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‘Manufacturers without factories’ and economic development in the Global South: India’s pharmaceutical firms

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Abstract

Global value chain/global production network studies have extensively documented the role of lead firms from the Global North in economic development in the Global South, including as ‘manufacturers without factories’ (MWFs). However, the role of local firms in sourcing from suppliers has been overlooked. In this article, we report the findings of a qualitative study and demonstrate that the local MWFs helped establish India as the leading supplier of pharmaceuticals worldwide and in the Global South. We show how the different types of local MWFs (‘propagandists’, ‘pioneers’, ‘connectors’ and ‘adaptors’) impact the strategic coupling, industrial upgrading and governance in South–South value chains and contribute to regional economic development.

Keywords: Economic Development, Production Networks, Value Chains, Manufacturers Without Factories, Global South, India, Pharmaceuticals

JEL classifications: F63, L23, F23, O53, L65

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1. Introduction

Research on global value chains (GVCs) has analysed the role of lead firms, that is, the most powerful actors of a value chain, in the global organisation of industries and highlighted their impact on technological upgrading and economic development (e.g. Gereffi 1994, 1999; Giuliania et al., 2005; Barrientos et al., 2011). Remarkably, the GVC literature has paid limited attention to the nature of the role the local firms from the Global South have played in the development of national and regional capabilities (Horner and Murphy, 2017). Closely related studies on global production networks (GPNs) have also approached lead firms as the most critical players. However, the GPN authors went beyond the approach of the value chains as linear sequences of activities to reinstate ignored relationships and actors in the analysis of global networks (Coe et al., 2008; Yeung and Coe, 2015; Coe and Yeung, 2019). The recent rise of South–South trade questions the overall applicability of both GVC and GPN frameworks. Derived primarily through research on North–South linkages, these frameworks have just started integrating the changing location of the lead firms, suppliers and buyers in their analysis of regional development (Horner, 2016; Horner and Nadvi, 2018; Mohanty et al., 2019). The GVC/

GPN frameworks lack a clear conceptualisation of the local actors' roles and strategies critical to technological upgrading outside of successful lead firms (Sako and Zylberberg, 2019; Grumiller, 2021; Pasquali and Alford, 2021). Although some studies clarified the multiple roles of the local States and local multinational corporations in the strategic coupling of Southern regions to GPNs, they neglected the leadership role of the local small-scale enterprises (Horner, 2014a, 2017; Neilson et al., 2020).

This article fills some of these empirical and conceptual gaps by focusing on the role of the local 'manufacturers without factories' (MWFs) in establishing India as the leading supplier of pharmaceuticals worldwide and in the success story of technological capability development in the Global South. The rise of Indian pharmaceuticals and its dominating role in the global economy of health have been extensively studied and well established (e.g. Chittoor and Ray 2007; Greene 2007; Kale and Little 2007; Rao 2008; Kale, 2019). However, the majority of these studies have focused on technological capability development processes in large Indian firms dominating generics markets in the USA and Europe (e.g. Bower and Sulej, 2007; Kale and Wield, 2008; Kale and Huzair, 2017), issues of patent protection (e.g. Abrol 2004; Chadha 2009; Horner 2014a, 2014b), challenges of counterfeit, spurious and substandard medicines (e.g. Brhlikova et al., 2011; Hodges, 2019) and role as a supplier of affordable generics to the Global South (e.g. Sweet 2010; Waning et al., 2010; Horner 2014a, 2014b; Horner and Murphy 2017). These discussions often ignore the small-scale enterprises which dominate the key South–South pharmaceutical value chains. In this study, we adopted a qualitative research methodology. We conducted semi-structured interviews with the directors of pharmaceutical Micro, Small, and Medium Enterprises (MSMEs) headquartered in India to unpack their role, activities and contribution to the dominance of the Indian pharmaceutical industry in the Global South.

We organise the article as follows. Section 2 reviews the literature on MWFs and economic development and highlights critical conceptual gaps in the GVC/GPN literature. The case context and the research methodology, including the details of data collection and data analysis methods, are outlined in Section 3. Section 4 analyses the data, identifies the relations of the MWFs with the other actors of the value chains and proposes a typology. It also discusses their position in pharmaceutical value chains and India's industry. Section 5 elaborates on the role of the MWFs in the context of South–South pharmaceutical trade and examines their impact on the strategic coupling, industrial upgrading and governance of the South–South GVCs/GPNs. The conclusion summarises the main findings and suggests new research avenues.

2. MWFs and economic development

We can trace the earliest conceptualisation of MWFs to 1970s discussions in economics and strategic management literature about firms that replaced their vertically integrated manufacturing operations by adopting an outsourcing model employing suppliers of parts or the entirety of their manufacturing activities. These studies generally referred to these firms as 'factoryless goods producing companies' or 'fabless firms' (e.g. Bayard et al., 2015; Morikawa, 2016; Sarma and Sun, 2017). This literature acknowledges the existence of firms that 'do not conduct manufacturing activities but [are] heavily involved in activities related to the production of goods' (Bernard and Fort, 2015, 518). They are considered halfway between service providers, wholesalers and manufacturers (Bernard and Fort 2015; Kamal et al., 2015; Morikawa 2016). However, this literature does not unpack their specific role in GVCs and economic development.

