Journal of Fiber Bioengineering and Informatics 15:1 (2022) 1–15
Cite as: P. Sirilertsuwan et al.
doi:10.3993/jfbim00377

How Living Wages Influence Apparel Costs and Comparative Advantages among Different Multi-tier Supply Chains ⋆

Petchprakai Sirilertsuwan [a,b,c,∗], Sébastien Thomassey [b], Xianyi Zeng [b], Yan Chen [a]

[a] *Soochow University, 1 Shizi, Suzhou, Jiangsu, 215006, China*

[b] *Univ. Lille, ENSAIT, ULR 2461 - GEMTEX - Génie et Matériaux Textiles, F-59000 Lille, France*

[c] *LouRIM, UCLouvain, Place des Doyens 1, Ottignies-Louvain-la-Neuve, 1348, Belgium*

Abstract

This paper aims to reveal how paying manufacturing workers with living wages instead of minimum wages increases business costs and alters comparative advantages among 98 multi-tier supply chains, as well as to find the level of wage increase to make the lowest cost supply chain lose its competitiveness. Both scenario and sensitivity analyses are employed. The findings show that paying living wages neither significantly increases business costs nor influences comparative advantages of the 98 supply chains, implying no manufacturing relocation and unemployment. Furthermore, the findings present the importance of proximity between materials and product manufacturing locations. Lastly, governments can potentially create their location competitiveness supporting low transportation costs and port fees, and incentivizing materials manufacturing to attract other manufacturing activities.

Keywords: Global Value Chain; Manufacturing Location Decisions; Social Sustainability; Sustainable Sourcing; Sustainable Supply Network Design; Sweatshop Labour

1 Introduction

Sustainable Development Goals (SDGs) create awareness for organizations to tackle problems on poverty, climate change, and social and economic inequality. Sustainable development targets "building an inclusive, sustainable and resilient future for people and planet" [1]. Some businesses have made efforts to achieve SDGs by implementing corporate social responsibility programs, social compliance, environmental initiatives, and diversity and inclusion programs for employing

⋆Project supported by Sustainable Management and Design for Textiles (SMDTex) joint doctorate program under the Erasmus Mundus framework, which is funded by the European Commission (no. 2016-1353/001-001-EMJD for Edition 2016) and the China Scholarship Council (no. 2019CEU021859).

∗Corresponding author.
Email address: s.petchprakai@gmail.com (Petchprakai Sirilertsuwan).

Mar. 2022

and sourcing products from women, disabled individuals, minorities, veterans, and LGBT members. However, they have not fully achieved sustainability and inclusiveness in their supply chains because factory workers gain wages at a rate lower than the rise in living costs.

Few businesses succeed in paying living wages to their or their suppliers' factories [2]. Though the Living Wage Foundation website states there are 4,759 accredited living wage employers in United Kingdom (UK) from public, private, and voluntary sectors, the paid living wages are mostly to non-manufacturing workers in the UK. Manufacturing workers, especially in developing countries, still earn below living costs even though they perform adequately and work overtime in order to meet production demand [3]. The reason for ignoring payment of living wages to manufacturing workers could be from potentially increased costs, which could lead to decreased product demand [4] and negative effects on workers from the potential of manufacturing relocation, as shown in a discussion of sweatshop regulations to ensure certain working conditions and minimum wages [5]. However, a few existing studies on increasing wages for manufacturing workers show that increased costs from the living wage payments do not seriously affect businesses' bottom lines [6], and can be absorbed by increasing product prices because consumers, specifically in US, are willing to pay [7]. As a result, our research questions (RQs) are as follows:

RQ1. How much will living wages cost companies compared to minimum wages, in particular in labour-intensive industries? This will show possibilities for companies to manage the increased cost to help increase social sustainability at factories.

RQ2. Will the increased cost change comparative advantages among different multi-tier supply chains which consist of different materials and product manufacturing locations? This will show the potential of manufacturing relocation.

In this paper, we choose the textile and clothing industry as an example of a labour-intensive industry in order to show the influences of living wages on multi-tier supply chains. This paper differentiates itself from aforementioned studies by highlighting how various multi-tier supply chains are influenced by living wage payments with respect to increased costs and comparative advantage.

We firstly find increased garment landed costs from paying living wages instead of minimum wages to garment manufacturing workers. Landed costs include all incurred costs in order to get products delivered to warehouses. We model different supply chain scenarios by varying manufacturing locations of raw materials, in-process materials, and final products. Secondly, we investigate how living wages change manufacturing locations in the textile and clothing supply chain if the company objective is to minimize landed cost. Lastly, we perform sensitivity analysis to find which increased levels of living wages in developing countries will no longer yield cost advantage and may cause manufacturing movement to other countries. The results help both businesses and local governments recognize how to upgrade their products, and help countries to have other competitive advantages aside from low cost.

2 Background

2.1 Living Wages History and Current Implementation

The living wage concept can be tracked back to the 18th century, through Adam Smith's argument that labourers should receive fair payment [8]. In 1898, Samuel Gompers, the AFL president,