



Upgrading through global, regional or national value chains? Firm-level evidence from the East African textiles & apparel sector

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ABSTRACT

This paper introduces the concept of *value chain directionality* to investigate how orientation to different value chains has implications for productive learning and industrial outcomes. We develop and test this concept building on a purposefully designed firm-level survey focused on the textile and apparel value chain in East Africa. Tanzanian and Kenyan textiles and apparel firms lie on a spectrum in terms of their engagement with national, regional and global value chains (NVCs, RVCs and GVCs), with outcomes varying with value chain directionality. GVC firms focus on a narrow range of lower-value functions (mostly garment assembly) while RVC and NVC firms perform a wider range of functions including vertical integration to textile manufacture and higher-value activities such as design and branding, but cases of functional upgrading were rare in all groups. GVC firms were closer to the technological frontier, but RVC and NVC firms were similarly engaged in process upgrading. GVC firms tended to have more complex products than RVC and NVC firms, and only GVC firms had recently engaged in product upgrading. Crucially, results in the area of end market upgrading confirmed the hypothesis that RVCs have the potential to serve as 'learning grounds', or 'stepping stones' to more demanding but potentially lucrative global markets. In other outcomes, GVCs appear to offer greater prospects for rapid employment generation but RVCs and NVCs tend to favour backward integration by incorporating more locally sourced inputs.

1. Introduction

With increasing scepticism towards the idea that integration into global value chains (GVCs) can support broad based development, there are hopes that regional value chains (RVCs) and national value chains (NVCs) can be viable alternatives. The textiles and apparel (T&A) sector has historically been an important strategic manufacturing sector, but the potential for T&A GVCs to support structural transformation in low and lower middle-income countries (LLMICs) today is in question (Morris et al., 2016; Whitfield et al., 2020). The fragility of T&A GVCs was highlighted by the Covid-19 pandemic when orders were cancelled, factories closed and workers fired, but there is evidence that T&A RVCs were more resilient (Pasquali and Godfrey, 2022). This paper explores whether RVCs offer comparable prospects for industrial upgrading to GVCs and NVCs, based on a case study of the textiles and apparel (T&A) sector in East Africa. We present the results of a firm survey carried out in Tanzania and Kenya which asked firms about the production and technology functions performed and upgrading outcomes achieved

along different NVCs, RVCs and GVCs.

In presenting and analysing the survey findings, this paper introduces and tests the concept of 'value chain directionality'. This concept is aimed at capturing a firm's orientation to different value chains, pointing not only towards the nationality of input and output markets but also the characteristics of buyers/sellers and the nature of business relationships. We argue that in assessing drivers of firm outcomes, value chain directionality so defined should be considered independently from other features of value chains and their governance (such as ownership, embeddedness etc.).

The fact that 'what firms export matters' is well established in the literature (e.g. Hausmann et al., 2007); indeed, the idea that exporting certain products has a different impact on firms (and countries) in terms of value addition or productivity was also integrated in the GVC framework by considering the scope for value addition and innovation in different value chain segments (Gereffi, 2018). In her study of the East Asian miracle, Alice Amsden (1986) also highlighted that the direction of trade or 'trade directionality' matters, i.e. the destination of exports is

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an important factor underlying processes of structural transformation in late industrialisers, with greater ‘learning effects’ expected from South-South trade.

Updating the concept of trade directionality for the contemporary era of globalised production characterised by a shift from GVCs to RVCs and NVCs (Horner and Nadvi, 2018), we find that firms’ orientation to different value chains (which capture buyer and seller characteristics regarding input sourcing as well as end markets for finished products, including domestic markets), has distinct but similarly important implications for development strategies and outcomes. In a nutshell, we could say that both ‘what’ and ‘where’ you export matter, but also ‘to whom a firm sells’ downstream and ‘from whom a firm buys’ their inputs upstream matter.

The next sections advance the concept of value chain directionality and frame it within related literature for the T&A sector specifically, after which the results of the firm survey are described and analysed. Survey results are organised primarily by upgrading type – end market, functional, product and process – to allow an ongoing systematic comparison of outcomes across NVCs, RVCs and GVCs and therefore explore the importance of value chain directionality. It is argued that although value chain directionality intersects with other aspects of value chain governance, such an analysis brings new insights to bear on why firms pursue the upgrading strategies observed.

2. Value chain directionality

Mainstream development thinking continues to promote insertion into GVC as a one-size-fits-all pathway to development (World Bank, 2020), which contrasts with the actual strategies of successful East Asian countries to build domestic productive capabilities in NVCs through import substitution while at the same time strategically integrating into RVCs and GVCs through export promotion (Chang 1994, Chang and Andreoni, 2020). Debates about the developmental value of trade with different partners is related to foundational questions in economics around the benefits of trading different products, and whether the real ‘engine of growth’ is trade or industry (Reinert, 2007). While Ricardian classical and neoclassical economists are largely commodity blind (indifferent about exporting ‘potato chips or computer chips’), structuralists and developmentalist scholars highlight the deterioration of the terms of trade of ex-colonies in the global periphery with respect to advanced capitalist countries, linked to their specialisation in the production of primary commodities and manufactured goods respectively, and the need for industrialisation in the periphery (e.g. Prebisch, 1959; Hausmann et al., 2007). These arguments along with the global recession in the mid-1970s led to an increased policy focus on the potential benefits of “South-South” cooperation and especially trade between LDCs, since this is more likely to be composed of manufactures, instead of the South relying on primary commodity exports to the global North (Lewis, 1980; Havrylyshyn, 1987).

Arguments for the benefits of South-South trade depend on the product composition of exports, and the extent to which they allow for learning, skill development and growth in technological and organizational capabilities. In the 1980s these debates took place between neo-classical researchers at the World Bank on one side and ‘developmentalist’ scholars like Alice Amsden and Sanjaya Lall on the other (Havrylyshyn, 1987; Amsden, 1986). They generally agreed that South-South trade was more capital intensive than South-North trade but interpretations differed – neoclassicals worried it was an inefficient result of misguided import substitution policies, while developmentalists saw potential for gains from dynamic comparative advantage. In particular, Amsden (1986) highlighted the importance for East Asian developers (e.g. Japan and South Korea) of South-South trade being more *skill-intensive* than South-North trade, which offers dynamic gains through ‘learning effects’, i.e. the tacit skills and knowledge that can only be acquired through the production process itself, also known as technological and organizational capabilities (Lall, 1987).

The product composition of exports – ‘what you export’ – underpins the significance of trade directionality – ‘where you export’; however, the two are also interdependent as specialisation in the production of certain goods is itself a function of the scale, composition and quality of demand in different export markets. This is at the centre of Amsden’s trade directionality idea. Exports are prioritised in many development strategies because they expand the ‘extent of the market’ and the potential for engaging in increasing returns activities – hence different forms of learning in production by exporting (Chang and Andreoni, 2020). However, the shift in global demand dynamism from North to South in recent decades can result in greater demand for cheaper, undifferentiated goods with generally lower quality standards (see Kaplinsky & Farooki, 2010). Moreover, while early contributions had mainly looked at value chains involving export markets, there is an increasing attention to the role of domestic demand and national value chains as sources of learning (Wolf, 2022; Gray, 2018). While the quality and quantity of domestic demand is often lower, in some sectors and for some products, domestic manufacturers have been exposed to high level of competition from imported products and have responded to such competitive pressure with improved products and standards (Torregiani and Andreoni, 2023). Hence while learning by exporting remains central, learning from competitive pressure from imports also matters.

