

Making sense of downstream labour risk in global value chains: The case of the Australian cotton industry

Journal of Industrial Relations

1–23

© Australian Labour and Employment Relations Association (ALERA) 2022
SAGE Publications Ltd, Los Angeles, London, New Delhi, Singapore and Washington DC

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/00221856211066628

journals.sagepub.com/home/jir**Martijn Boersma** 

University of Notre Dame Australia, Australia

Emmanuel Josserand

University of Technology Sydney, Australia

University of Geneva, Geneva

Sarah Kaine

University of Technology Sydney, Australia

Alice Payne

Queensland University of Technology, Australia

Abstract

While the efforts by actors on the buyer-side of value chains – such as brands and retailers – to address *upstream* labour abuses are well documented, there is a lack of research into how actors on the production-side of value chains – such as raw material producers – can identify and address *downstream* labour risks. This research presents the findings of an action research project that focused on the Australian cotton industry. By applying a sense-making lens, we propose four properties that can be used to identify labour risk in global value chains, providing insights into the capacity of producers to address downstream labour abuses. We suggest that there is a possibility for a ‘book-end’ approach that combines upstream and downstream actions by buyers and producers in global value chains.

Corresponding author:

Martijn Boersma, 128-140 Broadway, Chippendale NSW 2007.

Email: martijn.boersma@nd.edu.au

Keywords

Labour risks, global value chains, sense-making, downstream due diligence, cotton

Introduction

Labour and human rights abuses are common in global value chains (GVCs) (Rosen, 2002; Simas et al., 2014). A challenge is that GVCs are fragmented with multi-tier structures of subcontracting (Josserand and Kaine, 2016), meaning that efforts to address labour risks are often initiated at arm's length. In this context, the difficulties that GVC actors face in identifying labour risks are a key concern. In the absence of a binding transnational mechanism overseeing labour and human rights (Ruggie, 2007, 2013), companies that operate outside of the regulatory setting of any one country have relied on voluntary reporting, labour standards accountability schemes and Environmental, Social and Governance (ESG) ratings to quantify risks, counter malpractices and direct responsible sourcing (Beske and Seuring, 2014; Mueller et al., 2009). The abundance of these schemes has created a complex information structure (Koeber, 2009; Marimon et al., 2012), while the validity of rating tools has been questioned (Chatterji et al., 2016). Although there has been progress in techniques to quantify labour risks (Handfield et al., 2020), there is a need for a comprehensive approach to consolidate data from multiple sources and across multiple dimensions (Gold et al., 2015; Mol et al., 2005; Stanczyk et al., 2017). While the literature has grappled with defining forms of risk and methods of risk assessment (Giannakis and Papadopoulos, 2016; Heckmann et al., 2015; Rao and Goldsby, 2009), amongst which is labour risk (Simas et al., 2014; Sydow and Frenkel, 2013), existing research does not provide clear guidance for labour risk identification in GVCs.

The question is even more salient in relation to downstream labour risks. Indeed, academic literature has traditionally focused on the ways in which brands and retailers shape GVCs (Gereffi, 1994, 1999). Despite efforts to move beyond the dichotomy of buyer-driven and producer-driven value chains (Gereffi, 2001), labour risk has predominantly been perceived from an upstream perspective (Roehrich et al., 2014; Wright, 2016). The emphasis has been mainly on the influence and responsibility of brands and retailers. This emphasis is for good reason, given that the asymmetrical power relationships between buyers and producers in GVCs often serve to create the conditions for labour abuses (Anner, 2019; Mezzadri, 2017). The narrow focus on the responsibility of large entities for labour malpractices further upstream negates a more holistic approach that would include a downstream perspective on labour risk. Given the buyer-driven focus of existing research, the lack of attention to downstream labour risks, and the difficulties in identifying and addressing labour risk in general, we set the following research question: *How can upstream value chain actors identify and engage with downstream labour risks?* Our paper uses sense-making (Weick, 2001) as a theoretical lens to assist in dealing with the complexity of identifying downstream labour risk in GVCs, using the Australian cotton industry as a case study.

The Australian Cotton industry is part of the fashion and apparel value chain (Baptist World Aid, 2020; Theuws and Overeem, 2014), a fragmented value chain where actors such as brands and retailers are not direct parties to the most at-risk employment relationships (Nath et al., 2019). The fashion and apparel value chain are regarded as buyer-driven (Hammer and Plugor, 2019; Perry and Wood, 2018). With growing reportage of malpractices, fashion brands and retailers are sensitive about being connected to worker exploitation, as companies are increasingly held responsible for practices of trading partners over which they have no ownership (Clarke and Boersma, 2019). Discussions have focused on the ways in which the actions of brands and retailers are detrimental for workers, for example, through poor sourcing and purchasing practices which put financial pressure on suppliers and create incentives to cut costs in ways that exacerbate workplace abuses (Human Rights Watch, 2019). Raw fibre producers are also increasingly taking steps not to be associated with labour abuses and see ethical branding as a point of differentiation. An example is the U.S.-based brand Supima. Using the slogan ‘from seed to stitch’, Supima uses traceability technology to mark their cotton as U.S.-grown Pima and differentiate it from cotton produced in regions known for labour abuses (Supima, 2019). The Australian cotton industry has also come to view ethical branding as a means to enter new markets (Bagshaw, 2021). Furthermore, concerns about downstream malpractices in GVCs have grown amongst Australian commodity producers, specifically after Australia’s live animal export industry faced an existential crisis following the revelation of widescale animal mistreatment overseas (ABC Rural, 2013). This means the Australian cotton downstream value chain is a relevant case for our research.

The remainder of this paper is structured as follows. We first highlight the traditional buyer-driven or upstream focus on labour abuses in GVCs, which has negated a more holistic approach that includes producer and downstream perspectives. We then discuss the multi-scalar nature of labour risk and the challenges that exist in identifying labour risks, exacerbated by the proliferation of datasets. We explain how a sense-making approach can assist in overcoming these challenges and describe four properties that informed the development of a labour risk identification tool. Following this, we apply the tool to the Australian cotton value chain. We discuss the practical implications by outlining potential points of intervention for Australian cotton producers to improve downstream working conditions, and we reflect on the theoretical implications by discussing how producer-driven interventions may supplement buyer-driven initiatives to address labour risks.

Making sense of labour risk in GVCs

While brands and retailers have sought to redress upstream labour abuses for some time, actors such as Australian cotton producers have only recently become concerned with working conditions once their product moves downstream. This downstream perspective presents challenges, as the proximity of cotton growers to GVC activities and risks is different compared to brands and retailers, as is the leverage that they can exert, and so, therefore, are the potential avenues for intervention. The vast majority of Australian

cotton is sold on the open market. That means that cotton producers have little to no oversight on where their cotton goes once it leaves Australian shores. While brands and retailers increasingly have oversight over where their goods come from and are often in a position to exert influence to improve labour standards further upstream from a producer perspective Australian cotton growers are entering a brave new world. Not only has there been limited insight into where cotton is exported to or what labour abuses might occur, but there has also been no effort to identify potential points of intervention to prevent and remedy such abuses.

This paper builds on an action research project aimed at supporting the Australian cotton industry in their endeavour to make sense of labour risks and its relevance to their position in the value chain. As Australian cotton producers are venturing into uncharted territory, we selected sense-making (Weick, 2001) as a theoretical lens since it is aimed at supporting decision makers in 'structuring the unknown' (Waterman, 1993: 41). We expose the key challenges that come with the task of making sense of labour risks in GVCs, in particular from a downstream perspective, and we explain why the sense-making approach was selected. We show how sense-making comes with four properties that, combined, can inform the development of a labour risk identification tool. Such a tool needs to be consolidative processual, multilevel and decision-oriented. Finally, we discuss the limits of our theoretical lens in an action research context.

