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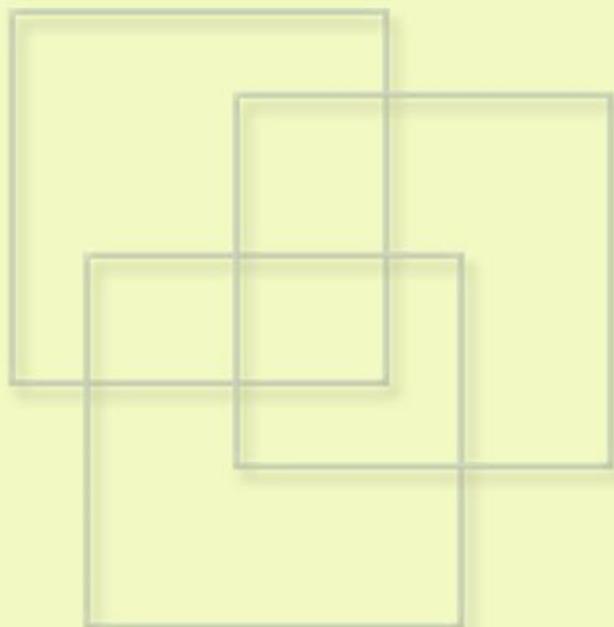


ILO Asia-Pacific Working Paper Series

Securing the competitiveness of Asia's garment sector: A framework for enhancing factory-level productivity

Sara Andersson, Alix Machiels and Charles Bodwell

December 2019



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Decent Work in the Garment Sector Supply Chains in Asia
Regional Office for Asia and the Pacific

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Preface

The International Labour Organization (ILO) is devoted to advancing opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity. It promotes rights at work, decent employment opportunities, more effective social protection and improved dialogue with respect to work-related issues. The ILO Asia-Pacific Working Paper Series, of which this paper is a part, is designed to improve the understanding of decent work issues, stimulate discussion and encourage knowledge sharing and further research that will promote decent work in Asia and the Pacific.

Asia has been described as the garment factory of the world. This region exports garments, textiles and footwear (GTF) valued at US\$668 billion annually – 63.7 per cent of global exports. Today, the garment sector employs more than 43 million workers, and has been a key driver of economic and social development in many of the region's garment-exporting countries. Nevertheless, in many contexts, decent work deficits and poor working conditions persist, and it is evident that if garment exporters in Asia are to adjust successfully and sustainably to a new competitive landscape, they must strive to promote decent work and find new drivers of productivity and competitiveness.

The following paper is an attempt to review and consider elements of support that are systematic, broad-based and respond to the needs of both factories and workers, ensuring that no one in the sector is left behind. The goal is to better understand how development efforts could be both of greater scale and increased sustainability, both crucial elements of any attempt to reach out to the harder to reach, but more in need, segments of global garment supply chains.

Graeme Buckley
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and Lao People's Democratic Republic

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Abstract

This paper establishes the need for productivity interventions in the Asian ready-made garment sector. It argues the rationale for addressing factory productivity as part of a wider strategy including an integrated approach to securing the sector's future competitiveness and long-term sustainability. By outlining how efficiency-driven productivity improvements can enable garment factories to respond to a changing competitive landscape and current trends, including social and environmental concerns among international buyers and technological advances in the sector, the authors make a case for why development actors should also consider productivity when designing new programmes.

The paper further proposes a conceptual framework to assist in the design of future interventions targeting productivity improvements, one that aims to respond to the identified needs of Asian garment factories. It proposes that successful interventions in the sector should be grounded in worker engagement and workplace cooperation, and address the productivity of ready-made garment factories through a systematic, broad-based improvement of processes.

Key words: garment, productivity, Asia, employment, working conditions, global supply chains (GSCs).

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Responsibility for opinions expressed in articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them, or of any products, processes or geographical designations mentioned.

Acronyms

ASEAN	Association of Southeast Asian Nations
BBW	Benefits for Business and Workers (programme)
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BIF	Business Innovation Facility
CCC	Clean Clothes Campaign
CMT	cut, make, trim
COMPAS	Centre on Migration, Policy and Society (Oxford)
CPO	chief purchasing officer
CSR	corporate social responsibility
DFID	Department for International Development (UK)
FWF	Fair Wear Foundation
GSC	global supply chain
GTF	garments, textiles, and footwear
IFC	International Finance Corporation
ILO	International Labour Organization
NBER	National Bureau of Economic Research
OSH	occupational safety and health
P.A.C.E.	Personal Advancement and Career Enhancement (programme)
PICC	Performance Improvement Consultative Committee
RMG	ready-made garment
SITC	Standard International Trade Classification
SME	small and medium-sized enterprises
TCF	textile, clothing and footwear (adjectival); textiles, clothing and footwear (noun)
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
WIL	work integrated learning

1. Introduction

Global supply chains have emerged as the backbone of a worldwide economic system, precipitating the rise of the garment sector as a key driver of jobs and prosperity across Asia. Between 1999 and 2018, Asian garment, textile and footwear (GTF) exports grew at an average annual rate of 6.8 per cent. In 2018, Asia exported GTF to a value of US\$668 billion, accounting for approximately 63.7 per cent of global exports.¹ Today, the garment industry in Asia employs more than 43 million garment workers, and is key to the economic and social development in many of the region's garment-exporting countries (ILO, 2017a).

Historically strong growth figures may suggest that the garment sector in Asia will continue to flourish. In recent years, however, the sector has arguably reached a critical juncture, one where its outlook will be determined by how capable Asian countries prove in finding new drivers of competitiveness and adjusting to a new competitive landscape (Chang et al., 2016; Huynh, 2015; ILO, 2019a; ILO, 2017b). This includes responding and adapting to rising wages and such technological trends as automation and artificial intelligence, as well as to changes in the buying behaviour of US and European firms, which increasingly consider non-wage-related factors in their sourcing decisions, and which require more flexibility in their production demands.

This paper suggests that further efforts are required, in many Asian garment-exporting countries, to enhance efficiency as a means to improving factory productivity levels. More specifically, the paper contends that, grounded in worker engagement and workplace cooperation, garment factory productivity² should be addressed through the systematic, broad-based improvement of factory processes. This can contribute to both factory growth and profitability. At the same time – by being part of a solution to ensure decent work opportunities, and by enabling factories to better respond to the shifting priorities of international buyers and to the current technological transformation in the sector – this can help countries to secure this sector's future competitiveness and long-term sustainability (Chang et al., 2016).

To assist in the design of future interventions targeting productivity improvements, the paper also establishes a conceptual framework that aims to respond to the identified needs of targeted Asian garment factories.

Chapter 2 discusses key characteristics of the Asian garment sector, as well as challenges presented by a changing competitive landscape. Chapter 3 looks at the low productivity levels in the Asian garment sector, and makes a case for why addressing this issue is essential for ensuring garment-exporting countries' future competitiveness. Chapter 4 introduces a conceptual framework for designing interventions to achieve factory-level productivity improvements. Chapter 5, finally, presents the conclusions, including recommendations regarding how to design future development interventions to better support Asian garment factories.

¹ Author's own estimates, from United Nations Conference on Trade and Development (UNCTAD): UNCTADstat Database, <https://unctad.org/en/Pages/Statistics.aspx/> [accessed 1 Dec. 2019]. Standard International Trade Classification (SITC) Rev. 4 groups 26, 65, 84 and 85.

² For the purpose of this paper, we are limiting our scope to ready-made garment manufacturers operating in the final assembly stages, commonly referred to as cut, make, trim (CMT) factories.

2. The Asian garment sector

2.1 Sector overview

2.1.1 Importance for regional employment and economic growth

Asia is strongly positioned as the world's number-one garment exporting region. In 2018, the region exported GTF goods to a value of \$668 billion, accounting for approximately 63.7 per cent of global exports. This dominant position has enabled GTF exports from the region to grow by an annual average of 6.8 per cent from 1999 to 2018. The region's strong growth initially took off in the People's Republic of China, which still accounts for about 36 per cent of garment exports.³ In more recent years rising labour costs and demographic changes in China have led the sector to expand in neighbouring countries (ILO, 2015). Today, Asia hosts three of the world's top five garment exporters – namely China, the People's Republic of Bangladesh and the Socialist Republic of Viet Nam – and 11 of the top fifteen (ILO, 2017c).

Figure 1: Total export value (\$, thousands) and percentage of total global garment export, top garment-exporting countries in Asia

Country	Value (US\$)	Share of total global exports (%)
China (including Hong Kong)	191 347 754.03	36.36
Bangladesh	32 344 117.30	6.15
Viet Nam	29 962 718.42	5.69
India	16 552 065.76	3.14
Cambodia	8 835 854.49	1.68
Indonesia	8 927 924.75	1.70
Pakistan	5 941 511.29	1.13
Malaysia	5 790 973.42	1.10
Sri Lanka	5 515 885.85	1.05
Myanmar	4 129 723.85	0.78
Thailand	3 829 703.06	0.73

Source: Author's own estimates, see footnote 3.