More recent work on the new geography of global trade calls for in-depth sectoral research to investigate how the context of multiple overlapping value chains impacts developmental prospects and, specifically, firms’ learning (Horner and Nadvi, 2018). Furthermore, evidence points to imports from Southern countries contributing to greater diversity of manufactured exports (Amighini and Sanfilippo, 2014), suggesting the need for analytical attention not only ‘forwards’ in value chains to end markets but also ‘backwards’ to how procurement of inputs from different sources affects upgrading outcomes. This perspective is also corroborated by contributions emphasising how sustained upgrading is the result of several interdependent learning processes at the firm and inter-firm level whereby learning in one stage of the value chain unlocks opportunities for further and different types of upgrading in complementary stages and firms (Andreoni, 2014, 2019). In this sense, looking at ‘value chain directionality’ provides a more comprehensive account of the interdependent learning processes and conditions underpinning upgrading of firms operating simultaneously and sequentially along different NVCs, RVCs and GVCs.

These considerations reinforce the need to look beyond trade directionality – the destination of exports – to value chain directionality, capturing inputs and outputs as well as buyer–seller relationships, and being more suited to contemporary globalised production and the tendency for firm engagement in different value chains simultaneously and sequentially. This paper argues that the value chain directionality of firms has important implications for their learning, upgrading outcomes and capability development, and can be analysed independently from other firm characteristics such as age, embeddedness and ownership.

3. Upgrading in African textiles and apparel value chains

The stages of transformation of fibre to clothing are fragmented internationally, with early case studies in the GVC literature focusing on T&A to explore value chain governance and trajectories of upgrading (Gereffi 1994, 1999). Textiles is generally viewed as a capital and skill-intensive sector, while apparel is more labour intensive with skill-intensity increasing through the ideal-type functional upgrading trajectory in GVCs from basic garment assembly (‘cut, make and trim’ - CMT) to the addition of input sourcing to provide a ‘full package’ service (FOB/OEM) and eventually design (ODM) and branding (OBM) (Gereffi, 1999; Bair and Gereffi, 2003). This builds on earlier accounts of the ‘stages of exporting’ through which low and lower middle-income country (LLMIC) firms may pass from assembly to own-brand manufacture (Wortzel and Wortzel, 1981). Functional upgrading is closely linked to the acquisition and deepening of technological capabilities, as

shown in Whitfield and Staritz' (2021b) matrix mapping upgrading trajectories to capability categories.

Early studies of developing country firms participating in GVCs cast doubt on the applicability of the ideal-type upgrading trajectory, because while buyers support product and process upgrading by suppliers, functional upgrading is prevented since control of marketing, branding and often design is central to their business models (Schmitz and Knorringa, 2000). More recent studies corroborate these findings, with most LLMIC firms in GVCs focusing on garment assembly with little involvement in design, marketing or branding for global markets (Morris et al., 2016; Whitfield and Staritz, 2021a, 2021b).

Several further criticisms of T&A value chain studies guide this research and survey design. First, studies tend to assume that firms operate in a single value chain serving a single end market, neglecting the potential for firms to engage simultaneously with multiple value chains and serve different end markets across regions (Navas-Alemán, 2011). Second, the study of GVCs has resulted in a preoccupation with exporting firms, despite evidence that firms carry out higher value functions in NVCs serving domestic markets (Bazan and Navas-Alemán, 2004). Third, measuring firm performance using upgrading outcomes alone is limiting because upgrading and even the development of technological capabilities need not be accompanied by greater surplus generation or capture in GVCs, with strategic downgrading sometimes preferred by profit-seeking firms (Tokatli 2013).

Evidence from the T&A sector suggests that value chain directionality has significant implications for learning effects and upgrading outcomes. It is well documented that T&A firms often fulfil different value chain functions – with differing levels of skill intensity – for different end markets (Pickles et al 2006). Studies of apparel GVCs have long found different end markets in the global North to offer distinct upgrading opportunities (Palpacuer et al. 2005), but here we aim to contribute to the emerging literature on the implications for structural transformation of value chain regionalisation in the South (Morris et al., 2016).

The apparel sector in Africa has typically been seen through a GVC lens – as a platform to gain access to US and EU markets – with NVCs and RVCs neglected. A recent research project on technological capabilities in Ethiopia's apparel sector focused on exporting firms despite acknowledging the significant domestic market there (Whitfield and Staritz, 2021b). Research has also not sufficiently explored whether African T&A firms engage in multiple value chains simultaneously, or the extent to which the domestic market can provide an impetus for upgrading.

T&A RVCs within Sub-Saharan Africa (SSA) have received little direct attention, but several studies compare regional, transnational and indigenous investors on value chain governance and upgrading outcomes (Morris et al 2016). Although investor nationality does not always correlate with end market, in cases where regional investors serve regional end markets this research provides insights into RVCs. In Lesotho and Swaziland, improved upgrading outcomes were found among firms oriented to the South African market compared to the USA, mediated by ownership and the 'embeddedness' of investors (Morris et al., 2016).

4. Description of survey and results

A survey was designed to assess firm performance and upgrading in the East African T&A sector, with three distinguishing features. First, unlike most surveys of African T&A firms we did not focus exclusively on exporters, also including firms principally oriented to the domestic market. Second, instead of assuming firms engage primarily in a single value chain, we asked firms about their engagement with multiple value chains at the domestic, regional and global levels simultaneously and over time. Third, we 'unbundled' the usual packages of functions found in the T&A literature (CMT, FOB, OBM, etc.) and look beyond apparel manufacture to establish the functions performed for each end market.

Because of the high degree of vertical integration in East Africa, functions across the T&A value chain were included, from spinning, knitting and weaving to garment assembly and various finishing and value-adding processes such as printing, embroidery and washing. While most 'T&A' sector studies focus exclusively on apparel, we also include firms making textiles and fabric products. Non-production activities typically seen as adding more value were also covered such as sampling, input sourcing, design, branding and distribution (see Table 2). These were treated separately to avoid the "indiscriminate lumping together of such high value-added activities" commonplace in T&A studies (Tokatli, 2013). The columns 'Set-up' and 'Product groups' in Table 1 indicate the extent of vertical integration from textile only (for example 'Fp' or 'Y' indicate processed fabrics or yarn respectively), to integrated (i.e. textiles and apparel products) and those specialising in apparel assembly only.

Four upgrading channels were considered in the analysis: function, product, process and end market (Humphrey and Schmitz, 2000; Frederick and Staritz, 2012).¹ Functional upgrading is defined as the recent commencement of a higher value-adding activity or vertical integration process, while functional downgrading is when such an activity is ceased, or when a lower value function is started. Product upgrading (downgrading) is achieved by an overall shift towards more (less) complex products, as judged by interviewees and verified by the researchers where possible. Process upgrading is found when firms reported recent investments in new technologies or organisational approaches. End market upgrading – a partial change in value chain directionality – occurred when a company reported having recently started selling to a 'higher value' end market (or buyer, to fit with our definition of value chain directionality), with end market downgrading being either the withdrawal from such a market/buyer or when starting to sell to a 'lower value' end market or buyer – as defined in Section 5.1. The timeframe for 'recent' upgrading was loosely defined as the last 3–5 years but significant changes that happened earlier are also included and flagged in the analysis. Upgrading cases were identified during semi-structured interviews based on the definitions given here.

To avoid over reliance on the concept of upgrading, additional measures of firm performance and social outcomes were included, namely capacity utilisation and employment, with more sensitive sales, profit and wage data not available for the whole sample. The extent to which firms made linkages to the broader economy is captured through questions on local content. General information was also collected about ownership and firm history to contextualise findings.

