Rs. 11,918 ($178), this implies Rs. 1,900 ($28) in mandatory deductions (Rs. 1,658 for Provident Fund and Rs. 242 for ESIC), and so a gross living wage of Rs. 13,817 ($ 207).

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SECTION IV

ESTIMATING GAPS BETWEEN LIVING WAGE AND PREVAILING WAGES

14. PREVAILING WAGE

The Tiruppur Employers' Association (TEA) entered into a four-year wage accord in 2016 with the trade unions to increase wages by 33% over a four-year time period (18% from April 2016 followed by a 5 % increase in each of the three following years). The agreement also includes a Dearness Allowance (DA) based on the Consumer Price Index (CPI) and a travel allowance of Rs. 20 for each working day. As per the agreement signed by the representatives of Workers' Unions and Tiruppur Exporters' Association (TEA) before the Joint Labor Commissioner in Coimbatore, the minimum TEA wages are given in Table 11 at the time of our study. Workers sometimes also get some small benefits like subsidized meals/tea-coffee, medical benefits, and gifts and bonuses around important festivals such as Diwali. However, since these are not regular or mandated, these minor benefits are not considered in our estimation of prevailing wages.[16] Workers get overtime pay when they work extra hours beyond the normal 48 hours per week. This was not considered in our estimate of prevailing wages of garment workers for comparison to our living wage because the definition of a living wage says that it must be earned in normal working hours. At the end of the year, most workers receive an annual bonus of one additional month pay (equivalent to an additional 8.33% per month).[17] Taking into consideration the additional month of pay most workers receive at the end of the year prorated to a monthly value brings the pay for cutters, tailors, ironmen, and packers for example to Rs. 9,553 per month (see last column in Table 9).

Table 9: TEA agreed wages

TEA (Tiruppur Exporters Association) agreed wage for different categories of workers in garment industry, 2016-2020 agreement										
Category	***Basic daily wage (In Rs.)***	***Wage increase***				***Dearness Allowance per day (in Rs.)***	***Travel Allowance per day (in Rs.)***	***Total Daily wage (in Rs.) 30.7.16***	***Total Monthly Wage (in Rs.) 30.7.16***	***Total Monthly Wage including end of year one month bonus (in Rs.) 30.7.16***
		1st Year 1.4.16 to 31.3.17	***2nd Year*** 1.4.17 to 31.3.18	***3rd Year*** 1.4.18 to 31.3.19	***4th Year*** 1.4.19 to 31.3.20					
Cutting, Tailoring, Ironing, Packing,	158.44	28.52 (18%)	5%	5%	5%	137.98	20	345	8,970	9,553
Checking	90.42	16.28	5%	5%	5%	137.98	20	265	6,890	7,464

[16] It is worth noting that for specific establishments that provide important benefits to most of its workers, such as free lunches, fair and reasonable values for such benefits should be considered part of prevailing wages when such establishments are audited for payment of a living wage.

[17] Most workers also receive a gratuity bonus after 5 years of service when they stay with the same employer for 5 years. This is not included in prevailing wage for comparison to our living wage, because it is not available to help pay for ongoing daily expenses as it is only received after 5 years by some workers.

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TEA (Tiruppur Exporters Association) agreed wage for different categories of workers in garment industry, 2016-2020 agreement										
Label Putting	81.48	14.67	5%	5%	5%	137.98	20	254	6,607	7,158
Hand Folding	79.24	14.26	5%	5%	5%	137.98	20	251	6,539	7,083
Damage Spotting	63.33	11.40	5%	5%	5%	137.98	20	233	6,050	6,555
Fold and tie like assistance	45.39	8.17	5%	5%	5%	137.98	20	212	5,500	5,958
Machine, local section	147.62	26.57	5%	5%	5%	137.98	20	332	8,636	9,220