Labour risk is multi-scalar

Labour risks in GVCs have predominantly been approached with a focus on actors at the retail and consumption side of the value chain. This is because in many industries, including the fashion and apparel industry (Hammer and Plugor, 2019; Perry and Wood, 2018), brands and retailers do not own upstream factories and rely on global sourcing instead. Perceived and real risk and responsibility for labour abuses does, however, sit with these companies, because their practices (offshoring production, just-in-time strategies and a 'race to the bottom' in prices) create the preconditions for labour abuses (Human Rights Watch, 2019). Reports of labour abuses can result in reputational risk (e.g. Nike boycotts in the 1990s, see Locke, 2003) and the response has been characterised by the social auditing of suppliers and by establishing codes of conduct (Barrientos and Smith, 2007; Islam et al., 2018). Yet despite these efforts spanning the last three decades, brands and retailers have not managed to create lasting improvements to working conditions, due to 'a lack of transparency, conflicts of interest, and a weak system for detecting, documenting, reporting, and remedying human rights risks and violations' (Clean Clothes Campaign, 2019: 1).

As a buyer-driven value chain, the development of solutions to labour abuses in the fashion and apparel industry has traditionally focused on the role of brands and retailers. Where attention was paid to the opposite end of the GVC, which is on the role of raw fibre producers, the focus has been on labour abuses at this stage of the GVC, for example, by highlighting abuses in certain cotton-growing regions, which have resulted in boycotts of Uzbekistan cotton by over 300 brands and retailers (Responsible Sourcing Network,

2021). Currently, there are concerns about the abuse of Uyghur Muslims in the cotton growing and processing region of Xinjiang in China. Conversely, as cotton production in Australia is highly mechanised (Cotton Australia, n.d.), it has a low-risk profile compared to cotton-producing regions that rely on manual labour. Therefore, practices occurring downstream in the value chain represent a risk to the Australian cotton industry, which does not wish for its product to be associated with labour malpractices. It is, therefore, necessary to examine the labour risks occurring post-farm gate and how these risks can be identified and mitigated.

According to the Organisation for Economic Co-operation and Development (OECD), risk refers to the risk of harm to individuals, other organisations and communities in relation to human rights, labour rights and the environment (2018). Understanding labour risk is complicated by the fact that such risks cover a large spectrum of interconnected issues, meaning that there is a multitude of factors that need to be considered. For instance, the OECD due diligence guidance states that risks in the garment and footwear sector include:

child labour; discrimination; forced labour; excessive hours of work; work-related and health; violations of the right of workers to establish or join trade unions and representative organisations of their own choosing and the right of workers to bargain collectively; noncompliance with minimum wage laws and wage levels that do not meet the basic needs of workers and their families; discrimination; hazardous chemicals; water consumption; water pollution; greenhouse gas emissions; bribery and corruption (2018: 15).

The Australian Government underlines the need to consider a spectrum of labour risks. In a guidance document accompanying the Modern Slavery Act, it states that '[m]odern slavery happens at the most extreme end of a spectrum that ranges from decent work to serious criminal exploitation' (Home Affairs, 2019: 9). Similarly, the UK Government states: '[t]here is a spectrum of abuse and it is not always clear at what point, for example, poor working practices and lack of health and safety awareness seep into instances of human trafficking, slavery or forced labour in a work environment' (Home Office, 2017: 18). This means that labour risk is multidimensional and the number of risk factors is virtually infinite.

The literature also suggests that a multi-scalar perspective is needed as both the broader socio-economic context and the local circumstances in which abuses occur should be taken into account, as any large- or small-scale factor that undermines a person's capacity to make autonomous decisions about their working life can result in exploitation (Nolan and Boersma, 2019). The matter is especially complex in the context of globally fragmented production. Yeung and Coe argue that 'the qualitative nature and causal effects of risk play out differently in the context of global production networks' (2015: 42). They contend that while risks existed in the era of vertically integrated mass production, these risks now have a broader geographic scope and can spread faster due to global production and outsourcing.

A similar observation is made by Antonini et al. (2020). They argue that in traditional industrial societies people reacted to issues that were directly perceivable (e.g. poor

working conditions), yet due to modernisation and globalisation issues have become more complex and can appear intangible (e.g. poor working conditions in GVCs). They go as far as stating that the way in which social risks are framed along the GVC renders them ‘invisible and impersonal’ (Antonini et al., 2020: 1535). A key point is that ‘risk is generally produced beyond the control or confines of individual actors and refers therefore to a common environment confronting actors collectively’ (Yeung and Coe, 2015: 42). There is thus a clear need for taking a multi-scalar view on labour risks in GVCs. This is important given the emphasis on a downstream rather than an upstream perspective on labour risk in this paper.

The intricacies and multitude of factors to be considered when approaching labour risk, in general, is further complicated in the case of the Australian cotton industry since they are approaching the matter from the less developed perspective of downstream labour risk. Sense-making can help approach this complexity because it is both processual and multilevel.

Property 1: Sense-making is processual. Sense-making must be understood as an ongoing process, not a definite result. Weick (2001) likens sense-making to cartography. It is important to note that there is no map that is ‘right’. Rather, sense-making allows researchers to create an emerging picture through data collection, action, experience, and conversation: ‘maps reduce chaos, ambiguity and make reality containable by imposing a structure to it [...] a map is an invention, a construction, not a discovery that is made in reality’ (Langenberg and Wesseling, 2016: 230). Maps that explain, that invite discussion, action and ideas are more useful than maps that attempt to portray a definite picture of a reality that is changing and elusive (Weick, 1995).

This suggests that sense-making is most useful when our understanding of a phenomenon is hindered, in our case, there has been limited attention to downstream labour risks. Antonini et al. (2020), explain that risks in GVCs are ‘[...] not readily experienced, but require a chain of causal interpretations, as is often the case with ecological and social problems’ (Antonini et al., 2020: 1539). It thus seems appropriate to attempt to redress the apparent unknowability of risk in GVCs through application of the sense-making process. As such a sense-making tool for the assessment of labour risk should produce a map that helps decision makers make sense of the situation. In doing so, it is important to ‘let the appropriate map or framework emerge from your understanding of the situation’, and to ‘put the emerging situation into a new framework to provide [...] order’ (Ancona, 2011: 9–10). Indeed, the perspective and the interpretation of the decision maker in creating and reading the map matters.

This perspective calls for a renewal of how we approach the consolidation of complex datasets when making sense of labour risks in GVCs. Indeed, approaches to consolidate large amounts of data concerning GVC risks have relied on assigning different weightings according to the importance of a measure (Thornton et al., 2013), or have alternatively assigned equal weightings to each measure (Min et al., 2017) with an aim of providing a reliable, ‘true’ measure of risk(s). This is despite research showing that decision-making in relation to risk in GVCs is subject to several biases, stemming from the fact that risk is a perceptual rather than an objective phenomenon (Ellis et al.,

2011). Existing approaches contend that weightings can be adjusted to align with assumptions or priorities of actors, while a reduction in bias may be achieved by assigning a weighting on the basis of consensus between various actors. However, a sense-making perspective shifts the focus from the output to the process. As such, it is important to provide a tool that can help actors make sense of risk in their specific context. This has driven our choices in how we present data so that it triggers engagement with underlying elementary measures rather than providing an aggregate scoring. This is notably enabled by the multilevel visualisation and the decision-making focus of the tool.