The EAC has made major progress in regional integration and has a policy focus on T&A, yet no studies have looked in-depth at the potential of RVCs and NVCs there. Tanzania and Kenya have the most developed T&A sectors, together accounting for almost all EAC exports of apparel products. Our exploratory survey was carried out in 2019, covering all 8 large T&A firms operating in Tanzania along with 11 of the 19 large firms operating in Kenya. Large firms were the focus because of their industrial nature and disproportionate economic importance, with official data showing that in recent years the 8 largest Tanzanian T&A firms – each employing over 500 employees – contributed nearly two-thirds of sector value added and 70% of employment (Boys and Andreoni, 2020). The sample in Kenya was chosen to be representative of the population of large T&A firms (in terms of their ownership, value chain directionality, functions etc.) and also based on the availability of managers. Most (6) of the large Kenyan firms not surveyed were foreign owned CMT-focused apparel manufacturers operating in EPZs, a group which was anyway well represented in the survey. Several Tanzanian and Kenyan 'firms' in our sample consist of multiple legal entities across multiple factories and sites, but when managed as integrated businesses

¹ Inter-sectoral/chain upgrading was considered through questions about the business or parent group, but little was found. Supply chain upgrading (e.g. vertical integration) is considered as a type of functional upgrading.

Table 1
Firm characteristics, value chain directionality and outcomes.

General characteristics						Input sourcing by market			Outcomes and products			Sales by market (%)			Up/ downgrade outcomes			
ID	Country	Ownership	Decade est.	EPZ	Set-up	National	Regional	Global	Employees	Cap. Ut'n	Product groups	National	Regional	Global	Function	Product	Process	Market
1	T	L	1960s	–	Textile	C	–	D	500	35	Fp Y	96	4	–	–	–	↑	↑
2	K	Lg	1950s	–	Integrated	C	C	Ys T	1765	70	Fp A Y	90	5	5	–	–	↑	–
3	K	L	1950s	–	Textile	C	C Ys	Ys	650	60	Fp	90	10	–	–	–	↑	–
4	T	Lg	1980s	–	Integrated	C	–	Ys	2600	70	Fp Fi A	85	14	1	↑	–	–	–
5	K	L	1970s	–	Integrated	–	–	Ys S	1530	85	Fp A Y	80	20	–	–	–	↑	–
6	K	L	1970s	–	Textile	Yc	Yc	Ys D	200	75	Fp	75	25	–	↓	–	↑	↓
7	K	L	1970s	–	Apparel	Yc	–	Ys	425	40	A	70	27	2	–	–	↑	↓
8	K	L-P	1970s	–	Integrated	C	C	S	700	30	Fp Fi Y A	60	40	–	–	–	↑	–
9	T	Lg	1960s	–	Textile	C	–	D	1900	42	Fp	60	40	–	–	–	↑	–
10	T	Lg	1960s	–	Apparel	–	Y	Y T	1200	60	A	50	50	1	–	–	↑	↑
11	T	L	1960s	–	Integrated	C	C	Y T	2500	100	A Fp Fi Y	25	71	4	–	–	–	–
12	K	L	2010s	✓	Apparel	–	–	All	320	75	A	10	–	90	↑	↑	↑	↑
13	T	Fc	2010s	✓	Textile	C	–	–	150	50	Y	–	–	100	–	–	–	–
14	T	Fc	2010s	✓	Apparel	P	–	F T	2560	91	A	–	–	100	–	–	↑	–
15	T	Fc	2000s	✓	Apparel	–	–	All	2550	85	A	–	–	100	–	↑	↑	–
16	K	Fi	2010s	✓	Apparel	–	–	All	2000	90	A	–	–	100	–	↑	–	–
17	K	Fc	2010s	✓	Apparel	–	–	All	6000	100	A	–	–	100	–	–	↑	–
18	K	Mi	2000s	✓	Apparel	P	–	F T	2500	100	A	–	–	100	–	–	↑	–
19	K	Fc	2000s	✓	Apparel	–	–	All	6690	100	A	–	–	100	–	↑	↑	–

Notes:

- Country - T: Tanzania, K: Kenya.
- Ownership - L: local; Lg: part of locally owned business group; P: Publicly owned; Fc: Foreign company; Fi: Foreign individual; Mi: mixed (foreign and local) individuals.
- Input sourcing: C: cotton, Y: yarn (of any fibre) Ys: yarn (synthetic), Yc: yarn (cotton), P: packaging, F: fabric, T: trims (zips, buttons, etc.), S: synthetic fibre, D: Dyes, All: all inputs for apparel manufacture (fabrics, trims, threads, packaging, etc.).
- CU: capacity utilization, average for 2018, %.
- Product groups (listed by share of sales): A: apparel, Fi: fabric (intermediate/unfinished/greige/grey), Fp: fabric (processed - kanga & kitenge, bedsheets, etc.), Y: yarn.
- Sales by market, share of total (%). National (Kenya or Tanzania), regional (sub-Saharan Africa), global (elsewhere).
- Percentages do not sum to 100 due to rounding.

Table 2
Value chain functions and markets served.

ID	Backward integration functions			Apparel and fabric value chain functions by end market								
	Spin	Knit/fin.	Weave/fin.	Design	Sample	Input source	Cut/sew/fin.	Print	Embroidery	Wash	Brand	Distribution
1	NR	–	N	N	N	N	–	N	–	N	N	N
2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	N
3	NR	–	NR	NR	NR	NR	–	NR	–	NR	NR	–
4	NRG	N	NR	NR	NR	NR	N	NR	–	N	N	N
5	NR	NR	NR	NR	NR	NR	NR	NR	NR	–	NR	–
6	–	NR	–	–	–	NR	–	–	–	–	NR	–
7	–	NRG	NRG	NR	NRG	NRG	NRG	NRG	NRG	NRG	NR	–
8	NR	–	NR	NR	NR	NR	N	NR	NR	NR	NR	–
9	NR	–	NR	NR	NR	NR	–	NR	NR	NR	NR	N
10	–	NRG	–	N	NRG	NRG	NRG	NRG	NRG	–	N	–
11	NRG	NRG	NR	NG	NRG	NRG	NRG	NR	NRG	N	NG	N
12	–	–	–	–	NG	NG	NG	NG	NG	–	–	–
13	G	–	–	–	–	G	–	–	–	–	–	–
14	–	–	–	–	G	–	G	–	G	G	–	–
15	–	–	–	–	–	–	G	–	–	–	–	–
16	–	–	–	–	G	–	G	–	G	G	–	–
17	–	–	–	–	G	–	G	–	G	–	–	–
18	–	–	–	–	G	G	G	G	G	G	–	–
19	–	–	–	–	–	–	G	G	G	G	–	–

Notes: All functions (backward integration, apparel and fabric) are those performed ‘in-house’ by the firm surveyed. N, R, G mean that function is performed for NVCs, RVCs and GVCs respectively.

they are treated as single firms. Most interviewees were with the CEO/director and/or senior managers overseeing production, marketing etc. as relevant to the questions asked.

Tables 1 and 2 present the survey data, listing firms according to their value chain directionality, i.e. their engagement with different types of value chains at the national, regional and global level. This categorisation is based on firms’ input sourcing and output sales by end market, along with qualitative data about firm history and strategy. Firms 1–5 are overwhelmingly oriented to domestic markets/buyers for both inputs and outputs, so are labelled ‘NVC firms’, with their sales in regional and global markets being incidental and not forming a core part of their strategy. In contrast, regional sourcing and/or sales are essential to the strategies of Firms 6–11, so these are denominated ‘RVC firms’ even though they also maintain a strong foothold in domestic markets, especially for lower value products. Although Firms 6 and 7 sell only around one quarter of outputs regionally, they both re-oriented their exports from global to regional markets so the latter are crucial to their strategy. Firms 12–19 can be straightforwardly termed ‘GVC firms’ due to their global market orientation for inputs and outputs, a business model usually characterised by foreign ownership and location in EPZs.