The following section reviews the GVC literature dealing with MWFs and economic development. We show that studies of North–South value chains and lead firms dominate this literature. We then highlight the contribution of GPN studies and argue that they are yet to clarify the role of local MWFs in economic development in the Global South. We finally review the research on South–South value chains and highlight the conceptual and theoretical gaps.

2.1. Global value chains, 'manufacturers without factories' and economic development

The GVC literature has preferred the term 'manufacturers without factories' to 'fabless firms' and initially conceptualised these firms by analysing the upgrading role of US-based apparel firms in sourcing from East Asian companies (e.g. [Dicken et al., 2001](#); [Gereffi, 2001](#); [Gereffi et al., 2005](#)). These studies of the garment industry show that MWFs play a significant role in supporting local manufacturers to upgrade their production processes and production quality ([Gereffi, 1996, 1999, 2011](#)). In some instances, Southern suppliers could move into higher value-added activities, including design, brand-name manufacturing, marketing and retailing ([Bair and Gereffi, 2004](#); [Tokatli and Kizilgün, 2004](#)). For example, focusing on the semiconductor industry, [Mathews and Cho \(2007\)](#) showed that East Asian producers upgraded their activities from suppliers of components to designers of semiconductor chips. These firms started to outsource parts of production to other local firms. Other forms of upgrading led by MWFs also entailed moving into more efficiently organised production processes, producing higher value commodities and taking up new functions in the value chain and other industries ([Humphrey and Schmitz, 2002](#)).

In the GVC literature, MWFs are thus widely analysed as prominent actors in '[linking] overseas factories and traders with evolving product niches in the main consumer markets', historically located in the Global North ([Ramaswamy and Gereffi, 2000, 193](#)). The Northern MWFs have the expertise to manage the research, design of products and marketing ([Sturgeon and Kawakami, 2011](#)) that suppliers from the Global South lack to meet the complex product and process requirements of Northern markets ([Ouma, 2010](#)). Consequently, the Northern MWFs are considered critical to the emergence of certain regions of the Global South as dominant production sites for various industries ([Gereffi and Wyman, 2014](#)). In this conceptualisation, economic development is seen chiefly as a top-down process dominated by leading firms from the Global North ([Ponte and Sturgeon, 2014](#)). Little consideration is given to the local firms from the Global South, although they play an essential role ([Henderson et al., 2002](#); [Coe et al., 2004](#); [MacKinnon, 2012](#)).

Additionally, some GVC scholars have used the concept of MWF as a tool to characterise the role of the firm that 'drives' the processes and prospects for technological upgrading of suppliers within the value chains (e.g. [Humphrey and Schmitz 2002](#); [Gereffi et al., 2005](#); [Giuliani et al., 2005](#); [Buckley and Strange 2015](#); [Hernández and Pedersen 2017](#)). These authors consider MWFs as essential components of the 'buyer-driven' value chains, but not so much of the 'producer-driven' chains, where manufacturing remains a core activity of the lead firms to keep control over the production, particularly the assemblage operations: for example, in the aircraft and automobile industries ([Gereffi, 1994, 2011](#)). In the 'buyer-driven' value chains, the lead firm typically specialises in market-intensive design, branding and retailing activities. However, we can question the relevance of the 'buyer-driven' framework of governance in analysing South–South value chains, given the considerable diversity of firms and relational configurations in such socio-spatial contexts (e.g. [Horner, 2021](#)).

Generally, the GVC literature overlooks the trade outside North–South linkages or driven by lead firms from the Global South (Horner and Nadvi, 2018). However, recent studies suggest that the shift away from the dominance of North–South relations is generating new forms of governance and interrelations in value chains and new roles for MWFs (Kaplinsky and Farooki, 2011; Pasquali, 2021a, 2021b). The governance of South–South value chains would be less asymmetrical, with a plurality of actors shaping the production processes and quality (Pasquali and Alford, 2021). Still, we do not know much about the role of each actor in these contexts of ‘market-based’ governance. Some studies suggest that some ‘middle-men’ or ‘traders’ organise loose and indirect governance where the relationship between the producers and the buyers is more balanced (Gibbon, 2001; Bazan and Navas-Alemán, 2004; Tessmann, 2018), but we do not know why and how. Some authors suggest that governance forms in South–South networks could lead to better development outcomes than North–North linkages (Horner, 2016). But the role of local firms, including the MWFs, remains unclear.