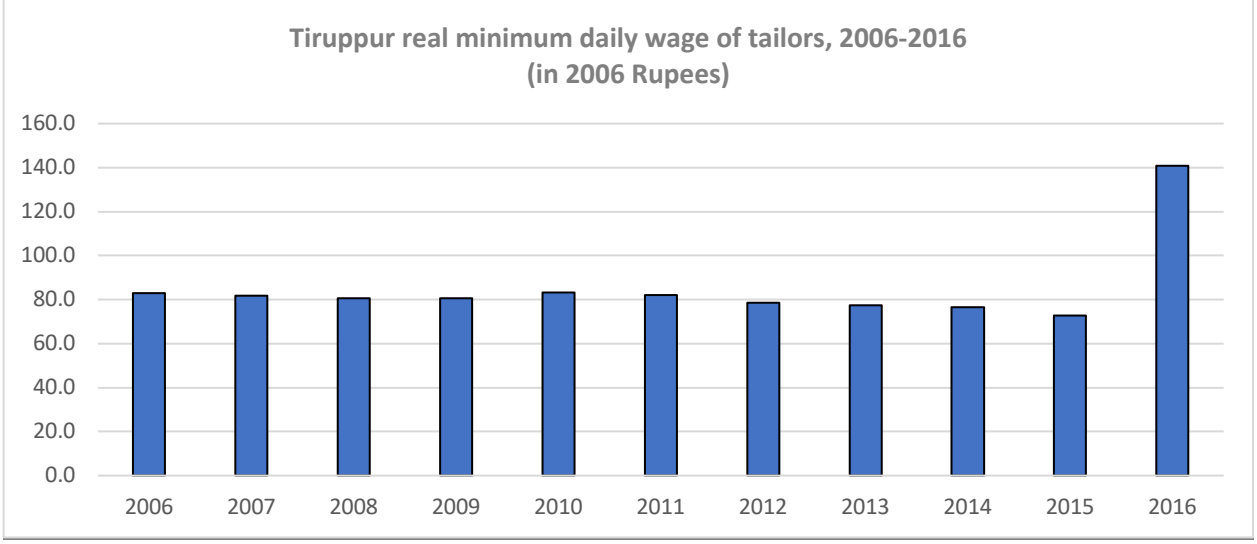
Note: Most garment workers are in the 'cutting, tailoring, ironing and packing' category.

14.1 Wage trends

Figure 15 indicates how the government minimum wage for tailors in the hosiery industry in Tiruppur has changed over the past ten years expressed in 2006 rupees so that changes in purchasing power of the minimum wage can be observed. Between 2006 and 2015, the purchasing power of the minimum wage when inflation is taken into account decreased by around 12% in this time period despite considerable economic development in India.

Then in 2016, the minimum wage for tailors rose sharply. This means that the real minimum wage rose by around 70% over the past 10 years, or by around 5.3% per year on average, with all of the increase coming in 2016. The reason that the minimum wage rose so much is that the Tamil Nadu Government issued minimum wages for the hosiery industry in 2016 for the first time, after studying this issue since 2012.[18]

Figure 15: Tiruppur real minimum wage for tailors



Source: www.citehr.com; www.referencer.in/TA_DA_Rules/DA_Rates.aspx, www.paycheck.in

[18]Note that the garment and textile factories in Tiruppur are considered to be part of the hosiery industry and therefore the hosiery industry minimum wage applies to them.

15. WAGE LADDER

In this section, a wage ladder is used to illustrate how our living wage compares to prevailing wages in the garment industry in Tamil Nadu, poverty line wages for urban Tamil Nadu and India, and other wages benchmarks.

World Bank Poverty Line Wage. We calculate the wages implied by the World Bank poverty lines of $1.9 and $3.1 PPP a day as Rs. 2,821 and Rs. 4,602 using the PPP conversion factor for private consumption for India of Rs. 19.28 for 2015 (i.e. 3.1 PPP × 19.28 PPP × 4-person family size × 365/12 days per month / 1.58 full-time workers per family).

Urban Tamil Nadu and Urban National Poverty Line Wages. The all-India (urban) poverty line for 2011-12 was Rs. 1,407 per person per month, which equals Rs. 5,628 for a family of 4. The poverty line for urban Tamil Nadu for 2011-12 was Rs. 1,380 which equals Rs. 5,520 for a family of 4. Dividing this by the number of full-time workers per family of 1.58 gives us an all-India urban poverty line wage equal to Rs. 3,562 for 2011/12 and an urban Tamil Nadu poverty line wage equal to Rs. 3,494 for 2011/12.[19] When we increase these poverty line wages for inflation between 2012 and 2016, the updated poverty line wages are Rs. 4,535 (all-India urban poverty line wage) and Rs. 4,448 (Tamil Nadu urban poverty line wage).