5. Upgrading and value chain directionality

5.1. Buyers, inputs and end market upgrading

This section examines the nature of the different value chains to which the firms surveyed were oriented, in terms of the characteristics of buyers and sellers of outputs and inputs respectively. The importance of the ‘forward-facing’ aspect of value chain directionality is reflected in the upgrading literature on lead firms – mostly buyers – and end market (or ‘channel’) upgrading, where T&A value chains are characterised as ‘buyer-driven’ with different end markets offering distinct upgrading opportunities (Gereffi, 1994; Palpacuer et al. 2005; Gibbon 2008). This research examines which end markets offer the greatest potential for value creation, capture and upgrading, but from the perspective of firms a change of end market is associated with a judgement as to the strategic benefits it offers, which is the approach taken here. We therefore do not assume that global markets necessarily offer ‘higher value’ to suppliers, since the nature of GVCs – and arguably their purpose – is to squeeze supplier margins.

Due to their insertion into ‘triangular’ manufacturing networks, GVC firms formed a clearly distinct group among those surveyed, located in

EPZs and exporting almost all their production to the USA duty free under AGOA. The only exceptions were locally owned Firm 12 which maintained a small share of domestic sales (10%), and the spinning mill (Firm 13) which exported all its yarn to China. For GVC firms owned by foreign companies, links with buyers were managed by the parent company, with buyers including major retailers and owners of brands including Lee, Wrangler, Dickies, Levi’s etc. For GVC firms with other forms of ownership, links to buyers were either direct or through agents, with products including branded items and more generic lines such as uniforms.

RVC and NVC firms combine sales in domestic and regional markets, with no obvious sales threshold distinguishing the two groups, however regional markets were strategically important to Firms 6–11 (our ‘RVC firms’), with 25% or more of sales in the region. Kenyan firms were overall more NVC-oriented while Tanzanian firms were more RVC-oriented, reflecting the larger size of the domestic market in Kenya and Tanzania’s duty-free access to the high-value South African markets via the SADC (Southern African Development Community) FTA (free trade area). Tanzanian RVC firms were more oriented to SADC countries (particularly South Africa but also Mozambique and others) while Kenyan RVC firms exported to EAC countries and DRC. South African buyers were retailers such as Edcon/Edgars, who govern RVCs originating in Tanzania with more arm’s length/contractual arrangements than in Lesotho and Swaziland where they directly own production facilities (Morris et al., 2016). For other SSA countries, buyers were mostly distributors and wholesalers with market-based governance arrangements.

The survey results suggest that RVCs have the potential to enable end market upgrading, serving as “stepping stones” to enter GVCs (Franssen, 2020). Three cases of end market upgrading were found, the most notable being Tanzanian RVC Firm 10 which was in the process of shifting its export focus from South Africa to the USA. For the firm this was clearly end market upgrading because meeting the stricter product quality and consistency requirements of US buyers required investment in improved production processes, however it was too early to judge the long term profitability of this strategic decision and whether price pressure due to asymmetric governance will limit developmental potential. Since buyer characteristics are defining features of value chains and a core part of the concept of value chain directionality, this case shows the importance of the latter concept in driving upgrading outcomes. Tanzanian ownership was important for this upgrading to have occurred; by contrast the South African-owned manufacturers in

Lesotho and Swaziland have been set up to serve the South African market, making end market upgrading unlikely (Morris et al., 2016). Locally owned GVC-oriented Firm 12 also exported to South Africa, albeit only briefly, before turning to the US market which it saw as offering higher volumes and potential profits. NVC-oriented Firm 1 recently started exporting yarn to the regional market but only for a very small proportion of sales, more as an outlet for surplus produce than as a 'stepping stone' to GVCs, but still a potential high-value opportunity in the medium-term.

There were two cases of end market downgrading, driven by changes in the global trade policy regime and concomitant reduced competitiveness. Kenyan Firms 6 and 7 both exported to EU retailers in the 1990s and 2000s, but after the phase out of quotas under the Multi-Fiber Arrangement (MFA) they lost market share to Asian (especially Chinese) producers and had to downgrade to what they saw as lower value regional markets. Rather than being a case of 'strategic downgrading' (Ponte and Ewert, 2009) or even 'strategic diversification' (Barrientos et al., 2016) this is simply a case of exclusion from global markets following the removal of a policy rent. Nevertheless, these cases suggest that even relatively weakly protected domestic markets/NVCs can be more lucrative than GVCs if rents in global markets are diminished due to changing trade regimes.

Firms were asked about opportunities in different end markets, with global markets (especially US and EU lead firms) seen as the most demanding and profitable to serve because although major buyers have power to squeeze supplier margins, they can also place consistently bigger orders which are seen as paying off over time. Relative perceptions of regional and domestic markets varied with income levels, market access and degree of protection. Tanzanian firms preferred regional markets because of access to higher-income South Africa and Kenya under SADC and the EAC respectively, particularly vertically integrated apparel producers eligible under SADC's double transformation Rules of Origin to export duty free to South Africa. These firms had developed supply links to South African retailers serving higher-value, 'middle-class' market segments with relatively demanding quality standards for the region. For other Tanzanian firms focused on processed fabrics, regional markets (e.g. Mozambique) were on a par with the domestic market in terms of profitability and quality requirements, but some were unable to compete in neighbours with particularly high levels of import penetration (e.g. Zambia). For Kenyan firms, tariff barriers with South Africa make direct, formal exports there prohibitively expensive, and most other African country markets have lower incomes per capita than Kenya. NVCs are often therefore seen as more demanding and attractive to enter than RVCs for Kenyan firms, yet buyer type is critical, with Kenyan department stores the most demanding lead firm in NVCs while Kenyan wholesalers are on a par with counterparts in DRC, Tanzania, Zambia, Malawi etc. Overall, for any given market segment, expectations and quality standards are similar across the region and rising due to the availability of highly competitive goods imported from global markets.

Just as the end markets of value chains have implications for upgrading, so too do the source markets for inputs and the characteristics of buyer-seller links. Policymakers are highly concerned with the amount of local content in finished products, i.e. the extent to which manufacturers develop backward linkages within local production systems. NVC and RVC firms were far more likely to source inputs – particularly cotton – from their own and neighbouring countries, meaning they are truly NVC and RVC oriented in both inputs and outputs. This is due to firms in these groups being vertically integrated, with cotton lint a key input to their spinning operations and available locally through a large number of ginners and traders. There was a tendency towards domestic rather than regional sourcing of cotton, especially in Tanzania where availability is greater, but overall most firms engaged in spinning also sourced cotton regionally (mainly from Uganda). Several firms also sourced synthetic yarn at the regional level, spun from imported inputs. GVC garment assemblers sourced negligible inputs

locally, only packaging in a couple of cases, due to the requirement of global buyers that their suppliers use specific inputs to achieve product consistency, and the unavailability locally of appropriate fabrics and trims meeting international standards. Supporting this explanation, GVC firms pointed to the strong incentives they face to source locally wherever possible as it would allow lead times to be dramatically reduced, a major priority of buyers. The concept of upgrading with respect to input sourcing has not been developed in the literature, but from our interviews might be linked to sourcing higher quality inputs more locally. In any case, few changes in input sourcing strategies were reported, as the availability of local inputs has not recently changed. Nevertheless, the availability of cotton locally critically underpins the prospects for vertically integrated NVC and RVC firms' business and upgrading strategies.

