
Exploring South African Manufacturers' Relationships to Promote Economic, Social and Environmental Upgrading

Rachel Alexander and Aarti Krishnan

1. Introduction

This policy brief presents key findings from a study (Alexander and Krishnan 2023) examining the relationship between economic, social, and environmental upgrading of South African manufacturers and network governance. This form of governance involves pressures and experiences derived from firms' relationships with other actors in a production network (e.g., suppliers or financial institutions). The study identifies connections between customer and supplier links (network governance) and firms' upgrading trajectories.

Often, issues of network governance remain unaccounted for in policy formulation, which can affect the quality of design and efficacy of implementation (Gereffi 2019). This brief provides insights for policymakers and other stakeholders into connections between network governance and economic, social, and

environmental upgrading. These considerations can help to support the formulation of inclusive and potentially win-win industrial policy. While the study only provides a preliminary assessment of these dynamics, and further research is necessary to better understand this topic, this brief aims to share related learnings on strategies to promote industrial upgrading across economic, social, and environmental dimensions.

2. Methodology

The study draws on data from the World Bank's South Africa Enterprise Surveys in 2007 and 2020 (World Bank 2007, 2020). These surveys collected data from a diverse selection of firms. The results of the study are based on developing two sets of measures.

About the authors

Rachel Alexander is an independent consultant and researcher affiliated with SARChI and the Centre for Business and Development Studies at Copenhagen Business School. She specialises in sustainable production.

Aarti Krishnan is a lecturer at Manchester Alliance Business School. She is a developmental economist, working at the nexus of environment, trade and development.

- 1) *Links*: Characteristics of the relationships firms had with different types of customers (e.g., government agencies, foreign firms, local firms) and suppliers (e.g., foreign firms, local firms) were identified. These relationships are the component of firms’ network governance structures that are considered.
- 2) *Upgrading*: Indicators of firm upgrading that quantify economic, environmental, and social dimensions were also created. Economic upgrading was measured across two components, viz., quality (use of internationally recognised quality certification) and efficiency (sales per employee). Social upgrading was also measured using two components, namely job security (percentage of employees with full-time, permanent employment) and wages (spending on employees, per employee). Finally, environmental upgrading was measured through energy efficiency (energy used per unit value of sales).¹