2.2. Global production networks, ‘manufacturers without factories’ and economic development

The GVC literature overlooked the processes and challenges that are not considered part of GVCs and yet play a significant role (Bair and Werner, 2011; Sturgeon and Kawakami, 2011). In contrast to the GVC approach that assumes linearity of production systems, the GPN approach has recognised the structural and relational nature of production systems with multi-scalar networks of local and global actors (Coe et al., 2008). The GPN studies have critiqued the focus on technological upgrading and export-oriented development within GVCs coordinated by multinational lead firms. As a response, the GPN authors have studied more actors and institutions beyond the Northern firms to highlight the complexity associated with the governance of diversified production systems (Coe, 2021).

The GPN literature notably suggests that local firms from the Global South, such as the MWFs, contribute significantly to developing local production capabilities and connections to GVCs (Horner and Murphy, 2017). Alexander (2018) notably argued that the exclusive focus on the relationship between the lead buyers and its upper tier suppliers has obliterated the complexity of interactions and diversity of firms within the extended network of the local manufacturers. Such local firms might not be significant in trade volume, power or policy influence. However, they still play a critical role in shaping development processes in Southern economies (Horner, 2014a). Their role needs to be explored to overcome the ‘inclusionary bias’ that only considers those actors, regions, nations and sectors making up the main GPNs (Bair and Werner, 2011). For instance, the analysis of the strategic coupling of the Southern regions and nations, where they specialise in supplying goods for a specific place and which is key to economic development, has widely underestimated the role of local MWFs (Coe et al., 2004). These studies widely see such processes as led or facilitated by multinational corporations and national States, and forget about the autonomous role of local firms (Horner, 2014a, 2017; Neilson et al., 2020).

2.3. South–South value chains, ‘manufacturers without factories’ and economic development

Only a few empirical studies focusing on South–South trade have dealt with the local MWFs. However, reviews of these studies have suggested that they have struggled to

provide a clear conceptualisation of the role the local MWFs play in South–South value chains and technological upgrading. The limited GVC/GPN literature on local firms in South–South value chains generally refers to the local MWFs as ‘middle-men’, ‘traders’, ‘third-party intermediaries’ or ‘marketers’. These are convenient terms to categorise the firms that are not distributors or manufacturers but whose activities are not clearly defined (Gibbon, 2001). For example, studies of the apparel and electronics industries of Wenzhou in China (Wei et al., 2007) and the leather-shoe industry in Ethiopia (Sonobe et al., 2004, 2009) conceptualise the role of the so-called ‘sales agencies’ in economic development as local firms that are involved in the branding and market development of low-tech goods. However, they tend to construe the MWFs as mere service-based firms, even though there are multiple pieces of evidence of their involvement in manufacturing goods and developing local capabilities in the Global South.

Further, some researchers suggest that MWFs might have a limited impact on the technological upgrading of local firms due to weak governance structures, less demanding nature of regulations and lack of leadership in value chains. The absence of leadership in value chains could be less conducive to knowledge and technology transfers than stable collaborations between a powerful lead firm and its suppliers (Alcacer and Oxley, 2014; Gereffi, 2014). For example, Tessmann (2018) shows that third-party intermediaries do not contribute to better development outcomes in an uncoordinated governance context in his empirical work on the Ivorian cashew value chain. Picking up on the issues of governance structures, Horner and Murphy (2017) point out that the role of local MWFs in upgrading processes may be more modest in the Global South due to the less demanding nature of standards and regulations compared to Northern-led MWFs. Another study by Navas-Alemán (2011) confirms that Northern-led MWFs tend to monitor production more closely to control quality standards, processes and delivery schedules.

Despite these limitations and challenges, there is clear evidence that the looser forms of control, less stringent regulations and lower technological sophistication requirements of the local MWFs operating in South–South value chains facilitate and speed up access to those lead firms which are already manufacturing similar low-tech products for their home countries (Amighini and Sanfilippo, 2014). For example, Navas-Alemán (2011) suggests that the presence of MWFs encourages looser forms of control and better upgrading outcomes for all firms participating in the value chains compared to chains driven by lead firms. Giuliani et al. (2005) observed that MWFs tend to minimise their collaboration to avoid the emergence of potential competitors, thereby helping the regions of the South to ‘unlock’ from certain low added value activities (Gereffi and Lee, 2012). The lower regulatory standards and technological sophistication reduce entry barriers and enable supplier firms to bypass the help of a ‘lead northern firm’ to access a market (Barrientos et al., 2016). Ponte and Ewert (2009) argue that downgrading quality could be a strategy for Southern MWFs to compete in specific markets. Kaplinski and Farooki (2011) illustrated this strategy by noting that Gabon timber suppliers were downgrading the quality of their products to enter the South–South value chains.

These contrasting views about the role and impact of MWFs in South–South value chains highlight that local MWFs in Southern countries have an essential economic role in development in the Global South. Still, the nature of the relation with the other value chain actors is not well defined and remains debated.