Property 2: Sense-making is multilevel. Another aspect of the sense-making process is the capability to navigate complexity by providing what we label ‘multi-level visualisation’. As noted, the sense-making process aims to construct a clear picture of a complex reality. Visualisation is thus a key element of the process. In the case of GVCs, Gold et al., contend that the ‘first step to developing suitable indicators is the enhancement of supply chain visibility and transparency by supply chain mapping’ (2015: 488). Increasingly, models that describe GVC risks make use of visual aids such as simulations or virtual reality (Aqlan and Lam, 2015; Ivanov et al., 2019). Given the complexity of GVCs and the multidimensional and multi-scalar nature of labour risks, such visualisation should allow for navigation between levels of analysis, whether that means geographically zooming in or out, looking at individual indicators, or examining themes.

Ancona argues that sense-making ‘involves moving from the simple to the complex and back again. [...] sense-making is an emergent activity – a capacity to move between heuristics and algorithm, intuition and logic, inductive and deductive reasoning, continuously looking for and providing evidence, and generating and testing hypotheses (2011: 4–5). Hence a labour risk tool should offer possibilities to make the visualisation multilevel: to change perspective, to consult a holistic map that comes with consolidated information, but also to zoom in and access detailed information about a specific issue or a specific stage of the GVC. This is important since risk in GVCs is often beyond the control of one actor (Yeung and Coe, 2015). While the focus of existing literature on retailers and lead firms and their upstream perspective has produced valuable insights, a multilevel view may better capture the risks faced by all GVC actors and allow for a better-informed response.

The multiplicity of datasets and indicators muddies the water

In recent years, there has been a marked growth of ESG platforms and indices used by companies and investors to make ethically informed decisions about risk in sourcing and investment. Commercial services offering risk insights include Sourcemap and Elevate, which allow companies to analyse GVC risks that could negatively affect their business. Similarly, proprietary services such as GlobalData allow buyers to compare countries around criteria such as regulatory compliance and sustainability to aid in making sourcing decisions. However, there are problems with ESG data platforms:

It is now generally agreed that a major impediment to the further rapid growth in ESG investing is the poor quality of ESG data provided by raters. Common taxonomies and templates are still in their infancy and evolving haphazardly even as demand for ESG products is increasing. This poses problems for investors who seek ESG opportunities and may be paying a high price for flawed data, as well as for companies striving to improve their practices that go unrecognized. The problem is especially severe in the S category – addressing human rights-related issues (Ruggie, 2019).

In a study of ESG rating providers, Semenova and Hassel (2015) show that the compared ratings feature some commonalities but do not converge. This is caused by the different scoring methodologies. Chatterji et al. (2016) performed similar research and also conclude that there is a low convergence amongst various rating approaches. Dorfleitner et al., also find a lack in the convergence in their assessment of ESG rating providers. Their study reveals differences in the scoring approaches as well as in definitions of key concepts. They argue that this ‘does not only lead to differences in the complexity of [...] assessment but also in the degree of transparency’ (2015: 465). Although the providers generally use similar concepts to establish ESG ratings, the different composition and weighting of the indicators lead to distinctions in the final appraisal, especially in relation to the social dimension.

Another difficulty in relation to ESG data is that it often includes low levels of transparency: ‘[m]ost ESG raw data is codified using proprietary methodologies that often require the use of ad hoc loadings and weighting exercises, which depend on a wide array of dimensions also defined arbitrarily by the data providers’ (Fiaschi et al., 2020: 289). To overcome the shortcomings of ESG rating approaches, Handfield et al. (2020), in their study of labour risks for apparel production, argue that there is a need to assess the unique risks within each region at a more granular level as ‘[b]road third party indicators fail to capture shifts in socioeconomic and labor conditions unique to each area’ (808). Several authors have noted that tools that seek to quantify risk perceptions at a granular level need to use multiple data sources (Gold et al., 2015; Min et al., 2017; Stanczyk et al., 2017). An example of increased granularity is to avoid aggregating data and instead of using publicly available unadulterated data, which allows for risk mapping that avoids ‘compiling multiple publicly available risk indices in a ‘stew of indices’’ (Handfield et al., 2020: 808).

The complexity surrounding risk in GVCs has, in other words, not been alleviated by the proliferation of labour standards accountability schemes, reporting frameworks, voluntary standards and ESG indices (Ciliberti et al., 2009; Ruggie, 2019). Given that many of these regimes focus on different industries and regions, and describe different factors that may impact on the employment relationship, these are not always readily comparable or aggregable (Chatterji et al., 2016; Dorfleitner et al., 2015; Fiaschi et al., 2020; Semenova and Hassel, 2015). A supplementary source is the systematic aggregation of newsfeeds. Handfield et al. (2020) developed a machine-based learning algorithm that converts data from multiple newsfeeds into risk scores and visual maps. They were inspired to do so, as they found that the representatives of global apparel brands that they interviewed ‘often rely on random news articles, third-party indices or even gut level

instinct to identify, amalgamate and prioritize supply disruption risks' (2020: 803). In their paper on modern slavery risk, Gold et al., find that there is a lack of effective indicators, which requires 'new tools and indicator systems [...] to be developed that consider the specific social, cultural and geographical context of value regions (2015: 485)'.

Property 3: Sense-making is consolidative. Sense-making can help overcome the difficulties in dealing with a heterogeneous and inconsistent ensemble of data by favouring a consolidative approach. Indeed, in sense-making, it is important to broadly explore the system you want to learn about and 'seek out many types and sources of data' to 'move beyond stereotypes [...] to understand the nuances of each particular situation' (Ancona, 2011: 8). Incorporating the breadth of available information is essential to construct a representation of reality (Weick, 2001). Conforming to this is a challenge in our case, considering the multiplicity of available sources concerning labour risks in GVCs. The literature notes that a comprehensive approach with consistent and comparable indicators is needed with tools to quantify risk perceptions from multiple sources (Gold et al., 2015; Mol et al., 2005; Stanczyk et al., 2017). However, quantification in itself may not be enough, and rather than relying on singular indicators, tools are better conceived of as systems of indicators that 'must make use of a combination of monitoring of risk indicators [and] triangulation of various data sources' (Gold et al., 2015: 490). As discussed, such sources include existing ESG indices. Yet, the literature shows that, due to non-transparent codification, proprietary methodologies indices do not converge (Chatterji et al., 2016; Dorfleitner et al., 2015; Fiaschi et al., 2020; Semenova and Hassel, 2015). We, therefore, focused on consolidating non-aggregated data, and in doing so included available information to construct a representation of reality and create a useful sense-making device (Weick, 2001).

Labour risk is connected to other business issues

To produce meaningful insights, labour risk should not be viewed as a disconnected issue but should be viewed from a broader risk and business perspective. It is important for actors in the value chain to be able to move beyond a siloed view of labour risks, towards an approach that holistically incorporates and facilitates strategic decisions in relation to risk. For example, it is important to consider the connection between labour risk and other types of risk. The UK Home Office acknowledges this. In its guidance accompanying the Modern Slavery Act, it states that: '[d]ue diligence processes and reporting are essential management tools that improve risk identification and long-term social, environmental as well as financial performance' (Home Office, 2017: 4). Similarly, the Australian Home Affairs Department states that '[b]y improving transparency about modern slavery, the reporting requirement will increase business awareness of modern slavery risks, [and] reduce modern slavery risks in the production and supply chains of Australian goods and services' (Home Affairs, 2019: 13). It adds that, if left unaddressed, modern slavery can 'pose substantial reputational and legal risks for your entity and damage your commercial relationships' (Home Affairs, 2019: 10). That is to say that labour risk is connected to other dimensions in GVCs: economic, product,

regulatory and environmental dimensions (Yeung and Coe, 2015). A labour risk tool, therefore, needs to be used in connection to these other dimensions, in order to adequately inform the decision-making process. Ultimately, it should facilitate action and engagement with labour risk along the value chain with a strategic perspective: actors should be able to integrate labour risk into the decision-making process.