2. Key results

2.1 Upgrading from 2007 to 2020

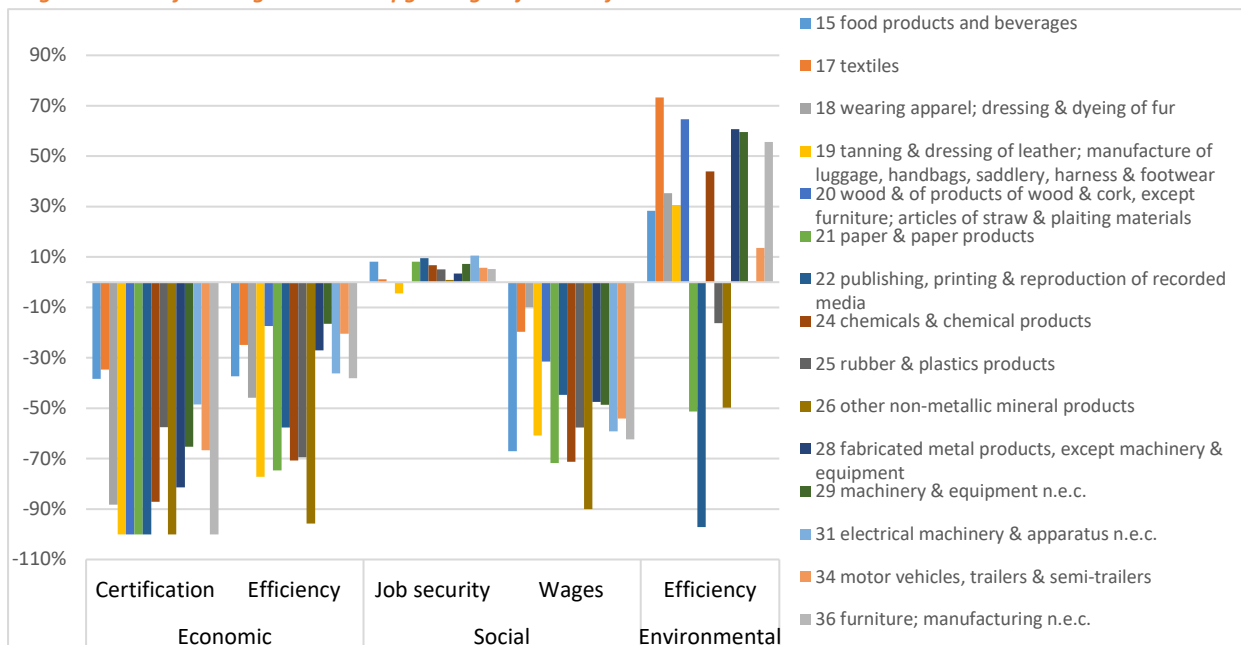
Cross-sectoral trends²

- Firms experienced **economic downgrading** overall, with exceptions in the hotels and restaurants sector.
- **Social upgrading exhibited mixed results**, with increased job security and decreased wages across all sectors.
- **Environmental upgrading** was observed across all sectors, except for hotels and restaurants.

Manufacturing trends

- Manufacturing sub-sectors had similar results to the sector as a whole (see Figure 1). However, several manufacturing sub-sectors experienced a decline in job security and energy efficiency.

Figure 1: Manufacturing sub-sector upgrading trajectories from 2007 to 2020



Source: Authors’ construction from WBES 2007 and 2020 data

¹ Methodological details are provided in Section 3 of the working paper.

² Sectors covered include 1) manufacturing; 2) construction; 3) hotels and restaurants; and 4)

‘wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods’.

2.2 Network governance and upgrading

Manufacturing firms and customer governance (links)

A number of connections were identified

between manufacturers' customer links and upgrading. General patterns in these links are displayed in Table 1.³

Table 1: Connections between manufacturers' customer links and upgrading

Customer type	Economic upgrading	Social upgrading		Environmental upgrading
		Job security	Wages	
Government agencies	+	-		
Other producers	+	-		+
Domestic	-	+	-	
Global	+	- ⁴	+	+

Source: Authors' construction from Alexander and Krishnan 2023

- **Government agencies as customers:** Having government customers was associated with firms experiencing **economic upgrading**. However, this link was also connected to **social downgrading** in terms of job security.
- **Other producers⁵ as customers:** Similarly to government customers, producer customers were associated with **economic upgrading** and **social downgrading** in terms of job security. In addition, having producers as customers was connected to **environmental upgrading**.
- **Domestic customers:** Selling to domestic buyers was associated with **economic downgrading**, possibly due to less stringent requirements for internationally recognised certification and reduced efficiency pressures. However, this link was connected to **mixed results for social upgrading**. Job security was higher, while wages paid were lower.
- **Global customers:** Selling to international buyers was associated with **economic and environmental upgrading**. However, it was also associated with **mixed results related to social upgrading**. Selling to international buyers was associated with paying more wages but this link had a less clear relationship with job security. Having this link was associated with a decrease in 2007 and 2020, while firms that sold a high proportion of their outputs to global buyers in 2020 showed an increase that had a low level of statistical significance. In addition, manufacturing sub-sectors gaining links to global buyers (i.e., starting to export) between 2007 to 2020 was associated with a decrease in job security.

Manufacturing firms and supplier governance (links)

General patterns in the relationship between supplier links for manufacturers and upgrading are displayed in Table 2.

³ In the tables in this brief, coloured boxes indicate relationships where a statistically significant association was found. A green box with a '+' indicates a positive association, and a red box with a '-' indicates a negative association.

⁴ One test, with a low level of significance, showed an association between global connections and an

increase in job security. This may be a statistical anomaly. More research is needed to clarify this finding.

⁵ In these links, the manufacturers are selling their products as inputs for further manufacturing activities.