In South–South pharmaceutical value chains, the Indian industry has emerged as a lead actor in manufacturing and supplying drugs and vaccines to low- and middle-income and high-income country (LMIC) markets. Most literature on the Indian pharmaceutical

industry has shown how the lead firms from the Global North transfer technologies to the suppliers from the Global South. Some authors highlighted how the lead firms help them meet the regulatory and technological requirements of the regulated markets in high valued-added drugs (Haakonsson, 2009a; Kale, 2019). Other studies revealed how large Indian firms shifted from manufacturing activities to R&D and marketing quality generics (Kale and Little, 2007; Pradhan, 2010). However, the role of the local MWFs in the development of India's pharmaceutical industry and the coupling of South–South production networks is little known. Some recent Southern studies have used concepts of 'non-driven' or 'market-driven' value chains to characterise such forms of governance (e.g. G. Pasquali and Alford, 2021), but without further conceptualisation.

Furthermore, the majority of studies on the Indian pharmaceutical industry focused on large integrated firms (Pradhan, 2006; Kale, 2007; Kale and Little, 2007; Chittoor et al., 2008), small and medium manufacturers (Das and Padh, 1999; Iyer, 2008; Pradhan, 2011) or both (Chaudhuri, 2004; Horner, 2014a; Horner and Murphy, 2017; Singh, 2018), whilst the leadership role of the local Indian MWFs remains invisible.

The relationships between the actors, forms of value chains and industrial upgrading vary immensely in South–South value chains and need further exploration (Tessmann, 2018). Notably, there is still a lack of conceptualisation about the role of the MWFs in South–South value chains and their effect on technological upgrading in GPN/GVC studies (Sako and Zylberberg, 2019; Grumiller, 2021).

3. Case context and research methodology

This research investigates the role of MWFs to better understand South–South value chains and GPNs through an empirical study of the MWFs operating in India's pharmaceutical industry. Section 3.1 presents the case study context, while Section 3.2 exposes the research material and analysis methods.

3.1. Significance of India's pharmaceutical industry

Many authors have hailed the Indian industry as a success story of economic development in the Global South and an iconic example of a South-oriented industry (e.g. Chittoor et al., 2009; Horner, 2014a, 2014b). India is the leading global supplier of generic drugs and vaccines, with 20% of the global supply of generics and with generic drugs accounting for 71% of the revenue of the Indian firms in 2019 (Guerin et al., 2020). India's companies generate a large part of their pharmaceutical revenues in the Global South. In 2020, 50% of their revenue came from sales in the domestic market and 25% from sales in other LMICs, particularly in Africa (see Figure 1).

Figure 2 attempts to characterise pharmaceuticals in terms of technological and marketing complexities against profit margin. Intermediate bulk drugs are in powder form. They involve the lowest level of technological and marketing complexity and correspondingly have low levels of profitability. At the same time, new chemical entities result from leading-edge science and require reliable commercial infrastructure. Due to reliable patent protection, the profitability associated with a new chemical entity is very high as most such drugs have a monopolist presence in markets.

Indian manufacturers are predominantly involved in intermediates and bulk substances, commodity generics and conventional dosage forms. Although their presence in the segment of new chemical entities and new drug delivery systems is weaker, Indian firms

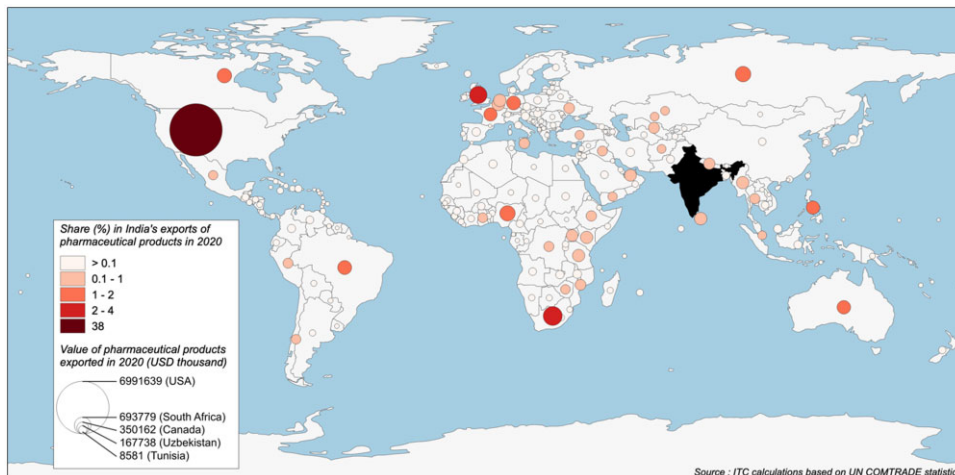


Figure 1. India's exports of pharmaceuticals per country in 2020 (source: own elaboration).