For several Asian economies, the garment sector comprises a significant portion of the annual national exports. Notably, in 2014 the garment and footwear sector's share of total merchandise exports in Bangladesh and the Kingdom of Cambodia was 89.2 per cent and 77.4 per cent, respectively (ILO, 2017c). Other garment-exporting countries have already shifted into higher value-added sectors. For example, from 1995 to 2014 Chinese garment exports fell from roughly 30 to 15 per cent of total merchandise exports (ILO, 2016). In this period, China was also upgrading its garment sector to focus more on higher quality, higher value-added garments (Hancock, 2019). This supports the general view of the garment sector's importance for industrial upgrading as well as a first entry point for countries

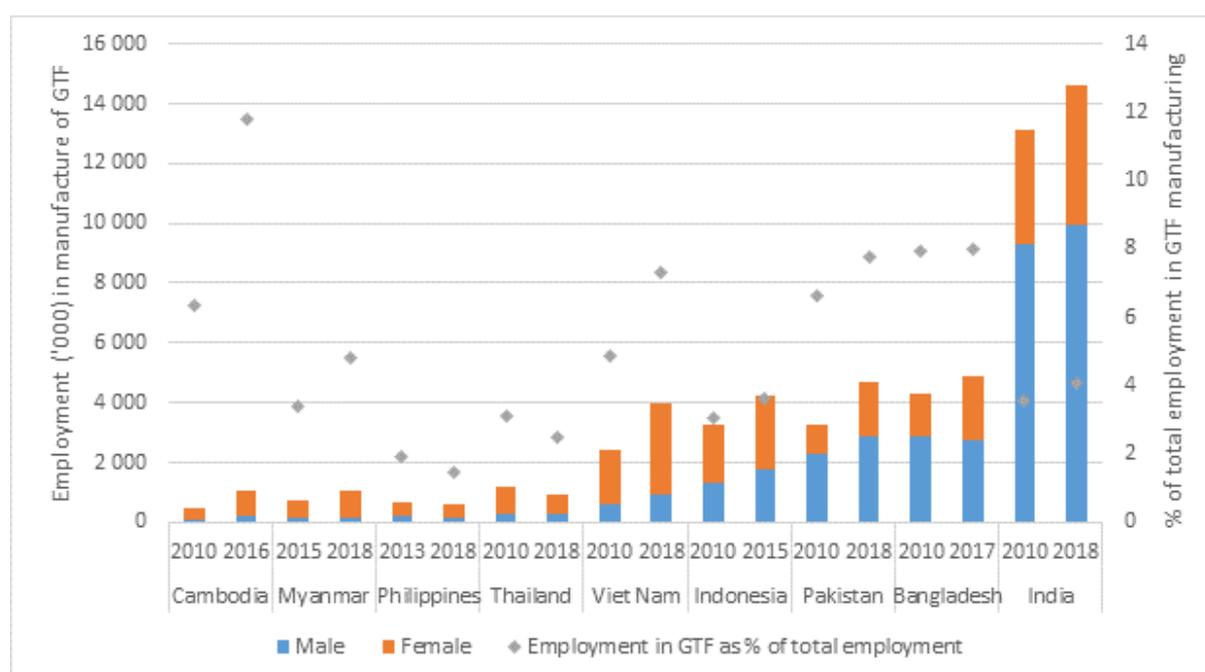
³ Author's own estimates, from United Nations Conference on Trade and Development (UNCTAD): UNCTADstat Database, <https://unctad.org/en/Pages/Statistics.aspx/> [accessed 13 Dec. 2019]. Standard International Trade Classification (SITC) Rev. 4 group 84.

attempting to transition from primary reliance on the informal agricultural sector to connecting with global supply chains and international markets (ILO, 2019a; Chang et al., 2016).

Today, more than 43 million workers in Asia are employed in the highly labour-intensive garment sector.⁴ The sector has generated a surge of employment opportunities for low-skilled workers in the region, many of whom did not previously have access to formal manufacturing jobs with regular wages. For example, about four in five apparel industry jobs in Bangladesh, Cambodia, the Republic of Indonesia and Viet Nam are now held by salaried employees. In the Islamic Republic of Pakistan, the Republic of the Philippines and the Kingdom of Thailand, the ratio is more than three in five. By contrast, the garment sector in the Republic of India and the Lao People’s Democratic Republic is for the most part informal, and most workers are home-based subcontractors typically paid on a piece-rate basis (ILO, 2017a).

Importantly, the rise of garment production in Asia has also contributed to the expansion of labour market opportunities for women. The share of female workers in the sector ranges from 44 per cent in Pakistan, to about 90 per cent in the Republic of the Union of Myanmar and Lao PDR. In Cambodia, the Philippines, Thailand, and Viet Nam, the share of female workers in the garment sector also exceeds 70 per cent (Stotz and Kane, 2015).

Figure 2: Total employment (thousands) in manufacture of GTF by gender and percentage of total employment in GTF manufacturing, selected Asian countries, latest available year



Source: ILO calculations based on ILOSTAT table “Employment by sex and economic activity – ISIC level 2”.

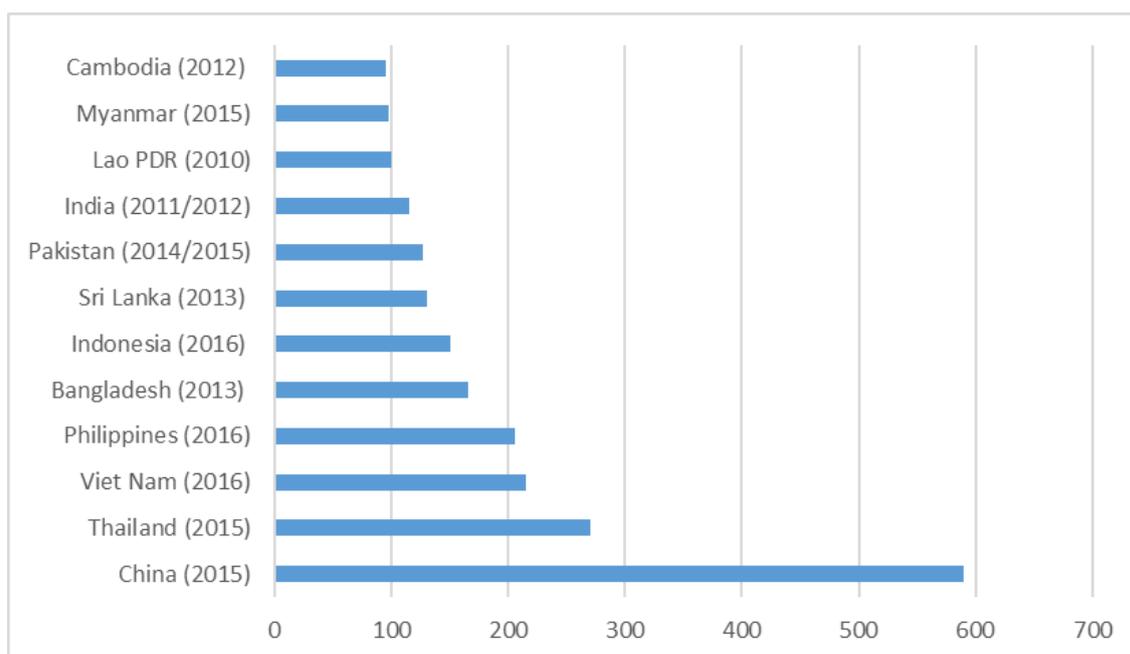
2.1.2 Decent work deficits

While the garment sector in Asia has contributed significantly to the economic and social development of the region (ILO, 2019a; ILO, 2017c), it is important to note that the sector is marked by a number of serious decent work deficits and labour standards violations. For example, while wages in the region are slowly rising, average earnings still amount to less than \$200 in several countries, which is often

⁴ Available data also indicate that the sector continues to expand in most countries, see e.g. ILO, 2017a.

insufficient for workers to provide for their families (ILO, 2017a). Minimum wages remain very low, especially in Bangladesh and the Democratic Socialist Republic of Sri Lanka, where statutory minimum wages in the garment sector are \$71 and \$66, respectively, and the industry often fails to comply with existing minimum wage legislation (ILO, 2016a). Low wages contribute to excessive overtime and long working hours in many garment producing countries. Indeed, average (mean) working hours in the GTF sector in Asia has been found to be close to 50 hours per week (ILO, 2018).

Figure 3: Average nominal monthly wages in GTF (\$), selected Asian countries, latest available year



Source: ILO, 2017a.

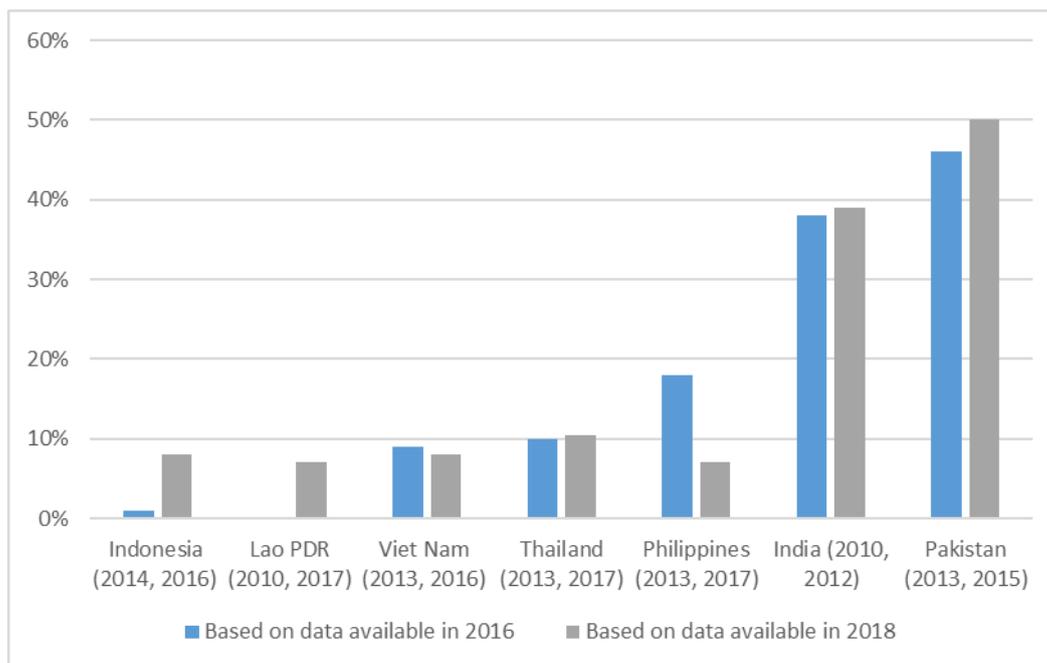
In addition, the garment industry often fails to adequately consider occupational safety and health (OSH)-related issues. A report on opportunities and risks in the supply chains of textile and apparel companies estimated that, between 2006 and 2014, at least 1,500 people died and 3,000 people were injured in fires or collapsed buildings in garment and textile factories (Bank J. Safra Sarasin, 2014). The handling of chemical products constitutes an additional threat to workers' health, as do repetitive strain injuries from repeated spinning and cutting, poor machine safety levels, and exposure to steam and hot fluids during processing and finishing operations (ILO, 2017c).