Table 2: Connections between supplier links and upgrading

Supplier Type	Economic upgrading	Social upgrading		Environmental upgrading
		Job security	Wages	
Local	-	+		
Global	+	-	+	+
Foreign technology	+	-	+	+

Source: Authors’ construction from Alexander and Krishnan 2023

- **Local suppliers:** Connecting with local suppliers was associated with **economic downgrading**. In addition, manufacturing sub-sectors increasing the proportion of inputs purchased from local suppliers from 2007 to 2020 was correlated with **social upgrading** (an increase in job security).
- **Global suppliers:** Using global suppliers was associated with **economic and environmental upgrading**, but **mixed experiences with social upgrading**. Having connections to global suppliers was associated with paying more in wages and decreased job security.
- **Foreign technology:** Licensing foreign technology was connected to **economic, social (wages paid), and environmental**

upgrading, indicating positive outcomes for firms connecting to global technology providers. However, manufacturing sub-sectors reporting increased incidents of incorporating foreign technology was also correlated with elements of **social downgrading (job security)**.

Domestic-led versus global-led links

In addition, the study identified some firms as having global-led links (large proportion of buyers and suppliers being global) and some firms as having domestic-led links (large proportion of buyers and suppliers being domestic). Connections between these two link profiles and upgrading are displayed in Table 3.

Table 3: Connections between upgrading and being domestic-led and global-led

Link profile	Economic upgrading	Social upgrading		Environmental upgrading
		Job security	Wages	
Domestic-led	-	+	-	
Global-led	+			

economic downgrading. In addition, having domestic-led links was connected to **mixed results in relation to social upgrading**. Being domestic-led was connected to higher levels of job security and lower levels of wages.

Link diversity

The study also explored whether firms with more diverse links were more likely to have particular upgrading trajectories. The results of the related tests are summarised in Table 4.

- Source: Authors’ construction from Alexander and Krishnan 2023
- **Global-led links:** Overall, firms with global-led links had stronger connections to **economic upgrading**.
- **Domestic-led links:** Firms with domestic-led links had stronger connections to

Table 4: Correlation between upgrading and link diversity

Link type	Economic upgrading	Social upgrading		Environmental upgrading
		Job security	Wages	
Supplier links	+	-	+	+

Customer links	+	-	+	+
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Source: Authors' construction from Alexander and Krishnan 2023

- Firms with more diverse customers and suppliers were more likely to experience **economic upgrading and environmental upgrading**.
- Firms with more diverse customers and suppliers had **mixed outcomes for social**

upgrading. They were more likely to pay more in wages and have lower job security. This negative relationship to job security may be related to these firms engaging in more dynamic and constantly changing practices.

3. Main takeaways and recommendations⁶

Finding 1: Upgrading trends	<p>From 2007 to 2020, South African manufacturers generally experienced economic downgrading and paid less in wages.</p> <p>On the other hand, almost all sub-sectors saw an increase in the proportion of full-time, permanent workers, and most sub-sectors experienced an increase in energy efficiency.</p>
Finding 2: Economic upgrading and network governance	<p>An association was found between economic downgrading and local links (i.e., selling to local customers and buying from local buyers).</p> <p>A positive association was found between economic upgrading and global links (i.e., global buyers, global suppliers, foreign technology suppliers), selling to government agencies, selling to other producers, and having more diverse links.</p>
Finding 3: Job security and network governance	<p>A negative association was found between job security and multiple network structures:</p> <ul style="list-style-type: none"> • selling to government buyers, other producers and global buyers; • buying from global suppliers and licensing from foreign technology providers; and • having diverse links. <p>A positive association was found between job security and local links (i.e., selling to local customers, buying from local buyers).</p>
Finding 4: Wages and network governance	<p>An association was also found between paying less wages and selling to local customers.</p> <p>A positive association was found between paying more in wages and both global links (i.e., global buyers, global suppliers, foreign technology suppliers) and link diversity.</p>
Finding 5: Environmental upgrading and network governance	<p>A positive association was also found between energy efficiency and global links (i.e., global buyers, global suppliers, foreign technology suppliers), selling to other producers, and having diverse links.</p>

Recommendations for policymakers:

- Promote firm behaviour that is related to upgrading across all three

⁶ While a number of connections can be found between network governance (customer and supplier links) and upgrading, the study did not explore causation. Therefore, the reasons for these connections cannot be identified and policy decisions should not be based on an assumption that one causes the other.

dimensions. This can involve encouraging what is performing well so that it continues, and incentivising change related to what is performing poorly.