[19]http://calculatorstack.com/inflation-calculator-india.php

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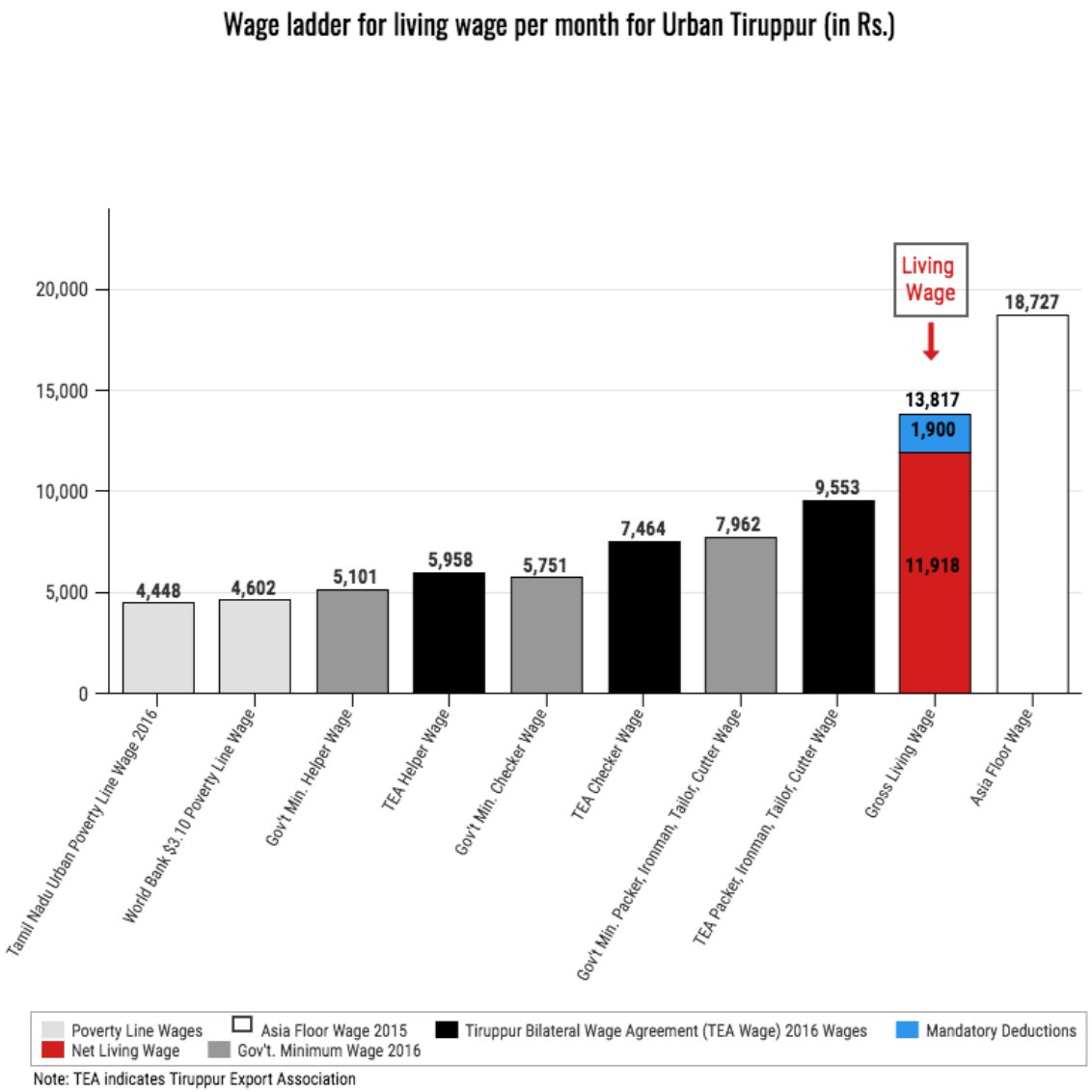
Figure 16: Wage Ladder



Sources: http://www.paycheck.in/main/salary/minimumwages/tamil-nadu
Tamil Nadu Minimum Wage w.e.f. April 2016 to March 31, 2017

Figure 16 provides a wage ladder that compares the above poverty line wages, the minimum wage[20], the Asia Floor Wage (Rs. 18,727) and prevailing wages of garment workers in Tiruppur negotiated by TEA and trade unions to our living wage. Note that the monthly TEA wages includes an additional 8.33% to account for the prorated monthly value of the annual 13th month bonus

[20]The hosiery minimum wage applies to garment and textile factories in Tiruppur because they manufacture mainly knitted products which are considered part of the hosiery industry.

that is mandatory for all factories to pay this. Our estimated living wage of Rs. 13,817 is around 45% more than the TEA negotiated wage for most garment workers while it is around 26% less than the Asian Floor Wage for India.

16. CONCLUSIONS

Table 10 provides details of our living wage estimates for Tiruppur. Table 11 provides some of the key assumptions used to make these living wage estimates.