In addition to those issues, women working in the sector face gender-specific barriers. Female garment workers are often subject to discrimination, for example in terms of consistently lower earnings than men. According to an ILO research note from 2017, average monthly wages for men were higher than that for women in all 12 countries surveyed. The gender pay gap was highest in Pakistan, at 66.5 per cent, and lowest in Bangladesh, at 1.1 per cent (ILO, 2017a). Furthermore, women typically work on the factory floor in jobs such as sewing or weaving, while men are employed mainly in more technical or managerial positions (Naeem and Woodruff, 2015).⁵ This also makes women more likely than men to be employed in an occupation at high risk of automation. Women also have less access to training and education – and thus have less chances of getting promoted – and also face higher risks of

⁵ This survey by the International Growth Centre (2015) from Bangladesh, for example, found that four out of every five production-line workers were female, while just over 1 in 20 supervisors was a woman.

encountering gender-based violence and sexual harassment. According to research conducted for the ILO’s Better Work programme, the issue of sexual harassment is a significant concern for workers (ILO, 2019c). For example, roughly four out of every five workers in a factory in Indonesia reported that sexual harassment or sexual touching was a concern. Similarly, a study in Cambodia conducted by CARE indicated that nearly one in three women garment-factory workers had reported sexual harassment in the workplace over the previous 12 months (CARE, 2017).

Figure 4: Gender pay gaps in GTF, adjusted, earlier and later year, selected Asian countries



Source: ILO, 2018.

Note: Adjusted gap controls for all independent variables including sex, age, marital status, education, experience, sub-national area, economic sector and occupation. A positive value indicates higher earnings for men relative to women. India figures are based on the natural log of estimated daily earnings.

2.2 A changing competitive landscape

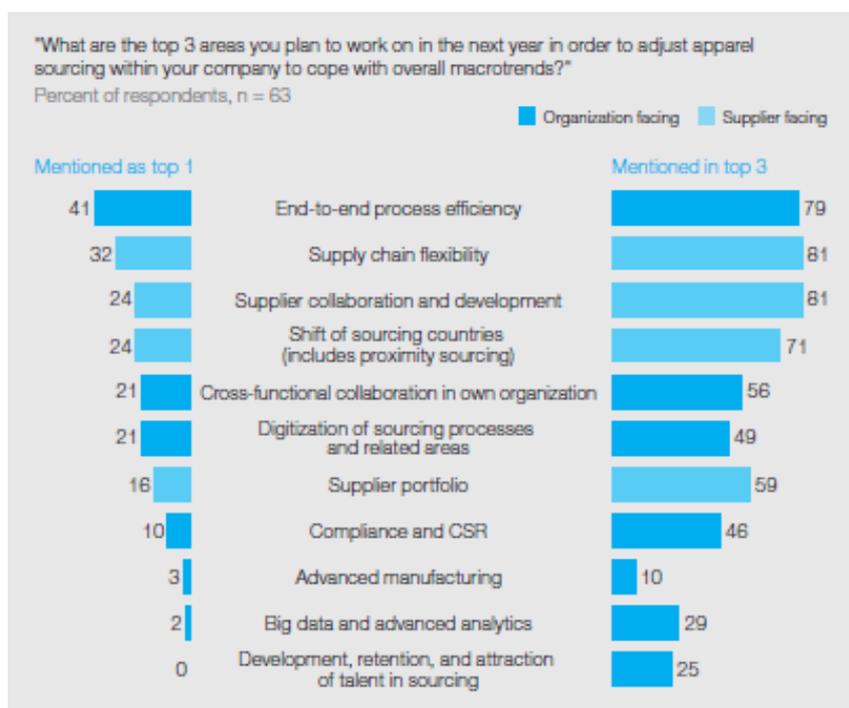
2.2.1 Changing buyer sourcing behaviour

The current era of change in the garment sector is characterized by continued volatility and complexity, as well as by an increasingly competitive landscape. Several factors contribute to this. Firstly, while in the past international buyers primarily prioritized low labour costs in their sourcing decisions, other factors have increasingly become more significant. For example, it has become more important that international buyers ensure their supply chains comply with social and environmental standards, as not doing so would invite significant reputational risk. This became apparent in 2013, for instance, when the international community turned its attention to Bangladesh following the Rana Plaza building collapse, which cost 1,134 garment workers their lives. In the aftermath, international brands sourcing from Bangladesh were faced with considerable criticism and pressure, and responded by initiating and/or supporting a number of multi-stakeholder initiatives to advance decent work and improve workplace safety to ensure that such accidents did not occur again.

One ILO study further suggested that increasing demand for sustainability from governments, civil society, and consumers has encouraged buyers to recognize the need to take precautions to protect the environment, in part by encouraging environmentally sustainable production processes (ILO, 2019a). The patent effects of climate change in Asian garment-exporting countries is also expected to impact sourcing behaviour among buyers. For example, flooding in Bangladesh has already caused “significant disruption and economic losses to manufacturing firms” and is expected to continue to negatively affect the sector (ILO, 2019a). Rising temperatures, particularly in the least developed countries most affected by climate change, is expected to severely impact OSH as well as productivity. One ILO study suggests that Asia’s garment industry must respond to this new buyer sourcing behaviour by “developing a new model of competitiveness that is sustainable” (Huynh, 2015, p.1). This includes addressing the root causes of the industry’s poor working conditions, including hazardous and unhealthy workplaces.

Productivity, efficiency and reliability of supply are among additional non-wage-related factors that influence today’s buyers in their sourcing decisions. A McKinsey survey of apparel industry chief purchasing officers concluded that “successful apparel-sourcing organizations of the future will not succeed on sourcing cost price alone” (Berg et al., 2017, p.13). According to the survey, completed by 63 chief purchasing officers responsible for a total sourcing value of more than \$137 billion, labour costs exert a decreasing influence on sourcing decisions – it was ranked three out of five in terms of importance in the 2017 survey, down by 0.5 points from 3.5 in 2015.⁶ Instead, end-to-end process efficiency has become the most important factor influencing international buyers’ sourcing strategies, alongside supply chain flexibility and supplier collaboration and development (Berg et al., 2017). This puts pressure on factories to produce garments faster and demonstrate agility in the production process.

Figure 5: Responses to macroeconomic trends and shifting demand: Key levers in apparel sourcing



Source: McKinsey Apparel CPO Survey 2017.

⁶ While this study demonstrates that labour costs are becoming less important to international buyers, it is important to note that the data collected is self-reported and that sourcing patterns suggest labour cost remains a key concern for many buyers.

2.2.2 Technological advances and the risk of reshoring

Given ongoing shifts in the competitive landscape, technological advance and innovation in areas such as automation and robotics also have the potential to disrupt the garment sector. According to an ILO study from 2016, “Significant shares of TCF workers in ASEAN are at high risk of automation, from 64 per cent in Indonesia, to 86 per cent in Viet Nam and 88 per cent in Cambodia” (Chang, Rynhart, and Huynh, 2016, p. xxii). This makes it the most vulnerable sector in terms of potentially extensive technological displacement of workers. The same study suggests that imminent advances in robotics and automation will in turn facilitate growth in reshoring or nearshoring,⁷ with developed countries better positioned to invest in associated machinery and new technology.

Others have taken a more cautious position, and contend it is likely that low-cost production in developing countries will coexist for some time with an increase of robotics-assisted and automated production in middle- and high-income countries (Kucera, forthcoming). Recognizing that new technologies can have numerous potential benefits, Kucera argues that it is not yet certain whether they can overcome developing countries’ competitive advantage in terms of lower labour and production costs.

Regardless of when or exactly how this technological disruption will occur, garment-producing countries in Asia should recognize that there is significant risk that advances in technology could have a major impact on their garment sectors, with increasingly competitive pressures and the potential for drastic employment and production reductions. To avoid such undesirable outcomes, these countries need to respond with appropriate measures. More specifically, efforts should be directed towards improving factory performance, at the same time providing the next generation of workers with appropriate technical qualifications and expertise, thereby promoting their capacity to transfer to more high-tech production over time. This could ensure that the garment sector in these countries remains competitive, and could also help facilitate the growth of other higher-value-added sectors in these countries as well as economic diversification, which in turn could mitigate anticipated employment reductions in the sector.

⁷ See also e.g. De Backer et al., 2016.

3. Improving productivity to maintain competitiveness

This paper has so far introduced a sector that is highly important for the region in terms of contributing to economic growth and employment opportunities, albeit one often characterized by poor working conditions and currently facing a changing competitive landscape globally. This section will focus more specifically on productivity levels in the Asian ready-made garment (RMG) sector and make the case for why improvements in this area should be a priority.

3.1 Defining productivity

Productivity is commonly defined as the ratio between output and input resources. As such, it provides a measure of how efficiently inputs (resources) are used to produce outputs. The literature generally distinguishes between four types of inputs: human resources (number of workers or hours worked); material resources (raw materials used for production); capital resources (costs of both fixed and working capital); and energy resources (electricity and water consumption).

Factory productivity can be improved through greater production efficiency, for example by developing worker skills or by upgrading machinery, improving the quality of products, or by producing higher value-added products. If a garment factory achieves a productivity increase, it means that the factory has been able to produce more or better garments, hence estimated to a higher value, for the same inputs.