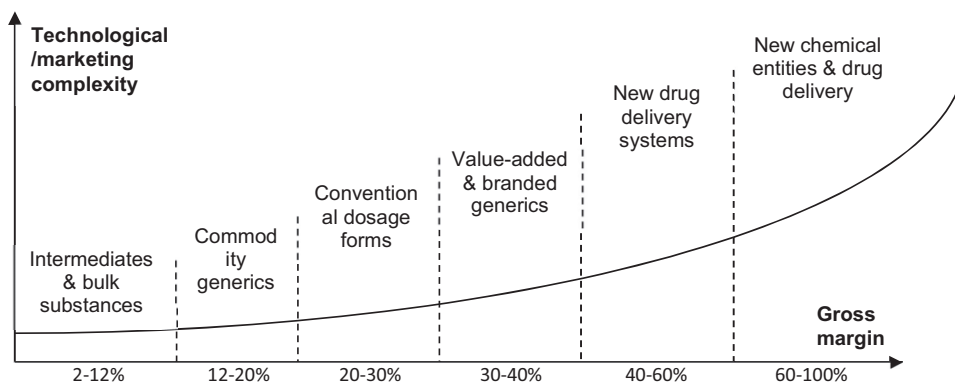


Figure 2. Pharmaceutical industry's value curve: key segments according to complexity and margin (source: author's modification of Bartlett and Ghoshal, 2000).

have steadily progressed in those segments and the segment of value-added and branded generics (Wadhwa et al., 2008). India now accounts for the highest number of US FDA-approved drug manufacturing plants outside of the USA (US FDA, 2019) and hosts more than 2000 WHO-GMP certified units (CDSCO, 2019). Overall, India counted 5099 pharmaceutical factories in 2016 (ASI, 2016), much lower than the number of active companies registered as pharmaceutical manufacturers (12,477 according to the MoCA, 2016). This statistical gap suggests many MWFs using India's manufacturing capabilities.

3.2. Data collection and analysis

Between 2015 and 2018, we conducted face-to-face interview meetings with the executive directors and managers of 46 pharmaceutical MWFs, that is, companies which are commercialising their pharmaceutical products but do not own or directly operate the tools, equipment and materials that produce them. Table 1 provides key characteristics of the

Table 1. Main characteristics of the 46 MWFs interviewed

Characteristics		Number of firms
Employees	>9	20
	10–19	12
	20–99	6
	>100	4
Location of HQ (city and State)	Ahmedabad, Gujarat	21
	Bengaluru, Karnataka	1
	Hyderabad, Telangana	1
	Mumbai, Maharashtra	15
	Pune, Maharashtra	1
	Shiroda, Maharashtra	1
	Surendranagar, Gujarat	1
	Panaji, Goa	1
	Vadodara, Gujarat	3
Year founded	Vapi, Gujarat	1
	2011–2016	27
	2000–2008	13
	1990–1999	4
Main products	1977–1978	2
	Formulations	25
	Bulk drugs	6
	Both	15

firms contacted for the data collection. It shows that these firms differed significantly in terms of the number of employees, turnover, founding year and types of products.

The interviews mainly focused on the relationships between the ‘manufacturers without factories’ and the other actors in India’s pharmaceutical industry. In this article, the names of interviewees and their companies are fully anonymised. The companies were initially randomly sampled amongst those listed on the registrars of companies of Gujarat and Maharashtra as pharmaceutical manufacturers. We also recruited some participants from other participants’ connections. Additionally, we conducted 65 interviews with other actors in the pharmaceutical industry, including 28 firms with manufacturing units, 15 firms in allied sectors (e.g. packagers, wholesalers and retailers), business associations, consulting firms and government policy-makers. Some of them were collaborating with our sample MWFs. Private and public industrial databases, reports from business magazines, leading newspapers, industry association publications and company reports provided additional information.

We analysed the data by identifying patterns around four main salient elements: the type of activities, the strand of the value chain, the kind of knowledge involved, the location of the activities and the impact of the activities. This pattern-matching strategy allowed us to capture the diverse nature of activities and their contributions to the development of the Indian pharmaceutical industry.

4. MWFs: areas of operations, typology and their role in global pharmaceutical value chains

In this section, we analyse the empirical data and start by identifying the spheres of activities of MWFs. Second, we propose a typology of MWFs. Third, we clarify their position in various strands of the pharmaceutical value chain.

4.1. 'Manufacturers without factories' and their spheres of activities

We classified the firms into four categories based on the firm's activities, market location, industrial impact and kind of knowledge. Based on this classification, we developed a typology of MWFs in the Global South, recapped in [Table 2](#).

In terms of location, the propagandists are primarily active in certain States and regions within India, rarely abroad, where they generally outsource the promotional activities to local firms. The pioneers focus on the pan-Indian national market, often establishing technologies borrowed from outside India, serving as an entry point into the Global South. The connectors are primarily active in zones with many intermediaries and are mainly present in Africa and Southeast Asia, Latin America and the Middle East. The adaptors are present across the globe. However, they have specialist areas of regulation; the 'regulated markets' (USA, Canada, Australia, New Zealand, European Union and South Africa) and the 'Rest of the World' or 'semi-regulated markets' (Latin America, Middle-East and North Africa, Asia, Former Soviet Republics and Sub-Saharan Africa).