5.2. Functions and functional upgrading

The functions carried out by firms largely determines the benefits they gain from value chains, so functional upgrading towards higher value activities (like design and branding) is often a key objective (Humphrey and Schmitz, 2000). Functional range is linked to governance arrangements, e.g. whether buyers or suppliers have more relative power, and the types of market and non-market coordination observed (Gereffi et al., 2005). In T&A GVCs, changing trade policy regimes have resulted in 'triangular' manufacturing arrangements whereby US and EU lead firms retain overall dominance but outsource production to increasingly powerful first-tier suppliers in East Asia, who often carry out manufacturing in LLMIC subsidiaries to benefit from preferential market access (Pickles et al., 2015). Scepticism about the potential for LLMIC suppliers to functionally upgrade in T&A GVCs, e.g. due to endogenous power asymmetries (Milberg and Winkler, 2013), is a motivation underlying research on NVCs and RVCs. This section argues that value chain directionality is a key aspect of governance impacting functional range and upgrading outcomes.

The survey results in Table 2 show that NVC and RVC firms carry out a much greater range of functions – from input manufacture to design and branding – across end markets than GVC firms. The findings on functional range corroborate for East African LLMICs what has previously been found in higher-income regions, e.g. in Brazil (Bazan and Navas-Alemán, 2004). Nevertheless recent changes in functional range were rare in our sample, with only two upgrading cases and one downgrading. For NVC and RVC firms, all established between 1950 and 1980, this may reflect inertia, especially for those with low rates of capacity utilization. The disappointing functional upgrading performance of RVC firms is concerning for policymakers hoping that RVCs can support industrial upgrading and industrialization within mega-FTAs such as AfCFTA.

For garment and fabric production, GVC firms performed the narrowest range of functions followed by RVC and NVC firms. All NVC and RVC oriented firms were vertically integrated (spinning, knitting or weaving), while only one GVC firm was. Furthermore NVC firms were all fully vertically integrated, i.e. both spinning yarn and knitting or weaving fabric), while half of RVC firms were. NVC and RVC firms also mostly offered the full range of auxiliary value-addition services (printing, embroidery, washing, etc.) relevant to their products. Of the 7 GVC apparel manufacturers, one was CMT only, with the rest also embroidering (6 firms), sampling (5), washing (4) and printing (3). The importance of these functions varies with firm strategy, but they generally allow greater flexibility to meet buyer needs.

Input sourcing is an important function in T&A, allowing the provision of a 'full package' service valued by buyers (Bair and Gereffi, 2003). NVC and RVC firms all sourced their own inputs but only three of eight GVC firms could, while the rest relied on buyers to nominate suppliers or overseas headquarters to provide them directly. The three full package GVC firms differed from others in important ways, through ownership – being wholly or partially locally owned – or their business

model, i.e. a spinning mill producing only yarn from local cotton. The full package GVC apparel firms had direct links to buyers, while for others overseas headquarters managed relationships. These findings provide further grounds for scepticism that asymmetric T&A GVCs are routes to meaningful upgrading for LLMICs.

Regardless of ownership characteristics, no GVC firms carried out higher value functions (design, branding or distribution) in East Africa while all NVC and RVC firms performed at least one. Although NVC and RVC firms carry out similarly high value functions, RVC firms perform them for higher value markets through their higher sales to more demanding buyers in regional markets (especially South Africa) as well as some exports to global markets. A contribution of a value chain directionality lens is to bring the differences between NVC and RVC firms into analytical focus, whereas by looking at e.g. ownership or embeddedness alone these two groups would appear homogeneous since they are all locally owned.

There were only two cases of functional upgrading, which is surprisingly few given the number of NVC and RVC firms surveyed and the evidence that they are more likely to functionally upgrade due to less asymmetric governance (Navas-Alemán, 2011). Both cases of functional upgrading found were by locally-owned firms as expected, however the remaining 10 locally owned firms did not functionally upgrade. The scarcity of recent cases of functional upgrading is linked to their value chain directionality, especially weak demand in end markets and low buyer standards, and also reflects the well-established business models of NVC and RVC firms, the fact that they already carry out many high value functions. In both cases of functional upgrading, investment was made on the guarantee of a policy rent. Other firms hoping to invest in functional upgrading also stressed the importance of rents to finance learning, along the lines set out by Khan (2013a).

One upgrading case was by Tanzanian NVC Firm 4, which added knitting and garmenting capacity on the basis of firm-specific rents from public procurement contracts, a case which shows the potential of public sector buyers in national value chains – and therefore value chain directionality – in driving functional upgrading. The other functional upgrading case was the fully locally owned GVC Firm 12, which upgraded from CMT garment assembly as a subcontractor, first to having direct buyer links then to full package production and added embroidery and printing services. In this case local ownership and embeddedness clearly explains its functional upgrade, since the local owners have incentives to maximise profits in Kenya and improved their margins through upgrading. Foreign-owned firms had no intention to functionally upgrade, with high-value functions reserved for head offices, mainly in Asia. This reflects how powerful firms can exploit ‘endogenous asymmetries’ in apparel GVCs to reserve higher value functions for themselves (Milberg and Winkler, 2013; Pickles et al., 2015).

One case of functional ‘downgrading’ was found in the survey, that of Kenyan Firm 6 which strategically sold off its garmenting section to focus on its core business of fabric manufacture. While the movement out of a high value activity results in the functional downgrading label, the firm simultaneously invested in process upgrading for fabric manufacture and successfully maintained competitiveness with imports. This lends support to criticisms of the upgrading framework which downplays the imperative of strategic downgrading to maintain profitability that often presents itself, positing a ‘value hierarchy’ despite the fact that any activity can be performed at different levels of technological and organisational complexity (Tokatli, 2013; Ponte and Ewert, 2009).

5.3. Products and product upgrading

The complexity and variety of products made is an indicator of firms’ technological capability. GVC firms in our sample tended to make more complex products, followed by RVC and NVC firms, with all four cases of product upgrading found among GVC firms. Bazan and Navas-Alemán

(2004) also found strong product upgrading among GVC firms in Brazil, linked to quasi-hierarchical governance arrangements and foreign ownership, but half the cases in East Africa were among fully and partially locally owned firms.

NVC firms focus on processed fabric products (kanga, kitenge, bed linen, masai shuka and uniform fabric) in demand by NVC buyers, mainly wholesalers and distributors. Respondents said these products are less technologically complex and skill-intensive to manufacture than garments, as reflected in lower export unit values. The few NVC firms producing garments focused on basic products like T-shirts and uniforms. RVC firms produced the widest range of products, including finished fabric and textile items, basic T-shirts, more complex polo shirts, tops and bottoms. The most complex products in NVCs and RVCs were for lead firms in South Africa and Kenya, mainly retailers and supermarkets. Among GVC firms there was varied product complexity, with some basic items like yarn and uniforms but generally firms had the capability to produce a range of garments according to buyer and parent company needs including knitwear, wovens, sportswear, casualwear, workwear etc., almost exclusively for the USA through AGOA. The most complex products in the survey were made by GVC firms, for example denim jackets by a firm in Kenya.

Firm-level export data was not available in Kenya, but Tanzanian apparel producing RVC firms had higher export unit values than GVC firms in 2017 (Boys and Andreoni, 2020). This partly reflects the particularities of the few firms captured, with RVC firms exporting small volumes to the highest value regional market – South Africa – and GVC firms exporting larger volumes of homogeneous products to the USA. If all Tanzanian RVC firm exports were included, especially processed fabric products to less demanding markets, average export unit values would be lower. Morris et al (2016) find that South African-owned factories in Swaziland and Lesotho produce high value apparel for South Africa, but evidence from Tanzanian RVC firms shows that high value regional apparel exports are also possible in arm’s length and market-based contractual arrangements.