Firm productivity is typically measured as a ratio of the total inputs and total outputs of the firm over a certain period (Schreyer, 2001). This is typically referred to as “total factor productivity”. One can also calculate so-called partial productivity measures by dividing the total factory output by one or more specific type of input. The most commonly used partial productivity measure in the garment sector is labour productivity, how productively labour is used to generate output. This can be measured, e.g. by considering output per hours worked or output per worker (Schreyer, 2001; Kumar et al., 2014).⁸

Higher labour productivity is usually taken to be achievable through either higher work intensity or higher work efficiency. Higher intensity implies longer working hours or overtime in order for production volume to increase – if you measure labour productivity as output per worker. Besides being harmful to worker health and well-being, such practices place the responsibility of increasing productivity on the workers’ shoulders, in turn potentially undermining management incentives to invest in improved factory processes. Higher work efficiency, on the other hand, allows production volume to increase without the need for workers to put in longer working hours or overtime. For a garment factory to stay competitive over time, it is critical to choose efficiency over intensity in order to stay profitable while also maintaining or achieving decent working conditions (Huynh, 2015).

⁸ The literature on productivity in the garment sector tends to focus on labour productivity over other partial productivities, sometimes even as the sole operationalization of firm productivity. This stems from several factors, including ease of measurement as well as the pressure exerted on labour costs. However, it should be noted that labour productivity is not to be interpreted as the productivity of individual workers, as it also reflects the joint influence of factors such as capacity utilization, capital efficiency and organizational efficiency.

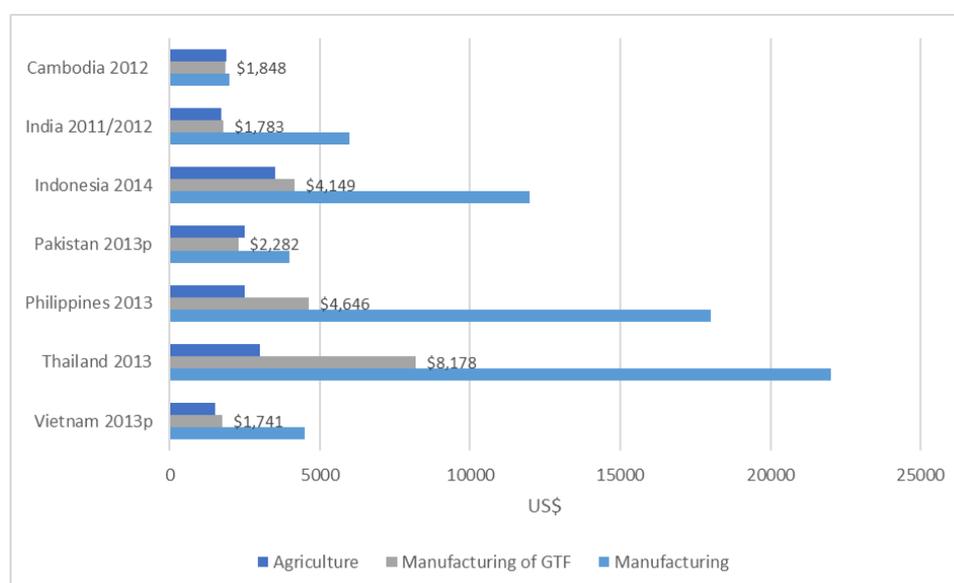
3.2 Productivity in the Asian garment sector

Productivity remains rather low in many national garment sectors in Asia (ILO, 2016a). However, it is important to recognize that substantial productivity differences are apparent between major Asian garment-exporting countries, between factories in the same country, and even across production lines within one and the same garment factory (Huynh, 2015; Woodruff et al., 2014; Frederick and Staritz, 2012). In relative terms, the more mature Asian garment sectors, especially in China, also perform better than the garment sectors in countries such as the Federal Democratic Republic of Ethiopia or the Republic of Kenya and, indeed, often establish benchmarks in terms of efficiency.

Still, previous studies demonstrate that many Asian garment factories underperform when it comes to productivity levels (ILO, 2016a; ILO, 2015; Huynh, 2015). For example, labour productivity in the garment sector in several Asian countries is a fraction of that found in the overall manufacturing industry in these countries.⁹ Labour productivity in overall manufacturing is around 3.3 and 2.6 times greater in India and Thailand, respectively, than that found in the GTF sectors. In some countries, Cambodia among them, labour productivity in the GTF sector is lower than in the largely informal and inefficient agriculture sector, while it is only about 10 per cent higher in Bangladesh and India. Differences between major Asian garment-exporting countries are also substantial. For example, Viet Nam’s labour productivity for the GTF sector is only 20 per cent that of Thailand’s (Huynh, 2015). China and India, to varying degrees, have created environments for their garment industries to upgrade to more higher value-added products (Frederick and Staritz, 2012).

This can be explained in part by how productivity for a long time was not considered an issue among many garment-exporting countries in the region, since they relied on supplies of low-cost labour while competing mainly in the lower assembly segments of the value chain. Today, productivity is becoming more important in many garment-exporting countries in the region, since they increasingly recognize it as a factor in competitiveness (Salze-Lozach, 2010).¹⁰

Figure 6: Labour productivity in selected industries in Asia (current \$), latest available year



Source: Huynh, 2015.

⁹ We refer to labour productivity as a measurement, since this is the most often available measurement in the literature on productivity in the GTF sector. In this particular case, labour productivity is defined as gross value added in current prices per employed persons, with official nominal exchange rates applied.

¹⁰ In this study by the Asia Foundation, for example, “productivity was identified overwhelmingly as the most important factor for ensuring Bangladesh’s competitiveness” (p. 6).

While productivity in the Asian garment sector as a whole has improved over time, for the most part this has not stemmed from in-factory productivity gains. Instead, rising productivity rates are the result of more productive firms replacing less productive ones, i.e. firm turnover (Asuyama et al., 2013). In Cambodia, for instance, labour productivity in the garment and footwear sector was 30.1 per cent higher in 2015 than in 2003 (ILO, 2016c).¹¹ The country's garment sector, which continued to grow at the end of the Multi-Fibre Agreement (Ernst et al., 2005), saw 50 per cent of its factories shut down between 2003 and 2009 to be replaced by twice their number. The surviving firms were those which had been successful in improving their productivity levels, whereas those that did not were forced to shut down. Indeed, narrow profit margins, lack of control over material costs, and rising labour costs, as well as stagnant garment prices and buyers' demands for them to comply with environmental and labour standards, resulted in many factories across Asia being forced to close (Fukunishi, 2014). This should have broadcast a strong market signal to factories to invest more in productivity. For various reasons, however, in many cases this investment has yet to be made.

Several factors, each highly dependent on context, may be proposed to explain low factory productivity levels in Asian garment exporting countries:

- **Lack of adequate operator skills.** Previous research has pointed out both skills inadequacies among workers and an overall lack of skills training (Hearle, 2016; Hurst et al., 2011; Chang et al., 2016). Low retention levels in the garment sector leave factories unwilling to invest in worker training (Hearle, 2016; Hurst et al., 2011; Chang et al., 2016). In Cambodia for example, training was found to be very weak. Factories surveyed had neither training budgets nor sufficient programmes, and where they did exist, programmes were based on experience rather than established principles (USAID, 2005). One study on how to achieve productivity improvements in Indian garment factories found that in-house operator training programmes are essential for factories to improve worker skills (Bheda et al., 2003).
- **Lack of adequate management skills.** Studies have also pointed to gaps in terms of availability of skilled managers (Hearle, 2016; Chang et al., 2016; USAID, 2005). These skills gaps are apparent both at middle-management (USAID, 2005; Woodruff, 2014; KfW DEG, 2016) and supervisory (Macchiavello et al., 2014; Babbit, 2016) levels. According to Hearle (2016), managers often lack an understanding of how controls, planning and engineering can influence productivity levels. A survey conducted in Bangladesh showed that only 20 per cent of supervisors had received formal supervisory training (Woodruff, 2014). In Cambodia, USAID (2009) found that improvements in productivity of 15 to 20 per cent could be achieved through the introduction of such modern management concepts as lean manufacturing techniques as well as through systematic and adequate skills training programmes for workers and supervisors. Similarly, a study of Indian garment factories demonstrated that factories could increase productivity levels by improving management performance (Bheda et al., 2003).
- **Poor production planning.** As a direct result of lack of skills and skills training, factory management tends to rely on individuals who may have plenty of practical experience, but no theoretical background in modern management practices or industrial engineering (USAID, 2005). Factories thus often lack standard procedures as well as production control, quality control, planning and information systems (USAID, 2005; Bheda et al., 2003). This leads to such issues as poor line setup and balancing, too much down time, poor planning processes, product quality problems, a lack of or only poor-quality time studies, and inefficient flow of materials to and from production lines (Hohenegger et al., 2018).
- **Insufficient measurement.** Factories also often fail to collect, record and analyse important information that would allow them to assess and improve productivity and existing management systems (Bheda et al., 2003; USAID, 2005). Factories must therefore increase efforts to record, measure and communicate performance at different levels in the factory (Bheda et al., 2003).

¹¹ Cambodian National Institute of Statistics, National Accounts, Ministry of Commerce, 2015.

- **Limited machine efficiency.** The Asian garment sector remains little automated in comparison to other manufacturing industries (ILO, 2019a). Technology is often outdated. For instance, in 2012, Indonesia’s Ministry of Industry estimated that 70 per cent of all machinery in use was 10–25 years old and out-dated (Chang et al., 2016). In Cambodia, inadequate equipment maintenance and ineffective spare-parts stock control contributed to low productivity (USAID, 2005). It was further noted that, to promote investments that result in substantive productivity gains, Indian garment factories had to develop a strategic plan for technology upgrading (Bheda et al., 2003).
- **Poor conditions for workers.** Several studies have demonstrated linkages between factory working conditions and productivity levels. Improving working conditions and increasing worker satisfaction (Oxfam, 2010; Hurst et al., 2011; Karmakera and Sahab, 2016) can have positive effects on a factory’s productivity levels in terms of reduced employee turnover and absenteeism rates (Berik and Rodgers, 2008; ILO, 2016b; Hurst, 2013). This can be important in a sector characterized by high levels of turnover and absenteeism driven by deficient working conditions, worker disaffection and an abundance of alternative employment opportunities (ILO, 2017c; Business Innovation Facility [BIF], 2016).
- **Focus on low value-added production.** Asia’s garment-exporting countries are primarily known for producing high volumes of low-cost garments. While countries in East Asia such as China have moved towards a higher value-added form of exporting, most developing countries, including Bangladesh and Cambodia, are still producing low value-added goods, relying on cheap labour as their primary competitive advantage (Huynh, 2015). For example, studies of the Bangladesh garment sector reported that functional upgrading in RMG factories has so far been rather low, while presenting evidence for some product and process upgrading (Moazzem, 2014).