Our living wage estimate for Tiruppur city is Rs. 13,817 ($ 207). This living wage is approximately 45% more than the current wage (Rs. 9,553) of the majority of garment workers in Tiruppur (cutters, tailors, ironers, packers), a little less than twice the wage of checkers (Rs. 7,464) and more than twice the wage of helpers (Rs. 5,958). Our living wage is around three times more than the urban Tamil Nadu and World Bank poverty line wages. On the other hand, our living wage is around 26% less than the 2015 Asian Floor Wage for India. These large gaps reflect the low wages received by garment workers, since our living wage is not able to support an extravagant life style for Tiruppur as we used conservative assumptions to estimate the cost of a basic but decent living standard for Tiruppur. For example, we assumed for our living wage that the dwelling for a family of 4 persons only needs to be 388 square feet (36 square meters) in size and can have an outdoor toilet in close proximity to the house. The model diet we used to estimate food costs includes only 2 meat or fish meals per week and 1 cup of milk per day for children and ¼ cup per day of milk for adults; food items included in our model diet were always acceptable lower cost rice, fruits, vegetables, meats, fish, etc.; and rice provides 52% of all calories per day. It is worth noting, though, that public policies of the Tamil Nadu government helped to reduce our living wage - such as public school programs which reduced the cost of school to parents; free school lunch which reduced the cost of meals prepared at home; Public Distribution System for rice and wheat which reduced the cost of these foods in our model diet; and ESIC health care insurance for workers in registered factories and reasonably good public health care facilities which reduced health care costs of workers, especially those in registered factories.

The fact of the matter is that most garment workers in Tiruppur have little choice given their current wages and local living costs but to live in substandard housing, to eat too few vegetables and fruits and drink too little milk, and too often to forgo many activities such as recreation and travel. For example, most garment workers in Tiruppur have no choice currently but to live in a 10 foot by 10 foot room with a 10 foot by 6 foot room kitchen (or around 160 square feet, 15 square meters, in total), with either a shared and/or individual toilet/ bath. These one-room units are typically in one-story row houses.

Appropriate mechanisms need to be worked out to narrow the large gap between a living wage and prevailing wages in the garment industry in Tiruppur if garment workers are to be able to afford a better living standard and eventually a decent living standard. Efforts are needed from all actors in the value chain to help increase wages of garment workers.

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Table 10: Summary Calculations of Living Wage

Tiruppur summary calculation of living wage		
FAMILY EXPENSES	**Cost in**	
	Local currency (Rs.)	**USD**
Food cost per month for reference family (1)	7,792 [a]	117
Food cost per person per day	64.04 [a]	0.96
Housing costs per month (2)	4,788	72
Rent	4,000	60
Utilities (electricity, LPG, water)	548	8
Payment of interest on loan required for advance rent of six months	240	4
Non-Food Non-Housing costs (NFNH) per month taking into consideration post checks (3)	5,353	80
Preliminary estimate of NFNH costs	5,353	80
Health care post check adjustment	0	0
Education post check adjustment	0	0
Additional 5% for sustainability and emergencies (4)	897	13
Total household costs per month for basic but decent living standard for reference family (5) [5=1+2+3+4]	**18,830**	**281**
Net living wage per month take home pay (6) [6=5/number of full-time workers per family]	**11,918**	**178**
Mandatory deductions from pay (7) of 13.75% (12% Provident Fund and 1.75% ESI)	**1,900**	**28**
Gross wage required per month for living wage (8) [8=6+7]	**13,817**	**207**

Notes: Cost of rice and wheat (atta) in the model diet considers that workers buy a substantial portion of their rice and wheat from the Public Distribution System (PBS) for free or at a very low price per kilo.

Table 11: Key values and assumptions

Key values and assumptions	
Exchange rate of Indian Rupees to US$	Rs. 66.88
Number of full-time workers per couple	1.58
Number of full-time workdays per month	26
Number of hours work in normal week	48
Reference family size	4
Number of children in reference family	2
Preliminary NFNH to Food ratio	0.687