The four product upgrading cases were exclusively found among GVC firms, especially more embedded ones, driven by strategy changes by parent companies; the need for new non-US buyers after AGOA; changing demands of US buyers; and firm strategies to move into higher value segments. Two product upgrading cases occurred in the most hierarchical governance arrangement of directly Asian-owned factories, one due to strategy changes, the other due to AGOA’s expiry in 2025 motivating the production of new, more complex products for other markets. In this latter case the potential loss of market access was a ‘vulnerability shock’ threatening the viability of firm strategy, which Pipkin and Fuentes (2017) find to be a common stimulus for upgrading.

The other two cases of product upgrading were by GVC firms in more relational governance structures. One was locally owned Kenyan Firm 12 which increased product complexity, from very basic 5-piece t-shirts to more complex 12 piece ones, requiring upskilling of workers and new machinery. This is part of a strategy to maximise value creation and retention in Kenya, as expected for a locally owned firm. The other case was Firm 16, owned by a foreign individual with no overseas parent company, which moved from producing basic scrubs only in 2012 to more complex casualwear including jeans and denim jackets for major US brands. The owner came to Kenya to manage another factory but stayed to start his own, therefore having strong incentives to maximise profits through product upgrading in Kenya like a local investor. This shows that some foreign investors are more ‘embedded’ than others, an under-explored issue in the literature (Morris et al., 2016). The success of the Bangladeshi garment industry is partly attributed to factory managers setting up their own companies (Khan, 2013b) but only one such case was found in East Africa, suggesting an area of exploration for policymakers.

5.4. Technology and process upgrading

The age of firms' equipment indicates their capacity to manage technical change and their technological capabilities in the domain of investment (Lall, 1987). Having the newest technologies and engaging in organisational process upgrading, GVC firms perform best in this area, followed by RVC and lastly NVC firms, although the effectiveness of upgrading is called into question for firms with low rates of capacity utilisation. The foreign ownership found among most GVC firms surveyed is conducive to process upgrading (e.g. Navas-Alemán, 2011), but notable cases were also found among the wholly and partly locally owned GVC, RVC and NVC firms. This shows the importance of value chain directionality in analyses of governance and upgrading and looking beyond the local vs foreign ownership binary.

GVC firms used the most up to date technologies, followed by RVC and NVC firms. Most NVC firms were using equipment aged 20–30 years old or more, especially in their spinning and weaving sections. RVC firms had newer equipment on average but with a wide range, some firms having machines around 20–30 years old alongside recent acquisitions, and a few having only technology from the last 10 years or less. GVC firms' production technologies were all less than 10 years old and several only had equipment less than 5 years old at the time of the survey.

Process upgrading was found among all firm types to maintain and enhance competitiveness, but there was variation in investments and motivations according to value chain directionality. NVC firms mostly replaced obsolete machinery because spare parts were becoming scarce, but also invested in equipment necessary to compete with imported T&A products. RVC and GVC firms engaged in more continuous process upgrading, driven by the business strategies of foreign owners (GVC firms), buyer demands (e.g. live order tracking, reduced lead times) and the need to maintain and expand market share amidst intense competition. Although they still mostly invested in new machines, they also improved factory organisation (e.g. adopting Kaizen principles; skills training; tightening quality assurance) resulting in greater productivity, particularly GVC firms. A value chain directionality lens highlights the differences between NVC and RVC firms that would be missed through analysing other governance factors such as ownership alone, since NVC and RVC firms are all locally owned.

Other factors help explain the process upgrading and value chain directionality outcomes, especially the date of initial investment, with older NVC and RVC firms obliged to replace older machines to remain operational. All the GVC firms surveyed were established since the year 2000 and have more recent technologies for that reason alone. Furthermore the type of investment is important, with NVC and RVC firms all having some capital-intensive vertical integration processes where machinery is more costly to upgrade. By contrast the main machinery for GVC apparel manufacturers is sewing machines which are generally cheaper to replace.

5.5. Firm characteristics and other outcomes

Having analysed the main survey results on value chain directionality and upgrading, we now turn to some general characteristics of firms – especially ownership and age – as well as other, non-upgrading outcomes. In the GVC literature on value chain governance, ownership is closely linked to key strategic decisions around firm set-up, sourcing and sales which determine the distribution of power between actors and resulting access to resources and potential to upgrade (Gereffi et al., 2005). In SSA T&A value chains, ownership has been established as a useful proxy for how governance affects firm-level upgrading, with locally owned firms more 'embedded' and engaged in upgrading (Morris et al., 2016).

In our sample ownership was highly correlated with value chain directionality, but we argue that while these aspects of governance may be intertwined empirically, they can be usefully analytically

distinguished when assessing firm outcomes. All NVC and RVC firms were locally owned and almost all GVC firms foreign owned, but a close reading of the results suggests that ownership and value chain directionality have independent effects on upgrading. The case of Firm 12 demonstrates the potential for GVC firms to be locally owned, while RVC-oriented Firm 9 has been classified in some studies and media reports as foreign owned. Local ownership was critical to Firm 12's strategy to pursue functional and product upgrading, corroborating the importance of embeddedness. However GVC Firm 18 – with mixed local and foreign ownership – had no inclination to upgrade its products or functions, and GVC Firm 16 owned by a foreign individual was engaged in product upgrading but had no plans to functionally upgrade. Most crucially, among all 11 locally owned NVC and RVC firms, only one functionally upgraded and none upgraded their products, supporting the proposition that upgrading analyses should flexibly combine governance factors including firm characteristics and value chain directionality.

Another clear difference between the groups of firms is their age, which along with changing policy regimes is an important factor explaining outcomes. NVC firms were the oldest group, with several having started operations in the 1950s. RVC firms started more recently on average, mostly in the 1960s and '70s, while GVC firms were all established since the year 2000. NVC and RVC firms were therefore all set up on the basis of protected domestic markets, several as state-owned enterprises in the case of Tanzania. Rents from tariff protection and a policy stance favouring import-substitution industrialization encouraged vertically integrated business models, explaining their predominance. The era of liberalisation from the 1990s and a policy shift towards export-oriented industrialization laid the ground for the establishment of GVC firms on the basis of rents from EPZs and international trade regimes. Many former NVC and RVC firms have ceased operating, while the remaining ones often operate at low levels of capacity utilization and struggle to maintain competitiveness.

Upgrading is the main framework for interpreting the survey results, but studies have highlighted the limitations of upgrading for understanding firm performance in value chains (Gibbon, 2008; Tokatli, 2013; Ponte and Ewert, 2009). We therefore sought information from firms in other areas and report here on employment and capacity utilisation. A major motivation for government efforts to promote T&A in LLMICs is employment creation, so these outcomes are particularly important. RCV and NVC firms engaged more in capital-intensive functions such as spinning, knitting, weaving and fabric processing which require fewer employees. NVC firms had on average more employees than RVC firms, at around 1400 and 1200 respectively, although among RVC firms, the most regionally oriented producers (with 40% or more of sales in regional markets) tended to have more employees. GVC firms were more labour-intensive, most having over 2000 workers and two having 6000 or more. The results show the potential for sustaining mass employment in all value chain types, particularly more labour-intensive garment manufacture, but investment in GVC-oriented production has had the greatest jobs creation impact in recent decades. On employment quality, those selling to US lead firms were subject to demanding social compliance requirements, through schemes like WRAP (Worldwide Responsible Accredited Production) or buyers' own codes of conduct. By contrast, the most prominent lead firms in RVCs and NVCs – South African and Kenyan retailers – did not impose notable social compliance requirements.