3.3 Making the case for focusing on productivity improvements

The broader argument of this paper is that interventions should initially target factory-level productivity with improvements in efficiency. This presents an area where garment manufacturers are in control. These firms have little control, on the other hand, over such factors impacting productivity as cost of imported materials, transportation, and energy. Considering the labour-intensive nature of the sector, upskilling the workforce or upgrading machinery can substantially reduce costs while increasing efficiency, in turn leading to increased profits.

For manufacturers operating in a sector characterized by extreme price pressures, increasing factory profit margins is crucial in responding to an increasingly more competitive landscape (Frenkel et al., 2017).¹² It could also create the conditions for them to invest in better wages and working conditions. For example, the Business Innovation Facility (BIF)¹³ states that profitability is highly likely to increase alongside an increase in productivity as it can, for instance, generate additional cut-make value, resulting in greater utilization of the factory’s production capacity, and render international buyers likely to place more and larger orders (BIF, no date).¹⁴

Increased profit could not only result in factory growth and the further expansion of the sector, but could also assist low-cost CMT factories to upgrade to higher value-added products. Indeed, one study argued that garment-exporting countries in East Asia, which had already moved to a higher-value-added form of exporting, succeeded by first increasing the competence of their factories. This increased factory

¹² According to this study, 31 per cent of managers claimed their profit rate had ranged between 0 and 2 per cent, 47 per cent between 2 and 5 per cent, and most of the remaining 22 per cent between 5 and 7 per cent.

¹³ The Business Innovation Facility (BIF) is a five-year (2014–2019) United Kingdom Department for International Development (DFID)-funded market systems development programme in Myanmar.

¹⁴ A BIF study showed that orders grew by as much as 86 per cent as a result of factories investing in training and skills development for their workers, aiming to improve productivity, OSH and worker welfare.

capacity in turn led to a shift from a so-called a captive to a relational garment value chain, both helping local firms learn how to make internationally competitive consumer goods and generating substantial backward linkages to the domestic economy (Gereffi et al., 2005). This kind of initial “process upgrading” or efficiency-focused strategy for boosting productivity enabled garment factories to shift into a more competitive position over time by focusing more on product or functional upgrading once the factories have acquired the financial resources and know-how to do so¹⁵.

Improving productivity can also promote better factory response to the current technological transformation in the sector, as many ready-made-garment factories might not have the financial resources to invest in new technology that could enable factories to increase productivity even further. This is especially true for smaller factories, subcontractors or those operating in the lower tiers.

Importantly, addressing productivity gaps can also help garment factories ensure they are compliant with international buyers’ requirements regarding social and environmental issues. While it is evident from the decent work deficits remaining in the sector that improving working conditions must remain a priority, interventions aiming to improve productivity could actually assist factories in addressing social and environmental concerns by helping them absorb the incurred costs. Considering the low profit margins in the sector as well as rising labour costs, doing so should also be a priority.

From this perspective, it is understandably critical to see that productivity improvements are driven by improved efficiency rather than reliance on greater work intensity, as further deteriorating working conditions would be harmful to sector competitiveness. In fact, an ILO issue brief pointed out that factories often resort to a number of potentially harmful practices when not considering efficiency-driven productivity during the negotiation of new contracts (ILO, 2017d). These practices include forcing workers to work excessive overtime, subcontracting to other factories with more capacity or lower costs (and often more adverse working conditions), and resorting to verbally and physically abusive supervision to get quick results.

To conclude this chapter, improved efficiency-driven productivity at the factory level provides a better path to a more competitive garment sector, resulting in increased profitability. In turn, heightened profitability can better support the improvement of working conditions, responding thereby to changes in sourcing behaviour and requirements among international buyers, as well as providing resources for further industry upgrading. Process-based productivity improvement across the factory base must represent a crucial component of any sector strategy to upgrade over time and remain competitive in the face of contemporary challenges.

¹⁵ See e.g. Gereffi, 1999, or Humphrey and Schmitz, 2000, for a more elaborate discussion on different types of value chain upgrading strategies.

4. A conceptual framework for improving productivity and competitiveness

The previous chapter discussed productivity in detail and argued that, to improve working conditions and secure the competitiveness of the Asian garment sector, productivity needs to be improved initially by enhancing production efficiency. This chapter presents a conceptual framework for designing interventions that target productivity improvements at the factory level. This framework, established on the basis of findings from a review of the literature, focuses on Asian RMG factories operating in the final assembly stages, and applies six criteria to guide intervention design that aligns effectively with sector needs.

4.1 A framework for enhancing productivity

In recent decades, the international community has intensified scrutiny of the garment sector. In particular, there has been a multitude of attempts to improve working conditions in the sector and to address compliance-related issues.¹⁶ While these projects have often proved highly efficient and impactful, they have in most cases reached only a limited number of factories and workers in the first tier of the supply chain. The sector therefore remains, as suggested in previous chapters, characterized by the lack of decent employment opportunities and environmentally harmful practices. In addition, productivity initiatives in garment factories have so far been of limited scale.¹⁷ However, these are urgently required to ensure the competitiveness and sustainability of the sector over time, and to ensure that interventions address all root causes of inadequate working conditions.

This paper proposes a conceptual framework that can assist in the design of future interventions in the garment sector. The framework is based on a broad review of the literature to identify the needs of Asian garment factories and to build a better understanding of how interventions should be delivered to achieve maximum impact. It builds on previous studies that establish the need for the development community to expand their focus beyond compliance (ILO, 2017b), and emphasizes the need for the sector to find new drivers of competitiveness (Huynh, 2015).

The literature review identified six conditions to guide design of interventions to enhance factory productivity and competitiveness. These criteria are divided into two categories: “focus areas”, which present what should be the priority issues for any intervention in the garment sector; and “approaches”, which propose specific ways to deliver a successful intervention.

4.2.1 Focus areas

The three following criteria refer to the area of focus, or content, to be considered when designing a productivity enhancing intervention:

¹⁶ For example, development partners have implemented programmes such as the ILO-International Finance Corporation (IFC) Better Work programme. In addition, we have seen the rise of multi-stakeholder initiatives such as the Ethical Trading Initiative-Clean Clothes Campaign and the Fair Wear Foundation. Meanwhile, buyers have been implementing their own supplier compliance programmes.

¹⁷ Examples of highly impactful programmes that also incorporate a productivity dimension include Nike’s “lean manufacturing” programme and GAP Inc.’s P.A.C.E. programme.

- Interventions should target productivity improvements through an **integrated approach**, taking into account working conditions and environmental practices.
- By focusing on management practices and skills, interventions should be adjusted to the **current capacity** of garment factories.
- Interventions should orient factories towards **action**.

The following sub-sections elaborate on those three focus areas.

Drive productivity improvements using an integrated approach

Any intervention aiming to improve factory productivity should apply an integrated approach that takes into consideration working conditions and environmental practices. This is important for achieving a more sustainable garment sector over time, and can enable factories to improve productivity while ensuring they also respond to the currently increasing pressure from international buyers (Huynh, 2015; ILO, 2017f).

Interestingly, improved compliance by garment factories provides a significant predictor of firm survival (Brown et al., 2013). For one thing, working conditions can have positive effects on a factory's productivity levels, since they affect turnover, absenteeism and presenteeism rates (Berik and Rodgers, 2008; ILO, 2016b; Hurst, 2013). This can be vital in a sector characterized by high levels of turnover and absenteeism driven by deficient working conditions, worker disaffection and high worker mobility (ILO, 2017c; BIF, 2016). Meanwhile, transferring from environmentally harmful to more resource-efficient practices can also improve productivity levels.

Indeed, some observers argue that interventions to increase productivity should also consider working conditions, especially considering the labour-intensive nature of the industry (Oxfam, 2010; Hurst et al., 2011; Karmakera and Sahab, 2016). A study conducted in Bangladesh, for example, found that inadequate monetary and non-monetary rewards and unsafe or otherwise unfavourable working environments were among factors affecting garment factory productivity (Saha and Mazumder, 2015). A recent study in Viet Nam found that investments undertaken by small and medium-sized enterprises (SMEs) in worker health and safety significantly improved labour productivity (Filippini and Srinivasan, 2019). Other studies have pointed to specific issues related to working conditions and their linkages to productivity. Heavy workloads and ergonomically inadequate working conditions, for example, can be harmful to the health of workers, since tasks in the garment industry often include repetitive motions (Polat and Kalayci, 2016). Sexual harassment in Cambodia's garment industry caused productivity losses of an estimated \$89 million per annum (CARE, 2017b).¹⁸ Worker productivity in Indian and Chinese garment factories was influenced by factory temperatures. Higher temperatures also contributed to worker absenteeism, which had further impacts on factory productivity levels (Somanathan et al., 2018). Furthermore, a study in Bangladesh demonstrated that fair management practices were essential for garment worker job satisfaction and the avoidance of labour unrest, again leading to higher productivity (Sarker and Afroze, 2014).

Similarly, evaluations of projects implemented in the Asian garment sector indicate that improving both working conditions and environmental practices can also improve productivity:

- An in-depth evaluation of the ILO's Better Work programme by Tufts University demonstrated that the programme, which aims to improve working conditions and strengthen garment factory competitiveness, resulted in both productivity increases and rising profitability, as well as the curbing of excessive overtime and prevention of abusive practices such as forced labour, verbal abuse and sexual harassment (ILO, 2016b).

¹⁸ According to the CARE study, nearly one in three women garment factory workers reported personal sexual harassment in the workplace over the previous 12 months.