Regarding the impact of their activity on the development of India's pharmaceutical industry, the propagandists are helpful to develop loyalty amongst the medical practitioners and patients. The pioneers facilitate access to innovative formulations, the adoption of drug intermediates for new treatments and diversifying the portfolio of firms. Connectors support the development of partnerships and reduce the cost of medicine produced in India. The adaptors accelerate the standardisation of India's industry and its access to foreign markets.

Regarding MWFs knowledge types, the propagandists use their knowledge of the local market needs and commercial network (e.g. doctors, retailers and stockists) to sell pharmaceutical products. The pioneers use their understanding of the demand and knowledge of pharmaceuticals to fulfil market gaps. The connectors are familiar with the South-South value chains and cultivate multiple connections alongside them. Finally, adaptors are highly skilled in technical and regulatory aspects of pharmaceuticals in specific countries and world regions.

The following section details the key characteristics, business strategies and activities of these different types of MWFs.

4.2. Types of 'manufacturers without factories'

4.1.1. The propagandists

The most common MWFs in our sample concentrated on the branding and direct promotion of low-value generic formulations amongst medical practitioners and distributors. These propagandists play a substantial role in developing new commercial versions of existing formulations through innovative marketing and branding campaigns. In India, generic medicines are generally prescribed, sold and purchased under their brand names. Since generics suffer from a poor reputation and a lack of public awareness in India, the 'brands' instigate confidence amongst patients, although they do not correlate with quality ([Aivalli et al., 2018](#)). Propagandists generally hide that they do not own and operate the manufacturing facilities that produce their brands, in order to build trust amongst patients and medical practitioners.

Depending on the extent of their activities, the scale of their market and the number of brands, these firms often have excessive staff. These staff are required to engage in direct promotional activities to doctors or hospitals through medical representatives. Former medical representatives, who often benefit from an extensive business network in the

Table 2. Types of MWFs and their spheres of activities (*source*: own elaboration)

Types of MWFs	Types of activity	Location of activity	Impact of activity	Types of knowledge
Propagandists	Branding, promotion, franchising	Specific districts, states and regions within India	Development of brands and brand loyalty	Distribution network, marketing skills
Pioneers	Discovering, developing and introducing unavailable products	Pan-India	Diversification of product portfolio, adoption of new technologies	Scientific knowledge and understanding of market needs
Connectors	Coordinating the logistics of production and supply	LMICs: semi-regulated markets	Development of partnerships, cost reductions	Knowledge of supply chain, business connections
Adaptors	Regulatory compliance and overseas product registration	Regulated markets and the rest of the world	Standardisation, upgrading, access to markets	Technical, regulatory, area-based expertise

distribution sector, are frequently found as the managers of propagandist firms. They rely on critical marketing and selling skills and multiple connections with doctors, pharmacies and distributors in large sales territories within the Indian pharmaceutical market. The Indian law facilitates this leadership structure because it allows medical representatives with more than five years of experience to obtain a Drug License, which is mandatory for any business involving drugs and cosmetics.

The propagandist's primary business model holds the paradoxical name of 'ethical marketing'. It includes activities that aim to convince doctors to prescribe generic brands by providing detailed information about the products through diverse educational material (e.g. flyers, magazines and newsletters) and a range of incentives (e.g. gifts, travels, commission and shared profits). One common practice is to organise 'health camps', whereby the firms enrol doctors to offer free consultations and prescribe their products. It can also take the form of distribution exclusivities, where hospitals enter into agreements with firms to charge branded drugs to the captive patient, or 'continuous medical education', whereby private firms introduce their products during conferences and seminars for medical practitioners.

The second model is 'franchised marketing'. The interviewees used to refer to this model as PCD for 'pharma cum distributor', 'propaganda cum distributor', 'promotion cum distributor' or even 'propaganda marketing'. The model entails exclusive supplier-buyer partnerships with wholesalers to create local monopolies on specific products and in certain zones. They deal in both Over-The-Counter product (OTC) and prescription drugs branded through their expertise in manipulating the labels, producing visual aids and packaging the formulations.

To conclude, the propagandists are MWFs in the sense of being designers and promoters of branded products.

4.1.2. The pioneers

Other MWFs in the sample introduced quality generics in India to address the specific demands of urban middle-class patients increasingly affected by what they refer to as

'lifestyle diseases' such as obesity, type II diabetes, arteriosclerosis, heart problems, high blood pressure and certain cancers. In the words of the directors of these pioneers, their objective was to fill 'market gaps', 'untapped markets' or 'niche markets'. These firms extensively participate in expanding the portfolio of India-manufactured products and encourage the adoption of new medical technologies.