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APPENDIX

Table A: Condition and cost of garment worker houses visited and observed

Condition and cost of garment worker houses visited and observed			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
Zones A and B			
No	1,000 + 150 for electricity + 0 for gas/fuel as they did not cook at home =1,150	10x10=100 (kitchen included in the room) =100 sq feet	A pucca one room house(r) with roof made up of concrete. Kitchen area is inside the room. Shared toilets (1 in 2 units) and bathroom (1 in 2 units) on the outside measuring 14 sq. feet each. No ventilation in house.
No	1,500 + 100 for electricity + 250 for gas =1850	10x10=100 room + 6x10=60 kitchen =160 sq feet	A semi-pucca one room plus kitchen house with roof made up of asbestoses. Shared toilets (1 in 2 units) and bathroom (1 for 2 units) outside measuring 16 sq. feet each.
No	1,800 + 0 for electricity + 325 for gas/fuel =2,125	6x8=48 room + 10x8 =80 room + 4x8=32 kitchen =160 sq feet	A semi-pucca two room plus kitchen house (1 bhk) with roof made up of asbestoses. Shared toilets (1 for 2 units) and bathroom (1 for 2 units) on the outside measuring 16 sq. feet each.
No	1,900 + 175 for electricity + 325 for gas/fuel =2,400	10x10=100(kitchen included in the room) =100 sq feet	A pucca one room house(r) with roof made up of concrete. The kitchen area is inside the room. Individual toilet and bathroom on the outside measuring 16 sq. feet each.
No	2,300 + 250 for electricity + 350 for gas/fuel =2,900	16x10=160 (kitchen included in the room) =160 sq feet	A semi-pucca one room house(r) with roof made up of asbestoses. Row house. The kitchen area is inside the room. Shared toilets (1 in 2 units) and bathroom (1 for 2 units) on the outside measuring 14 sq. feet each.
Yes	3,800 + 500 for electricity + 325 for gas/fuel =4,625	16x10=160 room + 10x10=100room +5x10=50 room + 5x10=50 kitchen =360 sq feet	A pucca three room plus kitchen house (2 bhk) with roof made up of concrete. Individual toilet and bathroom on the outside measuring 17.5 sq. feet each.
Yes	Owned + 150 for electricity + 325 for gas/fuel =475	10x10=100 room + 10x10=100 room + 8x12=96 room + 10x8=80 kitchen =396 sq feet	A pucca three room plus kitchen house (2 bhk) with roof made up of concrete. Individual toilet and bathroom on the outside measuring 12 sq. feet each.
No	Owned + 150 for electricity + 150 for gas	16x10=160 room + 10x8=80room	A pucca two room plus kitchen house (1 bhk) with roof made up of concrete.

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Condition and cost of garment worker houses visited and observed			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
	=300	+ 8x6=48 kitchen =288 sq feet	Individual toilet and bathroom on the outside measuring 20 sq. feet each.
Yes	Owned + 150 for electricity + 125 for gas/fuel =275	10x10=100 room + 12x10= 120 room + 8x10=80 kitchen =300 sq feet	A pucca two room plus kitchen house (1 bhk) with roof made up of concrete. Individual toilet and bathroom on the outside measuring 20 sq. feet each.
Yes	Owned + 350 for electricity + 433 for gas/fuel =783	10x10=100 room + 10x10=100 room + 6x12=72 room + 8x10=80 kitchen =352 sq feet	A semi-pucca three room plus kitchen house (2 bhk) with roof made up of asbestoses. Individual toilet and bathroom on the outside measuring 14 sq. feet each.
Zones C and D			
No	900 + 90 for electricity + 215 for gas/fuel =1,200	10x8 = 80sq feet room Total size = 80sq feet	Semi-pucca house. Red tiles for roof. No kitchen in house. Toilets are outside and shared between 2 units. No ventilation.
No	1,000 + 200 for electricity + 250 for gas/fuel =1,450	10x8 = 80 sq. feet room Total size = 80 sq. feet	Semi-pucca house. Red tiles for roof. No kitchen in house. Family uses public toilet. Shared bathroom 1 in 2 units. No ventilation.
No	1,300 including electricity + 120 for gas/fuel =1,420	11x6 = 66 sq. feet room Total size = 66 sq. feet	One room semi-pucca row house. Red tiles for roof. Kitchen is inside the room on a table. Toilet/bathroom are outside and shared between 2 units. The room has a main door for entrance.
No	1,800 including electricity + 230 for gas/fuel =2,030	10x16= 160 sq. feet room + 10x8= 80 sq. feet kitchen Total size = 240 sq. feet	Pucca house. Toilets are outside and individual.
No	1,800 + 400 for electricity + 325 for gas/fuel =2,525	10x10 = 100 sq. feet room + 6x5 = 30 sq. feet living room/ hall + 5x5= 25 .55 sq. feet	Semi-pucca house. Red tiles for roof. Toilets are outside and shared between 2 units.
No	2,000 + 150 for electricity + 325 for gas/fuel =2475	10x16= 160 sq feet room, Total size = 160 sq feet	Semi-pucca house. Red tiles for roof. Kitchen inside the room only. Toilet shared 1 in 2 units.