- The Fair Wear Foundation (FWF) has found that poorly trained male line supervisors are a major source of verbal and physical abuse of women workers. A pilot to train male and female line supervisors with the skills needed to manage workers without resorting to abusive behaviour resulted in markedly lower absenteeism and production mistakes in lines managed by supervisors who had completed the training (Hohenegger et al., 2019).
- The SMART Myanmar Garment Factories Improvement Programme, which aims to promote socially responsible and resource-efficient garment production in Myanmar, has seen increases in factory productivity, resource efficiency and social standards among participating firms. The programme covers a variety of topics, including environmental protection, working hours, discrimination, freedom of association, production planning and quality management (SMART Myanmar, 2015).
- A similar factory programme developed by IMPACTT, the Benefits for Business and Workers Programme (BBW), which covers such areas as communication, OSH, production and quality management, improved efficiency by 18.28 per cent. The programme also reduced absenteeism by 33.67 per cent on average and worker turnover by 52.16 per cent, indicating that workers were more motivated to come to work each day and to stay employed with the factory (Hurst, 2013).

To summarize, the labour-intensive garment sector benefits from productivity-focused interventions that also aim to improve working conditions and environmental practices, thereby boosting worker job satisfaction and factory efficiency while reducing turnover and absentee rates.

Adjust interventions to the current capacity of garment factories by focusing on factory processes and practices

The proposed framework suggests that interventions should focus on increasing the efficiency of factory processes by improving management practices and skills of workers. This criterion stems from the current strong focus on technological advances in the sector and the low capacity of many Asian garment factories, constrained, as discussed in the previous chapter, by such factors as ineffective planning and implementation of operational processes. An initial focus on improving factory processes promotes eventual investment in new technology plus benefits from subsequent productivity improvements.

A recent ILO report suggested that productivity improvements should be conducted to ensure sustainability and to avoid major sector disruptions (ILO, 2017b). The report argues that, as narrow profit margins leave little space for factories to bear further cost increases, productivity improvements should take a realistic, incremental approach. Productivity gains may be best served – at least in the short to medium term – by investing in skills rather than new technology. Indeed, a report from the United States Agency for International Development (USAID) showed that factories are most often unwilling to invest in new technology because they lack technological skills and financial resources (USAID, 2009). Low-cost manufacturers, which represent most factories in the Asian garment sector, are unable to invest in new technologies, since their profit margins are too low and they lack access to skilled operators for operating and maintaining new machinery.

In addition, technological innovation and adoption in the sector is widely driven by big brands and manufacturing groups whose margins are high enough for them to develop and adopt new technologies. SMEs, on the other hands, often found in lower tiers or subcontracting to larger factories in the supply chain, are generally unable to cope with the high costs incurred or to implement the technical changes needed to sustain such upgrading, as modern technology increases the demand for skilled workers able to operate and maintain new machinery (Chang et al., 2016). Furthermore, management in smaller factories might be less skilled, and therefore less likely to know what technology represents the best investment, in addressing the most obvious productivity gaps in the factory (USAID, 2009).

Investing in programmes to improve factory processes and practices requires far fewer resources than investing in technology and factory automation, but it can yield great benefits in terms of increased productivity, especially when considering the highly labour-intensive nature of the sector (USAID, 2009; ILO, 2017b). A study of labour productivity factors in Cambodia suggested that factory management is as important as advanced technology use in determining labour productivity (USAID, 2005). In support of this finding, a field experiment on large Indian textile firms established that management does matter. The study demonstrated that improvements in management practices “led to improvements in product quality, reductions in inventory and increased efficiency, raising profitability and productivity” (Bloom et al., 2011).

Skills development costs factories money, but the investment is quickly reimbursed through greater retention of staff and increased productivity (Hearle, 2016; Adhvaryu et al., 2018). In fact, employers often request such programmes across garment producing countries (ILO, 2017b), as there are often too few skilled workers to meet sector demand (UNDP, 2014). In support of this, studies reveal a shortage of skilled workers to fill the great demand for higher-paid managerial and technical positions (Huynh, 2015). A study conducted in Cambodia found gaps in management and technical skills at all factory levels, from upper management all the way down to operators (USAID, 2005). Managerial skills are particularly lacking among mid-level managers and direct supervisors (Macchiavello et al., 2014).¹⁹ Managers are usually selected based on their practical experience rather than based on their management skills (USAID, 2009), but direct supervisors tend to be promoted on the basis of their operator skills and, without additional training, may struggle in a position of leadership.

While factories are often reluctant to invest resources in factory upgrading and training (World Bank 2012, ILO 2016b), their willingness to do so is typically dependent on the productivity improvements gained from such training and the likelihood that workers are retained (Adhvaryu et al., 2018). While evidence suggests that investments in factory upgrading and training are reimbursed through greater retention of staff and increased productivity (Hearle, 2016; Naeem and Woodruff, 2015; USAID, 2009), this view is often not held by management of the most at-need factories in the lower production tiers. Hence, any intervention would need, at an early stage, to leverage a demonstration effect to incentivize factories to join available programmes.

A number of available studies have documented the positive impact that programmes to improve factory processes and practices can have on factory productivity (Hearle, 2016).²⁰ For example:

- A factory in Bangladesh set up its own training station equipped with necessary machinery. New recruits displayed greater efficiency than workers who had not gone through this induction training, and net benefits derived from the programme amounted to \$150,000 per year, which quickly offset training costs (KfW DEG, 2016).
- In Cambodia, USAID estimated that factories could increase productivity by 15–20 per cent if progress was made in technical and managerial areas (USAID, 2009). The Garment Industry Productivity Centre established by USAID in Cambodia in 2007 delivered training services in several technical skills areas (e.g. quality systems, waste control, personnel selection, and production systems). Project results showed that productivity gains made by client factories added \$13.6 million to the Cambodian economy, with some factories recording productivity improvements of as much as 30 per cent (USAID, 2009).

¹⁹ According to the Macchiavello survey, conducted in Bangladesh, only 15 per cent of line supervisors had received any formal supervisory training.

²⁰ Hearle lists several interventions in support of this argument, including the ILO Better Work programme, which for instance found that a training scheme for female supervisors increased productivity in factories by 22 per cent by reducing injury rates and instances of unbalanced lines. A similar training programme, the Benefits for Business and Workers Programme (BBW) implemented by IMPACTT over the course of six months in the garment sector in India and Bangladesh reduced worker turnover by an average of 52 per cent and improved efficiency by 18.28 per cent. Further, the programme improved the cut-to-ship ratio by 1.14 per cent.

- Similarly, lines supervised by better managers – i.e. managers who identify and solve production issues, treat workers well, monitor production frequently and replace low-productivity workers – have been shown to be more productive (Adhvaryu et al., 2018; Hearle, 2016; USAID, 2005). A study that assessed the results of the Better Work’s Supervisory Skills Training programme found a decrease in both supervisor and worker turnover (ILO, 2016a; Sarker and Afroze, 2014; Hearle, 2016).

To summarize, rather than focusing on technology upgrade, interventions should focus on improving processes in lower-capacity factories to promote their eventual capacity to invest in technology and to benefit from further productivity improvements in the future. This will ensure that the intervention is targeted towards the actual needs of the great majority of factories in the sector.

Design interventions to orient factories towards action

Interventions focused on improving productivity in garment-sector production facilities should spur action, disrupting “business as usual” and guiding factories to take steps to boost output versus inputs. Research into organizational learning suggests that such interventions should seek to mobilize a continuous process improvement model, one that better prepares for competitive, fast-changing environments (Senge, 2006). To this end, training content should be practical, enabling participants to readily apply what they learn.

Group learning, in which participants are enabled to share learning with each other and encourage lagging trainees to improve, produced good results (Hearle, 2016). Other studies have confirmed that, since it facilitates skills transfer, group learning is beneficial for skills development (Adhvaryu et al., 2018). Other observers, in considering how to overcome entrenched mental models and the practices that put them into effect, suggested the need for “Tools for fostering reflection and generative conversation” (Senge et al., 2015, p.31). The proposed approaches allow groups of participants to understand varying viewpoints, see other participants as people and better understand their viewpoints as based in their perceived realities and consider how to go about “shifting behaviour, from asserting subjective assumptions as reality, to identifying what facts people actually have and the reasoning by which they interpret those facts.”

When considering garment factory productivity, the intervention approach of choice should be grounded in the realities and challenges of garment production, rather than in consideration of the general topics covered (BIF, no date). Assistance to garment factories should be directly applicable to the needs of the factories supported, and appropriate to the capacity of the targeted workers (Hajela 2012; Hearle, 2016; and BIF, no date). Rather than delivering standardized trainings focused on broader topics, research has shown that support which fits factory needs is more effective. In general, it also means that entry requirements to courses should be adjusted to suit the predominantly lesser-educated workers who work in the garment sector (Hearle, 2016).

Research has shown that the more theoretical and abstract training is, the less successful the learning with regard to the target skills. With this in mind, engineering schools have moved away from pure lecture and textbook learning to more applied and “real world” experience and application of new competencies. In some cases, this has taken the form of “learning factories”, situations where students get the chance to actually experience the use of new competencies and their application in an actual production environment. Much of the research to date on what is broadly called “work integrated learning” (WIL) relates to changing demands among both participants and firms for increased learning-participant exposure to actual working environments, and the challenges found in these environments, as a complement to more formal education or training (Peach and Gamble, 2011).

Training interventions should be less conceptual and theoretical and more grounded in the reality of the workplace, a criterion that links to the second key aspect of an action orientation: the requirement that initiatives lead to concrete results, and the goal of accomplishing actual tasks beyond the training as such. This is in part driven by concerns about initiatives having a positive impact on any production

facility's bottom line. Staff turnover in the garment sector can be extremely high, often more than 10 per cent per month. This is especially true among less experienced workers – those most in need of skills development – which results in management viewing skills-development spending as a poor investment. For management to believe an initiative is worth their staff time and their financial support, it needs to produce concrete and attributable results, to have a direct impact on factory profitability, rather than on employee knowledge and skills that may have some impact on operations, but which might walk out the door the next day.