The level of capacity utilisation can be a proxy of productive efficiency, but also captures whether business and upgrading strategies are aligned with market demand and adaptable to changes in buyer requirements as fashions change. Among a heterogeneous group of firms making a wide range of products with varying technologies, as in our survey, it is a simple measure allowing comparison of performance and was familiar to all firm managers. There was a clear tendency for GVC firms to be operating at higher levels of capacity utilisation, at 90–100% in more than half of cases and 86% on average. NVC and RVC firm

operate at lower levels of capacity utilisation, at 64% and 58% respectively on average. RVC and NVC-oriented firms stressed the importance of weak demand in explaining low capacity utilisation, as well as a range of internal and external factors that negatively impact productivity and competitiveness. The NVC and RVC firms with the lowest levels of capacity utilisation nevertheless reported recent process upgrading, calling into question whether their investments were sufficient to achieve competitiveness. Furthermore, high rates of capacity utilisation were not necessarily associated with strong upgrading performance – the RVC firm with full capacity utilisation did not report any recent upgrading.

6. Discussion and concluding remarks

Building on the new concept of value chain directionality, in this exploratory study we observe important variations in firm characteristics and upgrading outcomes according to their value chain orientation. We argue that firm orientation to NVCs, RVCs or GVCs in itself appears an important factor for understanding outcomes, and may be analysed independently from other aspects of value chain governance such as ownership and embeddedness even where they are closely correlated.

Cases of changes in value chain directionality – particularly end market or ‘channel’ upgrading – confirm that NVCs and RVCs have the potential to serve as ‘learning grounds’ or ‘stepping stones’ to participation in higher value RVCs and GVCs, but such cases were relatively rare and most firms were not actively seeking to change their end markets. Furthermore, views of firms on ‘regional’ markets varied between Tanzania and Kenya because of differences in income level relative to neighbouring countries, market access arrangements and domestic trade and industrial policies. Lead firms in South Africa and Kenya were seen as the most demanding on quality, particularly supermarkets and retailers serving ‘middle-class’ market segments, while wholesalers and distributors in the EAC and DRC are less demanding. Two cases of end market downgrading were found, highlighting the role of RVC and NVC-based strategies as a fall-back option for firms excluded from global markets due to heightened competition and changing global trade regimes.

RVCs and NVCs support a wider range of functions than GVCs, with all RVC and NVC firms being vertically integrated to some extent and most doing higher value functions like design and branding. GVC firms focused on a much narrower range of activities, mostly garment assembly with some auxiliary functions like embroidery and printing. This was generally to be expected according to the literature on other geographic regions but has been less documented in SSA (Pickles et al., 2006).

Given the variations in functions described and the presence of less asymmetric forms of governance in RVCs and NVCs, cases of functional upgrading were surprisingly rare. One upgrading case was by an NVC firm and another by a GVC firm, and one downgrading case was seen by an RVC firm. Otherwise business models were well established, often dating to the era of protected domestic markets prior to liberalisation in the 1990s. Ownership was critical in explaining functional upgrading by the only locally owned GVC firm, reflecting a common finding in the literature (Morris et al., 2016), but most locally owned NVC and RVC firms did not functionally upgrade. A more important explanation for those firms appears to be value chain directionality, particularly the types of rents available through national, regional and global trade and industrial policies (see also Boys and Andreoni, 2020).

GVC firms generally produced the most complex products, mainly because of their focus on apparel, and all cases of product upgrading were found in this group. NVC firms focused primarily on lower value processed fabric products, while RVC firms produced across all product categories. The higher value clothing products in RVCs were mostly sold to South African and Kenyan retailers. While the literature suggests that product upgrading is facilitated by the direct ownership and control of suppliers in GVC triangular manufacturing networks, half of product upgrading cases occurred in the more ‘embedded’ GVC firms – one

locally owned and one owned by a foreign individual. The fact that that not a single locally owned NVC or RVC firm reported recent product upgrading also suggests that in this context value chain directionality itself has explanatory power, with policy factors such as rents available in different value chains being a crucial aspect.

GVC firms had the most up to date technologies, followed by RVC firms and then NVC firms, but all groups were engaged in process upgrading, albeit in different ways. Like with product upgrading, strong performance on process upgrading is expected in the literature for GVC firms in triangular manufacturing networks, since foreign owners have the resources and expertise to invest in maximising efficiency to lower unit costs. However locally owned RVC and NVC firms were just as likely to have engaged in recent process upgrading, though of slightly different types. NVC firms with older equipment are more focused on modernisation projects to remain competitive, while RVC and GVC firms undertake more continuous upgrading of both production technologies and factory organisation.

This paper builds on criticisms of the upgrading framework, highlighting that strategic changes in business model and functional range may be difficult to classify as simply upgrading or downgrading (Tokatli, 2013; Ponte and Ewert, 2009). The survey therefore also included non-upgrading outcomes, namely employment, backward linkages and capacity utilization. GVC firms have created more jobs in recent decades by virtue of their more recent establishment and their focus on labour-intensive apparel assembly, but NVCs and RVCs also show the potential to sustain mass employment. NVC and RVC firms source more inputs locally, particularly cotton due to their vertically integrated business models, while GVC apparel firms import almost all their inputs from overseas. Capacity utilization is commonly used as a measure of firm performance and GVC firms perform best here, while NVC and RVC firms struggle because of a range of economic and policy factors (see Boys and Andreoni, 2020).

Overall the results point to the different types of benefits offered by NVCs, RVCs, and GVCs from the perspective of firms and policymakers. While integration into GVC-oriented triangular manufacturing networks offers the potential for rapid employment creation, prospects for upgrading are largely limited to products and process technologies. Locally owned GVC firms are more likely to functionally upgrade, and NVC and RVC firms can engage in end market upgrading to eventually become integrated into GVCs, but cases of upgrading were underpinned by rents which should be a more explicit focus of policymakers and researchers. Further research is needed to explore the impact of value chain directionality on firm outcomes in other geographies and sectors, underpinned by combining qualitative and quantitative data to identify the market and policy factors driving the benefits offered by different value chains.

CRedit authorship contribution statement

Julian Boys: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Visualization, Project administration, Funding acquisition. **Antonio Andreoni:** Conceptualization, Methodology, Validation, Investigation, Writing – review & editing, Supervision, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

A summary of anonymized data is presented in table form in the article.