- Support positive behaviour where it is found and learn from best practices. For example, this could involve seeking to encourage:

- continued performance improvements for manufacturers that have global links, those that sell to government agencies and other producers, and those that have more diverse links; and seeking to learn about the dynamics driving these positive associations.
- manufacturers with local links to continue to provide full-time, permanent jobs, even when they are expanding their buyer and supplier links; and seeking to learn about the dynamics driving this positive association.
- manufacturers to continue paying more in wages when they have global links and high link diversity, and seeking to learn about the dynamics driving these positive associations.
- manufacturers to continue improving energy efficiency when they have global links, sell to other producers and have high link diversity and seek to learn about the dynamics driving these positive associations.

- Pay attention to relationships that have negative associations. Seek to understand the dynamics and provide incentives for firms to improve their practices. For example, this could include providing incentives:

- for economic upgrading to manufacturers that sell to local buyers and source from local suppliers, which could include subsidising training for firms with limited global connections, such as MSMEs; and seeking to learn about the dynamics driving these negative associations.
- for suppliers to maintain full-time, permanent workers when developing public procurement policies; and seeking to learn about the dynamics driving the negative association between selling to government agencies and job security.
- for manufacturers to offer full-time, permanent jobs (e.g., through cash transfer or subsidies for MSMEs) when they have global buyers or buyers that are other producers; these links may have seasonal demand and support could help companies keep workers on more regular contracts.
- for manufacturers with global sourcing, foreign technology licences, and diverse sets of links to also maintain regular workforces; and seeking to learn about the dynamics driving negative associations between these link profiles and job security.
- for manufacturers that sell to local customers to pay more wages, such as through subsidising wage payments; and exploring reasons driving the negative relationship between selling to local customers and job security.
- for manufacturers in sectors that have seen decreased energy efficiency (paper and

paper products; publishing, printing and production of recorded media; rubber and plastics products; and other non-metallic mineral products) to improve their performance; and seeking to explore reasons for their decline.

- Remediate challenges associated with poor performance. Policy can seek to remediate:
 - the effects of economic downgrading by supporting firm upgrading opportunities and the creation of new firms.
 - the effects of wage decreases by ensuring that essential goods and services are accessible to all South Africans.
 - the effects of environmental downgrading by supporting those affected by the environmental implications.
- Explore the dynamics of the associations that have been identified and, if justified based on further research, encourage the development of network structures that may stimulate upgrading.

Recommendations for business associations:

- Develop initiatives to increase economic upgrading for manufacturers with local links.
- For sub-sectors that have seen a decrease in energy efficiency (paper and paper products; publishing, printing and production of recorded media; rubber and plastics products; and other non-metallic mineral products), business associations could try to identify the drivers and design initiatives to increase energy efficiency.
- Learn from manufacturers that have experienced energy efficiency improvements (can look at firms that have global links, sell to other producers,

and have diverse links) and seek to disseminate industry best practices.

Recommendations for global buyers:

- Consider job security as a challenge when seeking to support good working conditions in supply chains, such as by incorporating the provision of full-time, permanent work in supplier codes of conduct.

Recommendations for unions:

- When designing interventions, incorporate the fact that firms with different link types may be more likely to have different challenges for workers (e.g., global links being associated with higher wages but decreased job security).

Recommendations for NGOs, researchers and all stakeholders:

- Conduct additional research to explore if the identified connections occur in other circumstances (e.g., other sectors, times and places), and explore the reasons behind the identified connections. If causal links can be found between having particular connections and economic, social, or environmental upgrading, policy measures can be targeted at building helpful connections and mitigating pressures that create downgrading trajectories when network structures are associated with downgrading. Furthermore, the role of firm characteristics (e.g., size, sub-sector) should be considered in relation to the association between links and upgrading.

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