The latter consideration links to factory cynicism about training and change initiatives. Part of this can be attributed to experience with change initiatives, be they introducing 5S factory organization,²¹ or moving toward a pull-based Just-in-Time production system, or targeting greater worker involvement. By various counts, failure rates of organizational change programmes could be as high as 70 (Leanard and Coltea, 2013) or 75 per cent (Anand and Barsoux, 2017) – often quoted figures open to debate, but part of the lore of institutional development and an idea accepted as fact by many managers (Tasler, 2017).

Given that failed interventions can actually lead to lower productivity, loss of employee morale, distrust of management, and higher staff turnover, it is unsurprising that factory management may be unwilling to go forward with anything but business as usual, relying on systems that, while perhaps not optimized, have worked well enough to keep a factory in business. Successful interventions of limited scale, ones that focus on actions, concrete improvements that can be made and seen, with clear linkages to productivity, help address concern and demonstrate potential for further related actions.

Within RMG factories, which follow a largely standard flow of production, each room includes a relatively small number of operations, from receiving and stores to cutting, sewing, finishing and final inspection. Any upgrading programme, to be seen as effective and garner management support, will need to drive action – visible improvements in production processes that lead to buy-in and further engagement. Such “wins” in terms of bottom-line practices lead to a willingness to continue with the engagement and with investing worker and management time and effort in any training and factory upgrading process. Conversely, if training and other interventions are too theoretical or conceptual, or fail to lead to concrete improvements backed by metrics capturing their impacts on quality and productivity, they will lead to loss of commitment and failure of the initiative.

4.2.2 Approach

The three following criteria should guide the design of any approach to enhancing the productivity of Asian garment factories:

- Interventions should be **inclusive** and ensure a wide reach, both horizontally and vertically.
- Interventions should be **scalable** and **go beyond the first tier** of the supply chain to maximize impact.
- Interventions should be designed in a way that ensures continuation of the intervention model and its **sustainability** in the long term.

The following sub-sections elaborate on those three criteria for an effective approach to interventions.

²¹ “5S is a system for organizing spaces so work can be performed efficiently, effectively, and safely.” See <https://www.5stoday.com/what-is-5s/> [accessed 6 Dec. 2019].

Ensure a wide reach: Make interventions inclusive

Given the role workers need to play in both identifying improvements and implementing them, the design of productivity initiatives should be inclusive and locally grounded, while work at the factory level should be broad based, with deep worker engagement. This entails both a factory improvement process that is itself participatory and anchored in workplace cooperation arrangements (Panthong, 2018; Jayawardana and O'Donnell, 2009; Brown et al., 2016), and a broader group of workers employed at different factory levels being provided with support (Adhvaryu et al., 2018). This includes supporting women and other workers belonging to vulnerable groups, such as youth, who might otherwise be excluded from the factory improvement process (Naeem and Woodruff, 2015; Macchiavello et al., 2015).

An inclusive approach to target factory improvements will help win the support of both workers and managers who feel more ownership of the process. Indeed, the extensive quality-management literature expresses broad agreement regarding the importance of employee involvement as well as top management commitment to successfully implement quality management practice in a firm (Deming, 1982, 1986; Crosby, 1979; Juran, 1986). Employee participation appears an essential determinant supporting change implementation within Thai garment firms (Panthong, 2018). Similarly, a study in the Sri Lankan garment sector showed that an initiative to delegate responsibility for workplace performance decision-making to line employees increased workplace productivity and product quality over the 18-month period of the study, while levels of labour turnover and absenteeism declined (Jayawardana and O'Donnell, 2009). Further evidence (Brown et al., 2016) points to the success of interventions in which a committee or group representing workers from different factory departments has been involved, for example with the ILO Better Work's factory level Performance Improvement Consultative Committees (PICCs). Other examples include the workgroup-based Productivity Improvement Circles or the teams implementing Kaizen practices, initially introduced in Japan to promote continuous productivity and quality improvements at the factory floor level (Sonobe et al., 2011).

Providing support to a broader group of workers and managers can benefit the factory by creating incentives for employees to remain with the factory, since they receive access to education and training that increases workplace satisfaction.²² As previously discussed, however, garment-sector factories are often reticent to invest in training workers because of the issue of pervasive high turnover. This creates a vicious cycle that further increases turnover, negatively affecting both productivity and technology upgrading (Chang et al., 2016). Lack of training leads to greater worker dissatisfaction due to high work pressure and lack of opportunities for growth, which in turn reinforces turnover rates. The provision of training can break the cycle, improving satisfaction rates, lowering turnover rates, and eventually heightening productivity (Hearle, 2016). Hearle cites several occurrences, including the Personal Advancement and Career Enhancement (P.A.C.E.) programme targeting female garment workers, which led to a 66 per cent increase of retention rates in Cambodia, compared with female non-participants, and a 49 per cent increase in India after the programme ended. In fact, several factory improvement or skills programmes delivered in the garment sector have seen a decrease in turnover or absentee rates at the end of the programmes (Hohenegger et al., 2019; Hurst, 2013; ILO, 2016b).

A broad-based approach to delivering productivity support can also increase a factory's pool of potential candidates for supervisory or managerial positions. Women working in the garment sector, for example, are disproportionately represented in low-wage jobs and remain largely underrepresented in supervisory or managerial positions. A recent survey in Bangladesh found that four out of five production line workers were female, while only about one in 20 supervisors were women, meaning that 95 per cent of the managerial talent pool in factories emerges from 20 per cent of the workforce (Naeem and Woodruff, 2015). Ensuring that support delivered also is provided to women would thus not only increase the talent pool, since it provides them with the right skill-sets and incentivizes management to

²² This requires, however, that factories aiming to improve productivity do this in an integrated manner that also considers the working environment and well-being of factory workers.

consider them as candidates for promotion, it can also ensure a more satisfied workforce, as gender-specific concerns and priorities of women workers can more surely be taken into consideration (Macchiavello et al., 2015).

An inclusive approach could also ensure that increases in factory productivity benefit both workers and the factory. For example, the FWF states that an inclusive approach, which involves workers in negotiations, helps ensure that increased efficiency levels do not result in layoffs or work reduction. Instead, these can encourage the factory to expand operations using the freed-up resources, ensuring that workers remain employed (Hohenegger et al., 2019).²³ Some evidence shows that poor productivity levels reduce wages (Adhikari and Yamamoto, 2008). An inclusive approach to factory improvement could help ensure the additional resources resulting from such a process also benefits workers, potentially in the form of increased wages.²⁴

Gainsharing as a concept covers a range of approaches to “paying for performance” linked to improved results for the entire unit. While they can be linked to performance bonuses or increases in pay rates, they can also be linked to other results-based benefits that accrue to workers in an organization. These may include improved working conditions, for example the introduction of better worker facilities or better health-care coverage, for just two examples. Gainsharing is typically specific to the firm involved, and the decisions are made either through dialogue and negotiations or unilaterally by management (Welbourne and Gomez-Mejia, 1995).

The most common form of pay for performance in the garment sector has been the piece-rate system, an individualized gainsharing approach. Piece-rate pay systems have been declining in use, though, as product and production practices have become more complex, faster changing and harder to standardize. The piece rate approach depends on simple, repetitive tasks that can be fairly measured, something decreasingly the case in today's production environment. In situations where firms are moving to cellular manufacturing, just-in-time production or other common features of flexible, adaptive and fast-changing production systems, individual rewards are poorly suited to promoting team-based efficiency (Helper et al., 2010). Increasingly, as the garment sector moves in a similar direction, it will see a similar move toward group-based rewards and gainsharing approaches that promote collective efforts at improvements in production.

Scale the intervention beyond the first tier

This framework proposes that interventions in the garment sector should be designed for scale, and enable practitioners to go beyond the first tier of the supply chain. More factories will thereby gain access to needed support, and interventions can serve bottom-ranked factories in the sector in terms of productivity and working conditions, rather than focusing on the top-performing firms.

One reason for expanding beyond tier one of the supply chain is that tier-one factories are more likely to already have access to factory improvement services, and are under more pressure to participate. In fact, the garment sector has been described as the quintessential example of a buyer-driven commodity chain, in the sense that it is marked by power asymmetries between suppliers and international buyers (Gereffi and Memedovic, 2003). International buyers often have a direct relationship with the first-tier suppliers (Hurley, 2005), of which several have emerged as large Asian transnational companies, and leverage their power and resources to ensure that these tier-one factories improve their operations (Appelbaum, 2008; Chang, 2005; Merk, 2014). Indeed, private regulation has become one of the

²³ At the same time, however, increased efficiency can solve the issue of chronic excessive overtime, which is the reality for many garment workers in Asia.

²⁴ According to Hohenegger et al. (2019, p. 26), “living wages dependent on productivity is a fundamentally flawed idea”. Living wages should be thought of as a cost of human rights compliance, rather than something contingent on a factory achieving a certain productivity level.

dominant modes of regulation in the garment sector (Oka, 2010). Some researchers have argued that international buyers play a crucial role in the process and product upgrading of their closest suppliers (Schmitz and Knorringa, 2000). This has in turn resulted in international firms often playing an important role in developing domestic garment sectors (ILO, 2017c).

On the other hand, incentives for subcontractors or lower-tier suppliers to improve productivity and working conditions remain weak, since they often fall outside legal and regulatory frameworks, and are less exposed to pressure from buyers and advocacy groups (Barrientos and Smith, 2007). These factories are often SMEs, smaller production units, tier-2, and subcontracted factories and workshops in tier 3, which in turn often proceed to subcontract work to home-based workers (Hurley, 2005). These smaller, lower-tier factories are generally finding it more difficult to compete in the garment sector; insufficient productivity leaves them struggling to make a profit (Asuyama et al., 2014; Merk, 2014; Huynh, 2015). Further to this, some observers argue that working conditions typically are better in tier-one companies, since they are relatively modern operations with generally more professional management (Yanz and Jeffcott, 2005; Hurley, 2005; Posthuma, 2010; Merk, 2014). Factories in the lower value-chain tiers instead often exhibit great decent work deficits, including, in particular, unsafe workplace practices and lower wages. Indeed, a recent ILO report highlighted its finding that non-compliance with minimum wage laws in the garment sector is widespread in the lower tiers of the garment supply chains (ILO, 2019b). Given that women are over-represented in the lower tiers, the impact on women workers is even more pronounced in such factories. An ILO study from 2017 found that first-tier suppliers in Indonesia and Viet Nam had problems identifying subcontractors that could meet their compliance requirements, and therefore often had to provide training to suppliers to improve their social responsibility performance (ILO, 2019b).