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Condition and cost of garment worker houses visited and observed			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
No	2,000 + 250 for electricity + 200 for gas/fuel =2,450	10x10 = 100 sq feet room + 10x6= 60sq feet kitchen Total size = 160sq feet	Semi-pucca house. Use of asbestos sheet to make roof. Toilets outside and shared between 2 units.
No	2,000 + 300 for electricity + 375 for gas/fuel =2,650	10x10= 100 sq feet room 1 + 10x10= 100 sq feet room 2 + 10x6= 60 sq feet kitchen Total size = 260 sq feet	Semi-pucca house. Use of red tiles to make roof. Toilets outside and are individual.
No	2,000 + 300 for electricity + 200 for gas/fuel =2500	10x10 = 100 sq feet room + 6x10= 60 sq feet kitchen Total size = 160 sq feet	Semi-pucca house. Use of red tiles to make roof. Kitchen had two windows and the room had one window. Entry in the house is through the kitchen which further enters into the room. Toilets are outside and individual.
No	2,000 + 300 for electricity + 350 for gas/fuel =2650	10x10 = 100 sq feet room + 6x10= 60 sq feet kitchen Total size = 160 sq feet	Semi-pucca house. Use of red tiles to make roof. Veranda. Toilets are outside and individual.
No	2,000 + 300 for electricity + 350 for gas/fuel =2650	10x16= 160 sq feet room + 10x8= 80sq feet kitchen Total size = 240 sq feet	Pucca house. Toilets are outside and individual.
No	2,200 + 500 for electricity + 145 for gas/fuel =2845	10x11= 110 sq feet room + 10x5= 50 sq feet kitchen Total size = 160 sq feet	Semi-pucca house. Use of red tiles to make roof. Toilets are outside and are individual.

Notes: bhk indicates bedroom, hall and kitchen.

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Table B: Condition and cost of garment worker houses collected through worker interviews

Condition and cost of garment worker houses collected through worker interviews			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
Zone A			
No	800 + 150 for electricity + 120 for gas/fuel =1,070	10x10=100 room + 6x10=60 kitchen =160 sq feet	A pucca house with concrete roof. Separate individual toilet and bathroom room outside the house of 14 sq feet each. House was shared by the worker with co-workers.
No	900 + 150 for electricity + 300 for gas/fuel =1,350	10x10=100 room + 5x10=50 kitchen =150 sq feet	A pucca house plus kitchen with roof made up of concrete. Individual toilets and bathroom of 20 sq feet each respectively on the outside.
No	1,000 + 50 for electricity + 280 for gas/fuel =1,330	10x10=100 room + 4x10=40 kitchen =140 sq feet	A pucca house with roof made up of concrete. Individual toilets and bathroom of 16 sq feet each respectively on the outside.
No	1,200 + 100 for electricity + 200 for fuel =1,500	10x10=100 room + 4x4= 16room + 4x6=24 kitchen =160 sq feet	A pucca house with a big room and a small room, with separate kitchen. However, it has shared toilet (1 for 2 units) and bathroom (1 for 2 units).
No	1,400 + 100 for electricity + 300 for gas/fuel =1,800	11x10=110 room + 6x10=60 kitchen =170 sq feet	Semi-pucca house with roof tiles. Shared toilet (1 for 2 units) and bathroom (1 for 2 units) of 14 sq feet each.
No	2,000 including electricity + 305 for gas/fuel =2,305	10x10=100 room +5x5= 25 room + 5x5=25 kitchen =150 sq feet	A semi-pucca two room plus kitchen (1 bhk) house with roof of asbestoses sheets. Individual toilets and bathroom of 14 sq feet each respectively on the outside.
No	2,000 + 150 for electricity + 300 for gas/fuel =2,450	10x10=100 room + 6x10=60 kitchen =160 sq feet	A pucca house with concrete roof and shared by co-workers. Shared toilet (1 for 2 units) and bathroom (1 for 2 units).
No	Owned + 200 for electricity + 300 for gas/fuel =500	16x10=160 room + 6x10=60 room + 6x10=60 room + 4x3=12kitchen =292 sq feet	A two bedroom plus hall plus kitchen (2 bhk) semi-pucca house with roof tiles. Individual toilets and bathroom of 14 sq feet each respectively on the outside.
Yes	Owned + 100 for electricity + 200 for gas/fuel =300	10x10=100 room +10x10=100 room + 12x8=96 room + 8x10=80 kitchen =376 sq feet	A semi-pucca three room plus kitchen (2 bhk) house with roof tiles. Owned by the worker. Individual toilets and bathroom of 20 sq feet each respectively on the outside.