The pioneers are not labour-intensive and generally lead a team composed of less than ten members. They are primarily active in Low- and Middle- Income Countries (LMICs), which lack diverse product portfolios compared to high-income countries. These pioneers possess excellent knowledge of local demand. The managers often have exposure to foreign markets and international value chains to learn market needs and acquire available technologies. For instance, one director explained a product scouting strategy involving identifying specialised pharmaceutical formulations sold in India but manufactured abroad and then producing these formulations locally. The director commented:

We do a market survey first to know which products are getting imported from outside and if there are not too many manufacturers in India which produce them. For instance, we list the products from China and produce them here.

A common practice of such firms consists of introducing innovative proprietary ingredients used abroad but not yet present on the Indian market, often for chronic illnesses. In its website's 'about section', one firm described its activity as 'bringing customised pharmaceuticals to the Indian market based on international products'. Another firm built its business around a single product that treats infertility amongst women. The executive director noticed that this product was successful in Europe and the USA but unavailable in India and intended to distribute it in exclusive partnership with a retailer with a national presence.

These firms are also instrumental in developing Novel Drugs Delivery Systems, that is, creating a new delivery system for an existing product and proposing formulations with different dosages to cater to new patients. These activities require a good knowledge of both pharmaceutical technologies and the changing consumer habits of Indian patients. One director explained that his market intelligence accounted for both market needs and existing supplies:

We innovate here by selecting the right products by studying the market where we want to export. We try to be very flexible to adjust to local markets. We do not have the same portfolio of products in every country.

To conclude, the pioneers are MWFs in the sense of business developers of branded products.

4.1.3. The connectors

Another type of MWF specialises in coordinating actors and the logistical management of pharmaceutical products in the Global South and building bridges between the diverse actors beyond lead firms (e.g. universities, firms, patient associations, charities, clinicians, regulators and policy-makers). These connectors play a significant role in joining the dots between intermediaries based on their expertise in finding the most cost-effective ways to bring products to the markets. These firms act as the critical intermediaries trusted by both partners and help bridge the 'confidence gap' that can be missing between actors from different places and cultural backgrounds. Their work is vital in connecting buyers and

manufacturers of low-value generic formulations and active pharmaceutical ingredients. The director of one company described its work as a ‘middle-man’ and his company as ‘opportunistic’:

We don’t manufacture anything. We buy the products which are made as per our requirements. [...] We have contact with the end customer, and we have very good contact with the supporting manufacturers. So, we work as a classic middle-man, but the products are registered in our name. [...] [Our company] is typically a merchant export company. So, we are an opportunist company. Now wherever there is an opportunity for making some quick money, we soup in and try to grab that. This is the business model, and this is very clear.

Another company also had ‘opportunity’ in its corporate slogan: ‘Spotting synergies, connecting dots, creating white space opportunities’. This opportunity-chasing business model is not without risks. Connectors can be ‘cut off’ by the manufacturers, as explained by the director of a manufacturing firm that used to work under that business model:

The problem is what is called ‘on percentage base’ sales. In the two first shipments, the manufacturer helps you out. The third time, he cuts you up and sells directly to the end-users. So, you don’t get anything.

The manufacturers often try and develop commercial capabilities to save on intermediary costs. Meanwhile, some connectors also try and maintain control over the manufacturing capacities for the niches they have identified. They adopt flexible business models where they work as intermediaries but register their branded pharmaceutical preparations on multiple markets to diversify the risks. One company director explained:

We have to sell the product with our name. Only once in a while, the customer insists that I also put my name on that, which is fine with us. [...] We have tied up with two large Indian companies. One is [...] a Bangalore-based company. And we are supplying them with two products now. We manufacture them as per their drawings and specifications and the designs from a company based in Mumbai, and we export them.

While the latter firm had a presence in several segments, most connectors specialise in the logistics of a handful of products. For instance, one of the firm’s businesses involved sending Hepatitis C medicine to intermediaries based in Russia, where the price of a complete treatment was much higher there than in India. This local firm was handling customs in India, while the Russian partners dealt with the medical practitioners in their country.

In the context of ‘semi-regulated markets’, these firms possess a significant competitive advantage through their vast social network. Numerous members of the so-called ‘merchant castes’ or ‘business communities’ (Tripathi, 2004), such as the Jain, Shah and Patel in Gujarat, are directors of such companies. With a long-standing tradition of trade, they extensively draw on their kinship and community ties to access finance to buyers and suppliers.

Besides these community members, directors with professional experiences in the pharmaceutical sector also extensively use their self-made ties to access partners, buyers and suppliers. Hence, the connectors are often firms managed by individuals who have a good command of the English language and historical exposure to the foreign markets where their firms operate.

4.1.4. The adaptors

Finally, a group of MWFs focus on making pharmaceutical products already supplied in the Indian market compliant with the rules and standards of different markets. The

adaptors play a significant role in promoting India's manufacturers to international markets and developing the portfolio of pharmaceutical manufacturing of low value and quality generics.