Considering that factory upgrading programmes are often expensive interventions, even when efficient and impactful, support from buyers is often limited in terms of achieving scale, and typically benefits a smaller number of tier-one factories in the supply chain relative to the large number of manufacturers in the sector (Bloom et al., 2013; Macchiavello et al., 2015). For their part, development practitioners typically focus on tier-one factories that are more accessible and incentivized to participate in factory improvement programmes, as well as such factors as limited resources and intervention design (ILO, 2019b).²⁵ Of course this strategy has been selected because lower-tier factories have proven to be less accessible for reasons cited above.

However, the situation in the sector is problematic when considering that most garment workers are employed by small, lower-tier factories and that large tier-one firms tend to represent only a small portion of the total number of factories (Merk, 2014). In Bangladesh, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) counted more than 4,000 members in 2019, of whom 28 per cent were official subcontractors.²⁶ In addition, it is believed, many smaller factories continue to operate outside of the association. Given that it is particularly important for lower-tier factories to become more competitive by increasing productivity and improving working conditions, there is arguably a need for interventions to expand their scope beyond the first tier.

²⁵ This 2019 review of ILO interventions in global supply chains highlighted the fact that programmes in the garment sector have so far systematically excluded sub-contractors (tier 2 and beyond).

²⁶ Bangladesh Garment Manufacturers and Exporters Association (BGMEA), <http://www.bgmea.com.bd/member/memberlist%23.UnEBEKyAqSo> [accessed Oct. 2019].

Figure 7: Exporting garment factories in selected Asian countries

Country	Estimated number of exporting factories (2014/16)
Bangladesh	5 000
Cambodia	1 000
China	100 000
India	1 200
Indonesia	3 000
Myanmar	210
Pakistan	5 000
Sri Lanka	800
Viet Nam	500

Source: ILO, 2017c.

Adopting a sustainable approach

Related to the need for scalability and higher cost-efficiency is the need to ensure that, in their delivery model, productivity improvement interventions are designed to be sustainable. Such interventions should aim to build in the capacity to sustain impact over time and to be maintained and scaled-up beyond the end of their donor-subsidized components. Factory improvement programmes, for example those funded by development partners, often experience a short lifespan, where activities are part of a time-bound intervention and contingent on continued external funding. For that reason, it is essential to consider the sustainability of the intervention model and build it into the design from the outset.

Embedded sustainability involves such factors as local ownership of the intervention, transfer of new knowledge to local and national partners, and the intervention's financial viability. Local ownership can be promoted by involving local and national engagement from the intervention's early stages, and by ensuring ongoing and open dialogue with all partners involved. This involves engaging them as equal partners, rather than merely as agreeable beneficiaries (ILO, 2017b). It is also important to encourage local organizations to take the lead, for example by giving them decision-making power and other opportunities to influence outcomes. This important feature is sometimes neglected in developing countries, where institutional knowledge and capacity might be relatively weak and where it might seem more efficient and less time-consuming for a development actor to instead drive the intervention (USAID, 2005).

From a sustainability perspective, however, there is much to gain from developing the capacity of local partners such as employers' organizations, and from encouraging them to take advantage of the opportunities made available through the intervention (BIF, no date; USAID, 2009). For example, this will ensure that local partners are able to absorb new knowledge and institutionalize it. From this point of view, it is important to design the intervention so that it aligns with existing structures and ongoing local-partner activities and processes. For example, some intervention models in the garment sector, such as the establishment of a training centre or the improvement/expansion of the service offering of local partners, may prove a more sustainable approach. This, of course, requires such centres or services to be affiliated to a local institution, accessible to firms that require its support and to operate according to a sustainable, market-based business model, which will allow them to function without the need for external funding over time (Hearle, 2016). Supporting the local market for factory services could enable

the intervention to reach scale without relying on a cost-intensive approach and sizeable investment by a development partner or similar. In addition, building local capacity and ensuring local ownership of interventions can change the attitude of garment manufacturers who feel obliged to take part in interventions only to meet buyers' requirements, rather than doing so because they see added value for themselves. Indeed, there is a perception in the garment sector that buyer interests are what mainly drive interventions. Such ideas are driven by a lack of sufficient representation on the part of intervention beneficiaries and a failure on the part of intervention designers to consider local perspectives, needs and constraints (ILO, 2017b).

To better encourage local involvement, buy-in and ownership, interventions must also take account of constraints that manufacturers may face. These could be due to factors in their business operating environment such as weak infrastructure (USAID, 2005); such limitations in terms of financial resources as high material costs and narrow profit margins (ILO, 2017b); or such constraints pertaining to production realities as the inability to halt production to devote time for improvement. Not doing so incurs the loss of both valuable local insights and buy-in, which ultimately hinders implementation (USAID, 2005). This may even cause local stakeholders to choose not to participate in interventions, where they perceive a lack of due consideration and integration of their own viewpoint (ILO, 2017b). It also creates dysfunctional interventions, which are ill-adapted to local needs or out of reach due to their excessive cost, duration, or even badly-chosen timing and location. For instance, one study showed that productivity trainings were often inaccessible or led to high attrition rates when conducted far from the workplace (Hearle, 2016) – the more for women, since their mobility was often constrained (UNDP Pakistan, 2009), particularly when trainings interfered with their traditional family or domestic obligations. Considering that a vast majority of the garment sector's workforce is female, taking into account such constraints is of particular relevance to improvement efforts.

Lastly, the financial viability of the intervention presents another important design consideration. Factory improvement programmes are often costly, and rely on expert trainers to deliver heavily subsidized training services to factories (Bloom et al., 2013; Macchiavello et al., 2015). The proposed intervention might be feasible where the aim is to target only a smaller number of tier-one factories. However, if the measure intends to serve the sector as a whole, the design phase must take account of cost-efficiency as a critical factor. Further, the intervention should consider what resources might be available at the local and national levels to sustain the intervention when the project ends.

5. Concluding remarks

This paper identifies a need to address low productivity in large parts of Asia’s RMG sector, and discusses ways to make this an effective focus for interventions in that sector. The authors outline prevailing challenges in the sector, and then go on to argue that well-designed productivity interventions can help to secure future competitiveness and sustainability in a sector that remains important in many Asian countries for economic growth and employment, at the same time promoting decent work opportunities in an increasingly industrialized and formalized labour force.

Based on a review of the literature addressing factory needs in the Asian garment sector, the paper identifies six criteria to be applied in the design of future productivity-enhancing interventions. These criteria aim to ensure that such interventions are designed to achieve maximum impact in responding to the identified needs. As such, they are of relevance to various actors engaged in the sector who may seek to design new interventions or assess ongoing measures.

Among these six conditions, three pertain to areas of intervention focus, and three are linked to the approach interventions should adopt in addressing factory needs. The following table summarizes this study’s recommendations.

Figure 8: Criteria for designing productivity enhancing interventions in the garment sector

Focus area	Approach
<ol style="list-style-type: none"> 1. Taking into account working conditions and environmental practices, interventions should take an integrated approach to targeting productivity improvements. 2. By focusing on management practices and skills, interventions should be adjusted to the current capacity of garment factories. 3. Interventions should orient factories towards action. 	<ol style="list-style-type: none"> 4. Interventions should be inclusive and ensure a wide reach, both horizontally and vertically. 5. Interventions should be scalable and go beyond the first tier of the supply chain to maximize impact. 6. Interventions should be designed in a way that ensures continuation of the intervention model and its sustainability in the long term.

5.1 Future research

Given the garment sector’s relevance for employment and economic growth in the Asian region, a range of actors are already focused on this area, among them government agencies, employers’ and sectorial associations, intergovernmental organizations such as United Nations specialized agencies, and private sector actors including international buyers and private consultancies specialized in the garment sector.

It is unclear, however, to what extent interventions designed and implemented by these actors are effectively answering sectoral needs. Recent research seems to indicate that firms have some reservations regarding both the focus of these interventions and the approach they typically take.

Further research is thus needed to examine the variety of recent and ongoing interventions, and to present a broader picture of the services available to improve processes applied in Asian garment factories. This study suggests that this can be accomplished by evaluating current and recent

interventions in the light of the six criteria outlined in section 5.1. This would constitute a first step in assessing the adequacy and impact of their areas of focus and types of approach, while identifying remaining gaps in addressing current sector needs. Such an assessment could serve as a stepping stone for various stakeholders in understanding what type of interventions might best address the identified gaps, and in redirecting current and future efforts towards improving productivity and working conditions. Ultimately, these measures will contribute to sustaining the sector's competitiveness while promoting more opportunities for decent work.

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Securing the competitiveness of Asia's garment sector: A framework for enhancing factory-level productivity

This paper establishes the need for interventions in the Asian garment sector to address the low productivity of factories, and thereby secure the sector's future competitiveness and long-term sustainability. By outlining how productivity improvements can enable garment factories to respond effectively to a changing competitive landscape and current trends – among these social and environmental concerns on the part of international buyers, and technological advances in the sector – the authors make the case for why development actors also should consider productivity when designing future interventions.

To assist with the design of future interventions targeting productivity improvements, the paper establishes a conceptual framework that aims to respond to the identified needs of Asian garment factories. It finds that successful interventions in the garment sector should address low factory productivity through a systematic, broad-based improvement of processes grounded in worker engagement and workplace cooperation.

Decent Work in the Garment Sector Supply Chains in Asia

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