Property 4: Sense-making is decision-oriented. The fourth key property of sense-making that is relevant to address the connection between labour risk and other business issues is that it is decision-oriented. Ultimately, sense-making is about turning complexity into a 'situation that is comprehended explicitly in words and that serves as a springboard into action' (Weick et al., 2005: 409). To do so, it is important to 'be aware and realize the impact' of oneself on the wider system (Ancona, 2011: 10–11). Applied to labour risk, this means that the boundaries of a decision-oriented labour risk tool need to extend beyond labour risk. Put differently, it is important to connect labour risks with other dimensions of risks and/or the financial performance of companies, given that these dimensions are often connected. For instance, risks to business entities intersect with heightened risks for workers: modern slavery is a risk to people which may result in reputational and legal risks; conversely, reduced revenue from sales (a financial risk) may result in violations of minimum wage standards (a risk to people).

Limitations of using sense-making in action research

Because our research included an objective of supporting the Australian cotton industry in making sense of downstream labour risks, we approached the project as an action research endeavour, where the theoretical lens was that of sense-making. In action research, researchers actively engage with operational members of the project to deliver outcomes, in our case, a labour risk tool for the cotton industry. Action research combines the needs of the participating organisations with the production of research output (Koshy et al., 2011). This can lead to tensions between these two objectives, meaning that it is important that the research team reflects on how to best deliver and translate theoretical perspectives into actionable outcomes for the participating organisation.

One such difficulty characterised our project. While the sense-making theoretical lens proved useful for the research team to consolidate findings into principles that guided the development of the tool, it came with academic jargon that was not easy to share with practitioners. Therefore, during workshops and interviews, we only briefly presented the four properties of sense-making and instead focused on the concrete translation of these properties into the construction of the labour risk tool. The second limitation was in the acceptance of the objectives and principles of sense-making. This meant revisiting the notion that labour risk can be measured through aggregative indicator scores. The sense-making perspective does not provide a definitive score for a country or a specific issue but rather encourages an ongoing navigation between levels and topics. This results in potential strategies but does not offer a one size fits all conclusions. Consequently, we

prioritised the development and co-design of the tool with participants. By providing this experience we progressively persuaded them of the virtues of a sense-making approach.

The Australian cotton value chain

Cotton growing represents the first stage in the value chain. Figure 1 (see Supplemental material online) shows GVC stages and key actors (Payne, 2021) from upstream (cotton growers) to downstream (retailers, consumers and textile recyclers). Australia is the fifth largest exporter of cotton in the world. Over 95% of the Australian cotton crop is exported. Post-farm gate, cotton merchants and brokers are key actors in the cotton value chain as the traders who liaise between grower and spinner. Merchants may also own and operate the gins that process the raw cotton before shipping to spinners. Yarn production involves spinning cotton into yarn. To achieve the desired quality, spinners will typically blend cotton from various origins into yarn (Gurney and Jurewicz, 2013). This means there is rarely a single-origin cotton yarn, meaning traceability by brands and retailers is made difficult. Spinning is a highly mechanised process with fewer workers and hence fewer reported labour abuses than elsewhere in the GVC. Yet due to the difficulties around traceability, spinning is therefore the point in the GVC where any labour abuses that occurred upstream, for example, at the growing stage, becomes harder to identify (Gurney and Jurewicz, 2013). This shows the importance of a downstream perspective of growers on labour risks before cotton from various sources is blended, limiting visibility and intervention. Fabric production and garment manufacturing are the most labour-intensive parts of the GVC. Garment manufacturing employs an estimated 70 million workers globally (Crisis and Vickers, 2017).

The following sections outline a method that can assist actors in the Australian cotton value chain to assess the risk of exploitation and decide on points of intervention. The sense-making process described below draws exclusively on publicly available and transparent data including datasets, grey literature such as NGO reports, and scholarly literature. Throughout the process, we engaged in conversation with the industry through frequent informal contacts but also through seven interviews and a workshop with cotton growers, merchants, research officers and other representatives from industry bodies, totalling eight people excluding the researchers. There were also three one-on-one meetings with industry bodies. During all these interactions, we tested our overall sense-making approach and sought feedback from industry representatives on the current version and the future envisioned prototype of the tool. The interviews were recorded and transcribed and during the workshop and other engagements data were collected through extensive note-taking.

Applying sense-making to the cotton value chain

Before putting the four sense-making properties into practice, we first had to identify the countries pertinent to the Australian cotton value chain. Our foci were the midstream production phases of spinning, weaving, and garment production, so we identified countries based on their activities in these areas. We developed our initial approach by looking

downstream to the markets into which Australian cotton is sold, and upstream to markets from which brands and retailers source garments. Country selection included:

- (a) identification of key markets for Australian cotton based upon data from the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)¹ and
- (b) identification of other major Asian and emerging African textile and garment manufacturing nations through grey literature (e.g. NGO reports, industry journals)

Despite not being major importers of Australian cotton, this second group was included due to their position in the cotton value chain. There is an interconnectedness between cotton exporters and importers, yarn spinners and manufacturers. This is significant given the increasing recognition that labour risk, both its creation and its impact, is not limited to one particular value-adding activity in the GVC. The top 10 export markets for Australian cotton for 2019/2020 are China, Indonesia, Vietnam, Bangladesh, India, Malaysia, Japan, Thailand, Pakistan and Korea. Korea's volume of imports of Australian cotton has been declining starkly from 35.4kt in 2014/2015 to 1.2kt in 2018/19 and 0.4kt in 2019/2020. Consequently, Korea was excluded from our analysis. The second group of countries representing major and emerging manufacturers was Jordan, Turkey, Morocco, Egypt, Myanmar, Cambodia, the Philippines, Ethiopia, Kenya and Sri Lanka. Combined the 2 groups comprise 19 countries.

*Consolidative*²

In the first step of the sense-making process, we cast the net wide by searching for as many relevant labour issues and data sources as possible. The process of identifying labour risk in the 19 countries began with a search for academic literature using 2 academic databases, Google Scholar and Scopus. For each country, combinations of search terms were used, with key search terms including 'labour issues', 'working conditions', 'safety', 'garment', 'textile', 'apparel' and 'spinning'. These searches yielded few relevant results. Where there were relevant results, they often included a general discussion of labour risk without evidence of their prevalence and/or severity. Despite this trend, some relevant literature provided useful primary data on labour issues in specific countries.

In the spirit of likening sense-making to cartography (Weick, 2001), we used these insights to start revealing labour risk for the countries in our sample. Following the search for academic sources, we turned our attention to the grey literature. This involved identifying reports published by NGOs and intergovernmental organisations that promote and monitor working conditions in the garment and textile industry. These organisations include the ILO, Better Work, Fair Wear Foundation, Clean Clothes Campaign and Human Rights Watch. Through a comparison of sources, we sought to confirm the legitimacy of our findings for each country. However, this was not possible for all of the selected countries, as the availability and quality of reports varied. Further, the breadth of issues investigated by NGOs and intergovernmental organisations varied. While a

broad range of labour issues were identified in countries that are subject to annual reports on garment factory compliance, reports for some countries had a narrower focus. For example, reports on labour issues in China had a significant focus on forced labour in Xinjiang, potentially overshadowing other issues. Therefore, based on the varied nature of reporting, the issues identified through this process could not be exhaustive.