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Condition and cost of garment worker houses collected through worker interviews			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
No	Owned + 50 for electricity + 50 for gas/fuel =100	10x10=100 room + 6x6=36 room + 4x6=24 kitchen =160 sq feet	A semi-pucca two room plus kitchen (1 bhk) house with roof tiles. Individual toilets and bathroom of 16 sq feet each respectively on the outside.
Zone B			
No	1,000 + 75 for electricity + 200 for gas/fuel =1,275	16x10=160 (kitchen included in the room) =160 sq feet	A semi-pucca one room house with roof made up of roof tiles. The kitchen area is inside the room. Shared toilets (1 for 3 units) and bathroom (1 for 3 units) on the outside.
No	1,200 + 50 for electricity + 120 for gas/fuel =1,370	12x10=120 (kitchen included in the room) =120 sq feet	A semi-pucca one room house with roof made up of asbestoses. The kitchen area is inside the room. Shared toilets (1 for 2 units) and bathroom (1 for 2 units) on the outside.
No	1,200 + 300 for electricity + 325for gas/fuel =1,825	12x10=120 (kitchen included in the room) =120 sq feet	A semi-pucca one room house with roof made up of tin. The kitchen area is inside the room. Shared toilets (1 for 3 units) and bathroom (1 for 3 units) on the outside.
No	1,200 including electricity + 480 for gas/fuel =1,680	12x10 = 120 (kitchen included in the room) =120 sq feet	A semi-pucca one room house with roof made up of asbestoses. The kitchen area is inside the room. Shared toilets (1 for 3 units) and bathroom (1 for 3 units) on the outside.
No	1,500 + 0 for electricity + 200 for gas/fuel =1,700	10x10 = 100 room + 5x10 = 50 kitchen =150 sq feet	A semi-pucca one room kitchen house with roof made up of roof tiles. Shared toilets (1 for 2 units) and bathroom (1 for 2 units) of 14 sq feet each on the outside.
No	1,500 + 100 for electricity + 250 for gas/fuel =1,850	12x10 = 120 (kitchen included in the room) =120 sq feet	A semi-pucca one room house with roof made up of roof tiles. The kitchen area is inside the room. Shared toilets (1 for 3 units) and bathroom (1 for 3 units) on the outside. No ventilation in house.
No	2,000 + 125 for electricity + 300 for gas/fuel =2,425	10x10 = 100 room + 6x10 = 60 kitchen =160 sq feet	A semi-pucca one room kitchen house with roof made up of roof tiles. Individual toilets and bathroom of 14 sq feet each respectively on the outside.

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Condition and cost of garment worker houses collected through worker interviews			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
No	2,000 + including electricity + 325 for gas/fuel 2,325=	10x10 = 100 room + 6x10 = 60 kitchen =160 sq feet	A semi-pucca one room kitchen house with roof made up of roof tiles. Individual toilets and bathroom of 16 sq feet each respectively on the outside.
No	2,000 + 150 for electricity + 350 for gas/fuel = 2,500	10x8 = 80 room + 8x10 = 80 kitchen =160 sq feet	A semi-pucca one room kitchen house with roof made up of asbestoses. Individual toilets and bathroom of 20 sq feet each respectively on the outside.
No	3,000 including electricity + 305 for gas/fuel =3,305	10x8 = 80 room + 6x10 = 60 kitchen =140 sq feet	A semi-pucca one room kitchen house with roof made up of asbestoses. Individual toilets and bathroom of 20 sq feet each respectively on the outside.
Zone D			
No	1,500 + 100 for electricity + 345 for gas/fuel =1,945	11x10 = 110 room + 6x10 = 60 kitchen =160 sq feet	A semi-pucca house with roof made up of tiles. Shared toilet (1 in 2 units), shared bathroom (1 in 3 units).
No	1,500 + 105 for electricity + 335 for gas/fuel =1,940	10x10=100 room + 6x10=60 kitchen =160 sq feet	A pucca house with roof made of concrete. Individual toilets and bathroom of 20 sq feet each respectively on the outside.
No	1,700 + 100 for electricity + 125 for gas/fuel =1,925	10x10=100 room + 6x10 = 60 kitchen +4x6=24 living room =184 sq feet	A semi-pucca house with roof tiles. Individual toilets and bathroom of 16 sq feet each respectively on the outside. This house has one bed room, living room and kitchen. Toilet/ bathroom located at the end of row house.
No	2,000 + 20 for electricity + 120 for gas/fuel =2,140	11x10=110 room + 3x10=30 kitchen =140 sq feet	A semi-pucca house with roof made up of asbestoses sheet. Individual toilets and bathroom of 25 sq feet each respectively on the outside at the end of row house.
No	2,000 + 75 for electricity + 160 for gas/fuel =2,235	10x10=100 room + 6x10=60 kitchen =160 sq feet	A semi-pucca house with roof made up of tiles. Individual toilets and bathroom of 16 sq feet each respectively on the outside at the end of the row house.
No	2,000 + 150 for electricity + 125 for gas/fuel =2,275	11x10=110 + 6x10=60 + 4x10 kitchen =210 sq feet	A semi-pucca house (1 bhk) with tiles for roof. Individual toilets and bathroom of 25 sq feet each respectively outside the house. Toilet/ bathroom located at the end of row house.