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References

- Amighini, A., Sanfilippo, M., 2014. Impact of South-South FDI and trade on the export upgrading of African economies. *World Dev.* 64, 1–17.
- Amsden, A.H., 1986. The direction of trade — past and present — and the 'learning effects' of exports to different directions. *J. Dev. Econ.* 23 (2), 249–274.
- Andreoni, A., 2014. Structural learning: embedding discoveries and the dynamics of production. *Struct. Chang. Econ. Dyn.* 29, 58–74.
- Andreoni, A., 2019. A Generalised Linkage Approach to Local Production Systems Development in the Era of Global Value Chains, with special reference to Africa. In: Kanbur, R., Noman, A., Stiglitz, J. (Eds.), *The Quality of Growth in Africa*. Columbia University Press, New York, USA.
- Bair, J., Gereffi, G., 2003. Upgrading, uneven development, and jobs in the North American apparel industry. *Global Netw.* 3 (2), 143–169.
- Barrientos, S., Gereffi, G., Pickles, J., 2016. New dynamics of upgrading in global value chains: shifting terrain for suppliers and workers in the global south. *Environ. Plann. A: Econ. Space* 48 (7), 1214–1219.
- Bazan, L., Navas-Alemán, L., 2004. The Underground Revolution in the Sinos Valley: A Comparison of Upgrading in Global and National Value Chains. In: Schmitz, H. (Ed.), *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*. Edward Elgar, Cheltenham, pp. 110–139.
- Boys, J., Andreoni, A., 2020. Value chain directionality, upgrading, and industrial policy in the Tanzanian textile and apparel sectors. *UNU-WIDER Working Paper* 2020, no. 850-4.
- Chang, H.-J., 1994. *The Political Economy of Industrial Policy*. Macmillan, New York.
- Chang, H.-J., Andreoni, A., 2020. Industrial policy in the 21st century. *Dev. Chang.* 51 (2), 324–351.
- Franssen, L., 2020. Capturing value in south-south and south-north value chains: evidence from East Africa. *Eur. J. Dev. Res.* 32 (4), 939–975.
- Frederick, S., Staritz, C., 2012. Developments in the Global Apparel Industry after the MFA Phaseout. In: Lopez-Acevedo, G., Robertson, R. (Eds.), *Sewing Success? Employment, Wages, and Poverty Following the End of the Multi-fibre Arrangement*. World Bank, Washington, DC.
- Gereffi, G., 1994. The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks. In: Gereffi, G., Korzeniewicz, M. (Eds.), *Commodity Chains and Global Capitalism*. Praeger, Westport, CT.
- Gereffi, G., 1999. International trade and industrial upgrading in the apparel commodity chain. *J. Int. Econ.* 48 (1), 37–70.
- Gereffi, G., 2018. *Global Value Chains and Development: Redefining the Contours of 21st Century Capitalism*. Cambridge University Press, Cambridge.
- Gereffi, G., Humphrey, J., Sturgeon, T., 2005. The governance of global value chains. *Rev. Int. Polit. Econ.* 12 (1), 78–104.
- Gibbon, P., 2008. Governance, entry barriers, upgrading: a re-interpretation of some GVC Concepts from the experience of African clothing exports. *Compet. Chang.* 12 (1), 29–48.
- Gray, H., 2018. *Turbulence and Order in Economic Development: Institutions and Economic Transformation in Tanzania and Vietnam*. Oxford University Press, Oxford.
- Hausmann, R., Hwang, J., Rodrik, D., 2007. What you export matters. *J. Econ. Growth* 12 (1), 1–25.
- Havrylyshyn, O., 1987. South-South Trade: A Historical and Global Perspective. In: Havrylyshyn, O. (Ed.), *Exports of Developing Countries: How Direction Affects Performance*. The World Bank, Washington, D.C.
- Horner, R., Nadvi, K., 2018. Global value chains and the rise of the Global South: unpacking twenty-first century polycentric trade. *Global Netw.* 18 (2), 207–237.
- Humphrey, J., Schmitz, H., 2000. *Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research*. IDS Working Paper 120.
- Kaplinsky, R., Farooki, M., 2010. What are the Implications for Global Value Chains When the Market Shifts from the North to the South? *Policy Research Working Paper* 5205. The World Bank.
- Khan, M., 2013a. Technology policies and learning with imperfect governance. In: Stiglitz, J., Lin, J.Y., Patel, E. (Eds.), *the industrial Policy Revolution II. Africa in the 21st Century*. Palgrave, London, pp. 79–115.
- Khan, M., 2013b. *The Political Settlement, Growth and Technical Progress in Bangladesh*. DIIS Working Paper 2013, 01.
- Lall, S. (Ed.), 1987. *Learning to Industrialize: The Acquisition of Technological Capability by India*. Macmillan, London.
- Lewis, W.A., 1980. The slowing down of the engine of growth. *Am. Econ. Rev.* 70 (4), 555–564.
- Milberg, W., Winkler, D., 2013. *Outsourcing Economics: Global Value Chains in Capitalist Development*. Cambridge University Press, Cambridge.
- Morris, M., Plank, L., Staritz, C., 2016. Regionalism, end markets and ownership matter: shifting dynamics in the apparel export industry in Sub Saharan Africa. *Environ. Plann. A: Econ. Space* 48 (7), 1244–1265.
- Navas-Alemán, L., 2011. The impact of operating in multiple value chains for upgrading: the case of the Brazilian furniture and footwear industries. *World Dev.* 39 (8), 1386–1397.
- Palpacuer, F., Gibbon, P., Thomsen, L., 2005. New challenges for developing country suppliers in global clothing chains: a comparative European perspective. *World Dev.* 33 (3), 409–430.
- Pasquali, G., Godfrey, S., 2022. Governance of Eswatini apparel regional value chains and the implications of Covid-19. *Eur. J. Dev. Res.* 34 (1), 473–502.
- Pickles, J., Smith, A., Bucek, M., Roukova, P., Begg, R., 2006. Upgrading, changing competitive pressures, and diverse practices in the East and Central European apparel industry. *Environ. Plann. A: Econ. Space* 38 (12), 2305–2324.
- Pickles, J., Plank, L., Staritz, C., Glasmeier, A., 2015. Trade policy and regionalisms in global clothing production networks. *Camb. J. Reg. Econ. Soc.* 8 (3), 381–402.
- Pipkin, S., Fuentes, A., 2017. Spurred to upgrade: a review of triggers and consequences of industrial upgrading in the global value chain literature. *World Dev.* 98, 536–554.
- Ponte, S., Ewert, J., 2009. Which way is “Up” in upgrading? Trajectories of change in the value chain for South African Wine. *World Dev.* 37 (10), 1637–1650.
- Prebisch, R., 1959. Commercial policy in the underdeveloped countries. *Am. Econ. Rev.* 49 (2), 251–273.
- Reinert, E.S., 2007. *How Rich Countries Got Rich and Why Poor Countries Stay Poor*. Constable, London.
- Schmitz, H., Knorringer, P., 2000. Learning from global buyers. *J. Dev. Stud.* 37 (2), 177–205.
- Tokatli, N., 2013. Toward a better understanding of the apparel industry: a critique of the upgrading literature. *J. Econ. Geogr.* 13 (6), 993–1011.
- Torreggiani, S., Andreoni, A., 2023. Rising to the challenge or perish? Chinese import penetration and its impact on growth dynamics of manufacturing firms in South Africa. *Struct. Chang. Econ. Dyn.* 64, 199–212.
- Whitfield, L., Staritz, C., Morris, M., 2020. Global value chains, industrial policy and economic upgrading in Ethiopia's apparel sector. *Dev. Chang.* 51 (4), 1018–1043.
- Whitfield, L., Staritz, C., 2021a. Local supplier firms in Madagascar's apparel export industry: upgrading paths, transnational social relations and regional production networks. *Environ. Plann. A: Econ. Space* 53 (4), 763–784.
- Whitfield, L., Staritz, C., 2021b. The learning trap in late industrialisation: local firms and capability building in Ethiopia's apparel export industry. *J. Dev. Stud.* 57 (6), 980–1000.
- Wolf, C., 2022. Demand-growth in Support of Structural Change: Evidence from Nigeria's Formal Manufacturing Sector. *Post-Keynesian Economics Society. Working Paper* 2218.
- World Bank, 2020. *Trading for Development in the Age of Global Value Chains*. World Development Report 2020. The World Bank, Washington.
- Wortzel, L., Wortzel, H., 1981. Export marketing strategies for NIC and LDC-based firms. *Columbia J. World Bus.* 16, 51–59.