Based on the academic and grey literature, and taking into account the ILO's Decent Work Framework, we identified nine initial categories of labour issues, each with subcategories. The nine categories were wages and payment; working hours; forced labour; child labour; freedom of association and collective bargaining; discrimination; abuse and harassment; work health and safety; and precarious employment. The next stage was a review of the publicly available data on indicators relevant to the identified labour issues. While a broad approach is needed that identifies indicators that quantify labour risk from various sources (Gold et al., 2015; Mol et al., 2005; Stanczyk et al., 2017), merely quantifying labour risk is not enough: systems of indicators 'must make use of a combination of monitoring of risk indicators [and] triangulation of various data sources' (Gold et al., 2015: 490). Data were sourced from reputable organisations and initiatives, including the Global Slavery Index (compiled by the Walk Free Foundation and the ILO), the United Nations Human Development Indicators, the World Bank's World Wide Governance Indicators, the International Trade Union Confederation, the Wage Indicator Foundation and WomanStats.

As noted, a key challenge in making sense of labour risks comes from the wide array of data sources. In the next step of the sense-making process, we therefore consolidated the emerging data in an ordered form (Ancona, 2011) and impose structure onto the data (Langenberg and Wesseling, 2016). First, we conducted a thorough review of the data collection methodology for each of the identified datasets to rule out any that did not apply appropriate rigour. Specifically, we sought out datasets that were subjected to the least possible number of alterations via arbitrary or poorly transparent manipulations to reduce the risk of artificially modifying the quality of the variables (Fiaschi et al., 2020). In addition, we focused on datasets accompanied by a transparent rather than a proprietary methodology. Having insight into the methods used by third parties to gather data is crucial, as it allows for scrutiny by those citing or using the data. We also excluded datasets that were based on companies self-reporting. Ultimately, while there is no waterproof measure to ensure the veracity of the third-party data being used, by preferencing transparent methodologies, by selecting data that was not subjected to poorly transparent manipulations, and by avoiding self-reported data, we established the validity and reliability of the third-party data to the best of our ability. We then categorised datasets according to the type of risk they measured. Finally, the datasets were disaggregated into individual indicators with each member of the research team providing an assessment of the indicator's relevance and category. This was an iterative process, considering that the databases were not specific to the cotton value chain. The outcome was a series of 23 indicators that were grouped into 5 themes: modern slavery, vulnerable employment, gender inequality, governance and migrant workers (Table 1). This was an important point in the sense-making process, as it reconciles

Table I. Overview of themes and indicators.

Theme/heat map	Indicator	Source dataset
Modern slavery	Overall global slavery index vulnerability score	Global slavery index
Vulnerable employment	% population in modern slavery	UNHDI
	Working poor at ppp \$3.20 a day	
	Unpaid family work and own-account workers	
	Proportion of informal employment in non-agricultural employment	
	Child labour	
	Adult literacy rate	
	ITUC global rights score	
Gender inequality	Union density	ILOSTAT
	Garment worker wage as a proportion of a living wage	Wage indicator foundation
	Mandatory paid maternity leave	UNDHI
	Female share of employment in senior and middle management	
	Comprehensive rape scale	Womenstats
Governance	Voice and accountability	Worldwide governance indicators
	Political stability and absence of violence	
	Government effectiveness	
	Regulatory quality	
	Rule of law	
Migrant workers	Control of corruption	ILO
	Number of migrant workers	
	Migrant workers as proportion of all workers	
	Number of female migrant workers	
	Female migrant workers as a proportion of all workers	

the material and holistic approaches to labour risk by consolidating discrete indicators into thematic groups.

Processual

In accordance with the process orientation of the sense-making approach, and given that labour risk is multidimensional and multi-scalar, we did not calculate an aggregated score for each country, weighted or not. However, we felt that some comparison between countries would be useful to display the findings. This was done by organising the data for each indicator, for each of the 19 countries, by numerical value (lowest to highest) and then assigning a score to each country relative to the lowest and highest values in the sample for a specific indicator, in one of the five risk bands. This method provides a comparative assessment of risk across the sample of countries. So for each country, instead of providing an overall aggregated risk score or index, we presented the relative level of risk

for each of the nine categories. We chose to report the comparative level of risk to make sure that practitioners will engage with the underlying data and gain a finer understanding of the risk, which is facilitated by the multilevel visualisation. (Table 2)

Multilevel

The risk values that were the result of this process were mapped using data visualisation software Tableau. Visualisation can assist in illustrating the sense-making process and has been used as a means to provide insight into labour risks in GVCs (Aqlan and Lam, 2015; Ivanov et al., 2019). We created heat maps for each of the 5 themes that we used to categorise the 23 indicators. Using a geographical map, the data for each country was connected to the relevant area. In addition to this, different colours were assigned to each of the themes, allowing the users of the labour risk tool to display the heat map of their choosing. To visually translate the risk value, different levels of opacity were assigned to the different risk values, where no opacity implies high labour risk for a particular indicator, whereas increasing levels of opacity are associated with diminishing comparative risk. In this way, the user of the labour risk tool is provided with visual cues on the geographical map.

An important feature of the heat maps is that they enable comparative analysis between countries to assist with the identification of risks associated with sourcing from, and exporting to, different regions across the globe. Not only can users of the labour risk tool gain insight into a particular country, but due to the geographical representation, users can also see how labour risk manifests at a regional level. Comparative analysis is also possible by focusing on the labour issues: users are able to select the heat map showing the issue deemed pertinent and see the risk scores for the individual indicators that make up the thematic heat maps (Figure 2 – see Supplemental material online), while users are also able to select a heat map that shows an overall risk score based on the consolidated data of all heat maps (Figure 3 – see Supplemental material online). This approach allows for the moving between different levels of analysis and dimensions of risks, which is a key aim of sense-making as it ‘involves moving from the simple to the complex and back again’ (Ancona, 2011: 4). The labour risk tool, therefore, provides a granular and a holistic view of labour risk.

Table 2. Overview of comparative risk ranking.

Band	Comparative risk
0–20%	1 (much lower risk)
21–40%	2 (lower risk)
41–60%	3 (median risk)
61–80%	4 (higher risk)
81–100%	5 (much higher risk)

Decision-oriented

Actors in GVCs are faced with a great sense of uncertainty. Examples are the volatile trade relationship between Australia and China, and the growing concerns about the treatment of Uyghurs in Xinjiang. Rather than only brands and retailers looking to intervene upstream, actors at various points in the cotton value chain need to manage these challenges by developing an understanding of changing conditions, as the impact of various kinds of risk can differ due to institutional variations and geography. In the context of the Australian–Chinese trade relationship and concerns about Uyghurs being subjected to modern slavery, decisions about exporting to – or importing from – China could be reconsidered. Since the introduction of the Modern Slavery Act in the United Kingdom and in Australia, this issue has become more salient, especially considering that the guidelines accompanying both acts make reference to the reputational and financial risks that companies may suffer.