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Condition and cost of garment worker houses collected through worker interviews			
Acceptable?	**Rent (Rs.) + utilities (Rs.)**	**Size & rooms**	**Comments**
No	2,000 + 100 electricity + 350 for gas/fuel =2,450	10x10=100 room + 6x10=60 kitchen =160 sq feet	A semi-pucca house with roof tiles. Individual toilets and bathroom of 20 sq feet each respectively on the outside at the end of the row house. It has one room and kitchen. A 7ft high wall was made to demarcate the space into a kitchen and living area.
No	2,000 + 100 for electricity + 345 for gas/fuel =2,445	10x10=100 room + 6x10=60kitchen =160 sq feet	A semi-pucca house with roof made of tiles. Individual toilets and bathroom of 16 sq feet each respectively on the outside
Yes	2,500 + 100 for electricity + 300 for gas/fuel =2,900	23x15=325 room + 15x15=225 room + 8x8 = 64 kitchen =634 sq feet	A pucca house (1 bhk) with a concrete ceiling. It has two rooms and a separate kitchen. Individual toilets and bathroom of 22.5 sq feet each respectively on the outside the house.
No	Owned + 200 for electricity + 75 for gas/fuel	10x10=100 room + 8x10=80 kitchen =180 sq feet	A semi-pucca house with roof made of asbestoses sheets and owned by the worker. Individual toilets and bathroom of 16 sq feet each respectively on the outside. A 7ft high wall was made to separate out the kitchen and living area.

Notes: bhk indicates bedroom, hall and kitchen.

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Table C: Condition and cost of decent houses observed away from factories

Condition and cost of decent houses observed away from factories			
Acceptable standard?	**Rent (Rs.)**	**Room sizes**	**Comments**
No	3,000	10x13 = 130 sq feet room 10x10 = 100sq feet hall 8x8 = 64 sq feet kitchen 5x4 = 20 sq feet toilet 5x4 =20 sq feet bathroom 334 sq feet	The semi-pucca house with roof made of red tiles was ventilated (windows) with good finishing and privacy in the rooms. The toilet was individual on the outside of the house. Too small with 334 sq feet.
Yes	3,500	12x15 = 180 sq feet room 10x12= 120 sq feet hall 5x8= 40 sq feet kitchen 10x5 = 50 sq feet attached toilet 390 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet was inside the house.
Yes	3,500	10x12 =120 sq feet room 1 6x8= 48 sq feet room 2 10x8 = 80 sq feet hall 10x8 = 80 sq feet kitchen 5x8 = 40 sq feet toilet attached 368 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet was inside the house.
Yes	3,500	11x15 = 165 sq feet room 10x10 = 100 sq feet hall 8x10 = 80 sq feet kitchen 345 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet and bathrooms were separate and inside the house.
Yes	3,500	11x13 = 143 sq feet room 10x10 = 100 sq feet hall 5x10 = 50 sq feet kitchen 5x10 = 50 sq feet toilet attached 343 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet and bathrooms were attached inside the house.
Yes	3,800	9x11.6 = 104.4 sq feet room 16.5x11.6 = 191.4 sq feet hall 6.5x7 = 45.5 sq feet kitchen 341 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet was individual on the outside of the house. It was a standalone house, i.e. Individual house.
Yes	4,000	11x10 = 110 sq feet room 1 10x8= 80 sq feet room 2 10x16 = 160 sq feet hall 11x8 = 88 sq feet kitchen 4x8 = 48 sq feet toilet attached 406 sq feet	Family of three members. House is depicted in figure 2. It was a pucca house with attached toilet. Good ventilation through windows and had floor tiles.

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Yes	5,000	14x16 = 224 sq feet room 1 10x14 = 140 sq feet hall 8x8 = 64 sq feet kitchen 428 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet and bathrooms were separate and inside the house.
Yes	6,000	10x12= 120 sq feet room 1 10x11= 110 sq feet room 2 10x11 = 110 sq feet hall 10x8 = 80 sq feet kitchen 8.4x6 = 50.4 sq feet toilet attached 470 sq feet	The pucca house was ventilated (windows) with good finishing and privacy in the rooms. The toilet and bathrooms were attached and inside the house.

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