The use of the labour risk tool should therefore take place against a broader political and economic backdrop. As Yeung and Coe (2015) explain: labour risk in GVCs is connected to economic, product, regulatory and environmental dimensions. Ultimately, the sense-making process should serve ‘as a springboard into action’ (Weick et al., 2005: 409). A key point to emphasise is that approaching labour risk from a downstream rather than an upstream perspective presents challenges. Australian cotton growers differ from fashion brands and retailers in opportunities for leverage and intervention. As the labour risk tool identifies those regions where most Australian cotton is processed further, as well as the types of labour risk common to those regions, it enables strategic decision-making on the part of Australian cotton growers in addressing labour risks. This informs potential interventions such as engagement with downstream buyers in particular regions on specific risks, or the prioritisation of particular regions over others due to their comparatively lower risk profile.

By being multidimensional and multilevel, the prototype tool facilitates strategic consideration of labour risk and integration of the issue with decision-making. However, the initial feedback provided by prospective users indicated that they were not provided with a clear representation of what strategies could be implemented to engage with labour risk. This means that the tool needs to be leveraged to trigger strategic discussions on how to engage with the GVC to mitigate labour risks. This is an ongoing process that is currently being conducted through a mix of stakeholder workshops and case study research.

Conclusion

We used sense-making (Weick, 2001) as a theoretical lens to answer the question: *How can upstream value chain actors identify and engage with downstream labour risks?* Our contribution is twofold. First, we provide new insights into how upstream actors, but also other actors in the value chain, can approach this vexed issue and make sense of labour risk in GVCs. We propose four properties that inform the creation of a tool that makes sense of labour risk in GVCs: consolidative, processual, multilevel and decision-oriented. This is important since labour exploitation is often present in GVCs (Clarke and

Boersma, 2019; Josserand and Kaine, 2016), which is specifically the case in the apparel industry (Baptist World Aid, 2020; Theuvs and Overeem, 2014). Previous research has underlined the difficulties in making sense of risks in GVCs (Ciliberti et al., 2009) and the shortcomings of existing platforms that measure ESG risk using proprietary methodologies that lack transparency (Chatterji et al., 2016; Dorfleitner et al., 2015; Fiaschi et al., 2020; Ruggie, 2019; Semenova and Hassel, 2015). By applying a sense-making lens, we endeavoured to integrate and transcend previous work.

The sense-making approach allowed us to consolidate existing data into a prototype tool. Consolidation allows the combining of diverse datasets and sources in a system of indicators. It integrates a plurality of views and allows for a comparison of sources. The suggested approach allows for dynamic sense-making, where risk is processual and constructed from the perspective, position and objectives of the decision maker. It is important to support sense-making by actors that are positioned at different stages in GVCs (i.e. downstream or upstream). Being multilevel is the third key property. While the literature has recognised the importance of visualisation in relation to labour risks (see, e.g. Gold et al., 2015), the sense-making approach underlines the importance of being able to move from the holistic to the granular, from one geographical area to another, and from one indicator to a broader theme. Finally, the sense-making perspective underlines the importance of integrating labour risks with other dimensions that are important for decision-making. Considerations of political and economic dimensions are important for decision-making, as is the position of the actor in the value chain and the corresponding leverage and potential for intervention.

While the labour risk tool offers an illustration of our approach and demonstrates its practical value, it is still a prototype. This means that it is important to learn from this first experiment and discuss how the tool can be developed further. A key question that arises is the long-term maintenance. For example, the collected information may become outdated quickly. Ongoing consolidation of information from diverse sources is therefore paramount. In sense-making terms: no map is 'right' once and for all. The ongoing consolidation of data might prove to be a costly and labour-intensive process. Technology can be of assistance. The work of Handfield et al. (2020) on machine-based learning is a useful starting point. This approach could support the conception of tool capable of integrating not only newsfeeds but a broader ensemble of data. A related question is what level of granularity is desirable. While our prototype tool offers granularity in terms of labour issues in particular countries, labour issues may differ in subnational regions and localities, and may differ according to the types of goods being produced (Anner, 2019; Mezzadri, 2017). As information at factory level is starting to become available, it would be possible to increase the granularity of the tool.

Our paper contributes to fill the gap of extant research in relation to upstream actors and labour risks that appear downstream in their value chain. This has implications in terms of how both practice and research can approach labour risks in GVCs. We contend that more research and action is needed that adopts a 'book-end' approach, where various actors in the value chain work collaboratively to address labour rights issues. Practically, the paper demonstrates how the sense-making properties can be applied to the complex cotton value chain to assist decision-making, in this case from

the downstream perspective of Australian cotton growers. This can lead to strategically focusing on specific trading partners for the sector. It would be groundbreaking for sellers (i.e. cotton merchants and brokers) to undertake due diligence on their buyers (i.e. spinners) at the request of Australian cotton growers, to ensure that Australian cotton is not mixed with cotton from regions with a high-risk profile, or is not sold to and processed further in certain high-risk regions. There is a range of actions that Australian cotton growers could consider on downstream due diligence. At the request of Australian cotton growers, merchants and brokers could start a dialogue with buyers from high-risk areas, introduce codes of conduct and/or social audits, or include contractual clauses that are concerned with risks that are deemed most pertinent. Cotton industry bodies could engage in public advocacy, for example, by publishing a position statement on downstream working conditions. Advocating for downstream due diligence signals to other value chain actors the intent of the Australian cotton industry to change practices within their sphere of influence. This is important since, as mentioned earlier, risk in GVCs is often beyond the control of one actor and involves several stages in the GVC (Yeung and Coe, 2015).

Apart from being able to avoid, mitigate or remediate reputational risks, downstream due diligence may also provide a competitive advantage. Indeed, because Australian cotton production is highly mechanised and has a lower risk profile compared to regions that rely on manual labour. Within the cotton value chain, Australian cotton could become, or be part of, initiatives that consumers associate with a commitment to ethical production. A proactive approach to downstream working conditions along the GVC can provide the Australian cotton industry with branding opportunities to engage with actors such as fashion brands and retailers that have focused on upstream labour conditions for some time now to collaborate with them and create a specific demand for Australian cotton.

Our paper assists in shaping future research and theoretical insights as it shifts existing academic perspectives on labour risks in GVCs, which have traditionally focused on the ways in which the actions of brands and retailers are detrimental for workers, and on their attempts to mitigate labour abuses from an upstream perspective. While this emphasis on the influence and responsibility of brands and retailers is justifiable given the buyer-driven character of the value chain, the upstream focus negates a more holistic approach by failing to include a downstream perspective on labour risk. We have argued that, even in a buyer-driven GVC, a downstream perspective on labour risks can inform strategic decisions to avoid, mitigate and remedy labour abuses. While the upstream looking buyer-driven efforts over the last decades have not resulted in structural improvements to working conditions, an increased awareness of downstream labour risks amongst producers and a willingness to deal with these risks may result in a 'book-end' approach, which combines upstream and downstream actions by both buyers and producers in the GVC.

This 'book-end' consideration opens important new research avenues. Indeed, research so far has underlined that, beyond the classic distinction between producer- and buyer-driven value chains (Gereffi, 1994), it is important to develop research on how remediation capability could stem from joint efforts of actors placed at different

levels of the value chain (Bair, 2008; Josserand and Kaine, 2016). In particular, there is limited research on how collaborative approaches can be implemented between actors at different levels of the value chain (Josserand and Kaine, 2016), which is specifically one of the actions that the Australian cotton industry could pursue. The present research and the tool developed through the project is the first step in that direction. However, more research is needed on such collaboration. In the fashion industry, there is an opportunity to collaboratively rethink the fast fashion business model and formalise processes for product stewardship throughout the value chain.

Acknowledgements

Thank you to Justine Coneybeer and Sarah Bolger for their invaluable research assistance. Also thank you to the anonymous referees. Any errors are our own.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship and/or publication of this article: This work was supported by the Cotton Research and Development Corporation.

ORCID iD

Martijn Boersma  <https://orcid.org/0000-0001-9789-1046>

Supplemental material

Supplemental material for this article is available online.

Notes

1. ABARES 2020.
2. The order in which we discuss the four sense-making properties in this section differs to that presented above, as this section deals with their on-the-ground application rather than their theoretical construction.

References

- ABC Rural. (2013) Australia's live export trade. Available at: <https://www.abc.net.au/news/2013-05-30/about-live-export-trade/4719636> (accessed 30 September 2021).
- Ancona D (2011) Sensemaking – framing and acting in the unknown. In: Snook SA, Nohria N and Khurana R (eds) *The Handbook for Teaching Leadership: Knowing, Doing, and Being*. London: Sage Publications Ltd, pp. 3–19.

- Anner M (2019) Predatory purchasing practices in global apparel value chains and the employment relations squeeze in the Indian garment export industry. *International Labour Review* 158(4): 705–727.
- Antonini C, Beck C and Larrinaga C (2020) Subpolitics and sustainability reporting boundaries. The case of working conditions in global value chains. *Accounting, Auditing & Accountability Journal* 33(7): 1535–1567.
- Aqlan F and Lam SS (2015) Value chain risk modelling and mitigation. *International Journal of Production Research* 53(18): 5640–5656.
- Bagshaw A (2021). Why the fashion industry is turning to Aussie-grown cotton. ABC Rural. Available at: <https://www.abc.net.au/news/rural/2021-10-19/aussie-cotton-industry-supports-push-for-sustainable-fashion/100547900> (accessed 19 October 2021).
- Bair J (2008). Analysing economic organization: Embedded networks and global chains compared. *Economy and Society* 37(3): 339–364.
- Baptist World Aid (2020). 2020 Covid fashion guide. Available at: <https://baptistworldaid.org.au/resources/ethical-fashion-guide/> (accessed 8 February 2021).
- Barrientos S and Smith S (2007) Do workers benefit from ethical trade? Assessing codes of labour practice in global production systems. *Third World Quarterly* 28(4): 713–729.
- Beske P and Seuring S (2014) Putting sustainability into supply chain management. *Supply Chain Management: An International Journal* 19(3): 322–331.
- Chatterji AK, Durand R, Levins DI, et al. (2016) Do ratings of firms converge? Implications for managers, investors and strategy researchers. *Strategic Management Journal* 37(8): 1597–1614.
- Ciliberti F, de Groot G, de Haan J, et al. (2009) Codes to coordinate value chains: SMEs' experiences with SA8000. *Value Chain Management: An International Journal* 14(2): 117–127.
- Clarke T and Boersma M (2019) Global corporations and global value chains: The disaggregation of corporations? In: Clarke T, O'Brien J and O'Kelley C (eds) *The Oxford Handbook of the Corporation*. Oxford: Oxford University Press, pp. 318–365.
- Clean Clothes Campaign (2019) *Fig Leaf for Fashion. How Social Auditing Protects Brands and Fails Workers*. Amsterdam: Clean Clothes Campaign. Available at: <https://cleanclothes.org/file-repository/figleaf-for-fashion.pdf/view> (accessed 26 September 2019).
- Cotton Australia (n.d.) The Australian cotton industry. Available at: <https://cottonaustralia.com.au/assets/general/Publications/Industry-overview-brochures/Cotton-Australia-Background-Brochure.pdf>.
- Crinis V and Vickers A (eds) (2017) *Labour in the Clothing Industry in the Asia Pacific*. Routledge Studies in the Growth Economies of Asia 134. New York: Routledge, Taylor & Francis Group.
- Dorfleitner G, Halbritter G and Nguyen M (2015) Measuring the level and risk of corporate responsibility—An empirical comparison of different ESG rating approaches. *Journal of Asset Management* 16(7): 450–466.
- Ellis SC, Shockley J and Henry RM (2011) Making sense of value disruption risk research: A conceptual framework grounded in enactment theory. *Journal of Value Chain Management* 47(2): 65–96.
- Fiaschi D, Giuliani E, Nieri F, et al. (2020) How bad is your company? Measuring corporate wrongdoing beyond the magic of ESG metrics. *Business Horizons* 63(3): 287–299.
- Gereffi G (1994) The organization of buyer-driven global commodity chains: How U.S. Retailers shape overseas production networks. In: Gereffi G and Korzeniewicz M (eds) *Commodity Chains and Global Capitalism*. CT: Praeger Publishers, pp. 95–122.
- Gereffi G (1999) International trade and industrial upgrading in the apparel commodity chain. *Journal of International Economics* 48(1): 37–70.
- Gereffi G (2001) Beyond the producer-driven/buyer-driven dichotomy The evolution of global value chains in the internet Era. *IDS bulletin* 32(3): 30–40.

- Giannakis M and Papadopoulos T (2016) Value chain sustainability: A risk management approach. *International Journal of Production Economics* 171(4): 455–470.
- Gold S, Trautrimis A and Trodd Z (2015) Modern slavery challenges to value chain management. *Value Chain Management* 20(5): 485–494.
- Gurney V and Jurewicz P (2013) *To the Spinner: Forging a Chain to Responsible Cotton Sourcing*. Oakland, C.A.: Responsible Sourcing Network. Available at: https://www.sourcingnetwork.org/download_form (accessed 13 April 2021).
- Hammer N and Plugor R (2019) Disconnecting labour? The labour process in the UK fast fashion value chain. *Work, Employment and Society* 33(6): 913–928.
- Handfield R, Sun H and Rothenberg L (2020) Assessing value chain risk for apparel production in low cost countries using newsfeed analysis. *Value Chain Management: An International Journal* 25(6): 803–821.
- Heckmann I, Comes T and Nickel S (2015) A critical review on value chain risk – definition, measure and modeling. *Omega* 52: 119–132.
- Home Affairs (2019) Commonwealth modern slavery Act 2018 - guidance for reporting entities. Canberra. Available at: <https://www.homeaffairs.gov.au/criminal-justice/files/modern-slavery-reporting-entities.pdf>.
- Home Office (2017) Transparency in value chains etc. A practical guide (guidance issued under section 54(9) of the modern slavery Act 2015). London. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/649906/Transparency_in_Supply_Chains_A_Practical_Guide_2017.pdf
- Human Rights Watch (2019) ‘Paying for a Bus ticket and expecting to fly’: How apparel brand purchasing practices drive labor abuses. 23 April. Human Rights Watch. Available at: <https://www.hrw.org/report/2019/04/23/paying-bus-ticket-and-expecting-fly/how-apparel-brand-purchasing-practices-drive> (accessed 20 October 2021).
- Islam MA, Deegan C and Gray R (2018) Social compliance audits and multinational corporation supply chain: Evidence from a study of the rituals of social audits. *Accounting and Business Research* 48(2): 190–224.
- Ivanov D, Dolgui A and Sokolov B (2019) The impact of digital technology and industry 4.0 on the ripple effect and supply chain risk analytics. *International Journal of Production Research* 57(3): 829–846.
- Josserand E and Kaine S (2016) Labour standards in global value chains: Disentangling Workers’ voice, vicarious voice, power relations, and regulation. *Relations Industrielles / Industrial Relations* 71(4): 741–767.
- Koerber CP (2009) Corporate responsibility standards: Current implications and future possibilities for peace through commerce. *Journal of Business Ethics* 89(4): 461–480.
- Koshy E, Koshy V and Waterman H (2011) *Action Research in Healthcare*. London: Sage.
- Langenberg S and Wesseling H (2016) Making sense of weick’s organising. A philosophical exploration. *Philosophy of Management* 15(3): 221–240.
- Locke RM (2003) The promise and perils of globalization: The case of Nike. *Management: Inventing and delivering its future* 39: 1–46.
- Marimon F, Alonso-Almeida M del M, Rodríguez M del P, et al. (2012) The worldwide diffusion of the global reporting initiative: What is the point? *Journal of Cleaner Production* 33: 132–144.
- Mezzadri A (2017) *The Sweatshop Regime: Labouring Bodies, Exploitation, and Garments Made in India*. Cambridge: Cambridge University Press.
- Min H, Park H and Ahn SB (2017) Measuring the supply chain risk in offshoring countries using data envelopment analysis and the analytic hierarchy process. *Benchmarking: An International Journal* 24(7): 1977–1994.

- Mol MJ, van Tulder RJM and Beije PR (2005) Antecedents and performance consequences of international outsourcing. *International Business Review* 14(5): 599–617.
- Mueller M, dos Santos VG and Seuring S (2009) The contribution of environmental and social standards towards ensuring legitimacy in supply chain governance. *Journal of Business Ethics* 89(4): 509–523.
- Nath SD, Eweje G and Bathurst R (2019) The invisible Side of managing sustainability in global supply chains: Evidence from multitier apparel suppliers. *Journal of Business Logistics* 42(2): 1–26.
- Nolan J and Boersma M (2019) *Addressing Modern Slavery*. Sydney: UNSW Press Limited.
- Organisation for Economic Co-operation and Development (2018) OECD Due diligence guidance for responsible supply chains in the garment and footwear sector. Available at: <https://www.oecd-ilibrary.org/docserver/9789264290587-en.pdf> (accessed 5 February 2021).
- Payne A (2021) *Designing Fashion's Future: Present Practice and Tactics for Sustainable Change*. London; New York: Bloomsbury Visual Arts.
- Perry P and Wood S (2018) The international fashion supply chain and corporate social responsibility. In: Fernie J and Sparks L (eds) *Logistics and Retail Management*. London: Kogan Page, pp. 97–127.
- Rao S and Goldsby TJ (2009) Supply chain risks: A review and typology. *The International Journal of Logistics Management* 20(1): 97–123.
- Responsible Sourcing Network (2021) Uzbekistan. Available at: <https://www.sourcingnetwork.org/cotton-initiatives/uzbekistan> (accessed 13 April 2021).
- Roehrich JK, Grosvold J and Hoejmose SU (2014) Reputational risks and sustainable supply chain management: Decision making under bounded rationality. *International Journal of Operations & Production Management* 34(5): 695–719.
- Rosen EI (2002) *Making Sweatshops The Globalization of the U. S. Apparel Industry*. Berkeley, Los Angeles, London: University of California Press.
- Ruggie J (2007) Business and human rights: The evolving international agenda. *American Journal of International Law* 101(4): 819–840.
- Ruggie J (2013) *Just Business: Multinational Corporations and Human Rights (Norton Global Ethics Series)*. New York: WW Norton & Company.
- Ruggie J (2019) Keynote Address. Available at: <https://shiftproject.org/resource/john-ruggie-keynote-finland2019/> (accessed 5 April 2021).
- Semenova N and Hassel LG (2015) On the validity of environmental performance metrics. *Journal of Business Ethics* 132(2): 249–258.
- Simas MS, Golsteijn L, Huijbregts MAJ, et al. (2014) The ‘Bad labor’ footprint: Quantifying the social impacts of globalization. *Sustainability* 6(11): 7514–7540.
- Stanczyk A, Cataldo Z, Blome C, et al. (2017) The dark side of global sourcing: A systematic literature review and research agenda. *International Journal of Physical Distribution & Logistics Management* 47(1): 41–67.
- Supima. (2019) 2019 Supima identity guidelines. <http://supima.com/wp-content/uploads/2019/07/2019-SUPIMA-IDENTITY-GUIDELINES.pdf> (accessed 19 October 2021).
- Sydow J and Frenkel SJ (2013) Labor, risk, and uncertainty in global supply networks – exploratory insights. *Journal of Business Logistics* 34(3): 236–247.
- Theuws M and Overeem P (2014) Flawed fabrics. Centre for Research on Multinational Corporations and India Committee of the Netherlands. Available at: <https://www.somo.nl/flawed-fabrics/> (accessed 8 February 2021).
- Thornton LM, Autry CW, Gligor DM, et al. (2013) Does socially responsible supplier selection Pay Off for customer firms? A cross-cultural comparison. *Journal of Supply Chain Management* 49(3): 66–89.

- Waterman R (1993) *Adhocracy: The Power to Change*. 1st ed. New York: Norton agency titles.
- Weick KE (1995) *Sensemaking in Organizations. Foundations for Organizational Science*. Thousand Oaks: Sage Publications Ltd.
- Weick KE (2001) *Making Sense of the Organization*. Oxford, UK; Malden, MA: Blackwell Publishers.
- Weick KE, Sutcliffe KM and Obstfeld D (2005) Organizing and the process of sensemaking. *Organization Science* 16(4): 409–421.
- Wright CF (2016) Leveraging reputational risk: Sustainable sourcing campaigns for improving labour standards in production networks. *Journal of Business Ethics* 137(1): 195–210.
- Yeung HW and Coe NM (2015) Toward a dynamic theory of global production networks. *Economic Geography* 91(1): 29–58.

Biographical notes

Martijn Boersma is a senior lecturer at the University of Technology Sydney. His research focuses on the intersection of business and society. His work has appeared in journals such as the *Federal Law Review*, *Journal of Business Ethics*, *University of New South Wales Law Journal*, *Business Strategy and the Environment*, *Australian Journal of Corporate Law* and the *Journal of Industrial Relations*. Recent projects focus on modern slavery risks in supply chains, multistakeholder efforts to improve working conditions in the Australian commercial real estate cleaning supply chain and strategies to improve labour conditions within the Australian cotton value chain.

Emmanuel Josserand is a professor of management at University of Geneva, University of Technology Sydney and the Business Science Institute. His research focusses on business and social innovation. Emmanuel has more than 20 years of experience in managing research projects and enjoys working across sectors, industries and disciplines. He has an extensive international publication portfolio with more than 150 publications, including in the best international journals. He was the founder of the Centre for Business and Social Innovation at UTS. Before UTS, Emmanuel was a professor at University of Geneva and an associate professor at PSL-Dauphine University.

Sarah Kaine was an associate professor at UTS Business School for 10 years before moving into her current role in the NSW Department of Premier and Cabinet. Prior to becoming an academic Sarah worked as an industrial relations practitioner and a consultant to not-for-profit organisations. Her research has focused on non-direct employment relationships in supply chains and the digitally enabled economy. Sarah's research has appeared in journals such as the *Federal Law Review*, *Human Relations*, *Journal of Business Ethics*, *Economic and Industrial Democracy*, *Human Resource Management Journal*, *Australian Journal of Labour Law* and the *Journal of Industrial Relations*.

Alice Payne is an associate professor in Fashion at the School of Design, Queensland University of Technology. Her research centres on environmental and social sustainability concerns throughout textile and apparel industry supply chains. Alice has examined perspectives on sustainability along the cotton value chain, the cultural and material flows of post-consumer textile waste and design processes of mass market product developers, independent fashion designers and social entrepreneurs. She is the author of the book *Designing Fashion's Future* and is an award-winning designer and teacher.