They differ from consultants because they often register the products under their names to build an exclusive portfolio. In some cases, they register the products in the manufacturers' name, for which they earn a consulting fee. However, India's cash-poor manufacturing units often cannot hire consultants and bear the cost of registering the facility and the products, particularly in the regulated markets. Consequently, they let the MWFs register the formulations under their names unless they can offer them other returns on investment such as shares, known as 'sweat equities' in this context. They can also partner with the MWFs by creating a collective entity that owns the licenses.

The activities of the adaptors involve producing the legal documentation, dossier registration, facility upgrade and even quality assurance by providing in-house testing. They also audit the supplier facilities, help them register with the regulatory authorities and often pay the yearly registration fee. They manipulate solid regulatory knowledge and generally keep a database of the various formats and requirements to obtain multiple certificates.

Such adaptors progress in global trade routes that increasingly securitise and rationalise the pharmaceutical flows through norms and standards (Quet, 2018). The latter cover manufacturing practices, intellectual property rights and trademarks. They are increasingly compelling across national markets, including LMICs (Pezzola and Sweet, 2016). Small- and medium-sized manufacturers in the Global South lack the skills to upgrade their facilities and obtain manufacturing licenses from local Food and Drug Control Administrations, the WHO, or foreign agencies. Hence, they often struggle to register their products abroad, particularly in countries with rules more stringent than the WHO manufacturing standards. For example, in India, local small- and medium-sized manufacturers struggle to deal with the international patent product laws (Chaudhuri, 2012). Failure to adopt complex manufacturing practices (e.g. India's Schedule M) has historically been fatal to many small- and medium-scale manufacturing units (Iyer, 2008).

Further, the absence of a skilled workforce and high costs associated with upgrading facilities result in these firms relying on adaptors who possess essential techno-legal knowledge. They fulfil the administrative requirements to access new markets. The adaptor firms play a crucial role in helping firms to manage regulatory requirements in India and other developing country markets. One MWF director recounted the reply of a manufacturer that stopped registering any of its products in foreign markets:

Boss, we tried earlier. We kept employees, and we were paying employees a lot to register products. In two years, only one country got registered and then no output.

This MWF director convinced the manufacturer to let him register its products for free but under his company's name. With 30 products registered in several countries of Southeast Asia, the director estimated that the turnover of his firm had reached about 500,000 USD in 2017. He insisted that his investment had been minimal, with an estimated 1,700 USD per product registration and very low-risk. The importer generally pays half of its order in advance, while the manufacturer or the exporting company initially has to bear the other half of the production cost.

The firms that aim at markets in high-income countries, on the contrary, have to risk large sums to obtain marketing approvals. Besides being costly—a product registration with the European Union can amount to 300,000 USD—the so-called 'Stringent Regulatory

Authorities' in certain countries require the constitution of complex registration dossiers. In one pharmaceutical company headquartered in Mumbai, this activity occupied most staff.

4.3. 'Manufacturers without factories' and the global pharmaceutical value chain

The data analysis revealed a similar pattern of specialisation of the MWFs in the different strands of the global pharmaceutical value chain to that identified by [Haakonsson \(2009b\)](#). The propagandists concentrate on branding and directly promoting low-value generics, generic prescription drugs and OTCs among medical practitioners and distributors. The pioneers design quality generics after identifying new and unmet demands for specific API and formulations, drug dosages and modes of administration. Coordinating the actors and logistical management of low-value generics such as painkillers, treatments for tropical diseases and anti-infective drugs is the main activity of the connectors. The adaptors match each market's specific manufacturing and commercial requirements for making low-value and quality generics compliant.

The Indian MWFs are not involved in the strand of branded generics, which is still widely dominated by research-intensive multinational firms. Such pharmaceuticals are also produced in India, but generally by large manufacturers, which often operate as suppliers to Northern firms. Instead, the local MWFs are involved in pharmaceutical strands that are typical 'buyer-driven' or 'non-driven' value chains in the GVC literature ([Haakonsson, 2009b](#)). In the strands of quality generics, international approvals form the main entry barriers. In contrast, the strands of low-value generics require low production costs and limited quality requirements, such as WHO manufacturing standards.

We can conceptualise the local pharmaceutical MWFs as organisations that handle knowledge-intensive activities to remedy local manufacturers' legal, technological and commercial shortcomings. They mobilise existing manufacturing capacities and turn available raw materials into value-making pharmaceuticals. Hence, they have a core function in South–South pharmaceutical value chains where multiple manufacturing capabilities and assets are underutilised or inactive. Although they essentially power these chains, they only capture a portion of the value they help create.

5. Implications for GVC/GPN research

This section discusses the implications for research on South–South pharmaceutical value chains and GVC/GPN research. We first discuss the role of the local MWFs in coupling South–South production networks. We then analyse their role in industrial upgrading in the Global South. Lastly, we discuss the impact of the MWFs on the forms of governance of the value chain and economic development.

5.1. South–South production networks, 'manufacturers without factories' and strategic coupling

The local MWFs play a critical role in the strategic coupling of their regions to South–South production networks. [Table 3](#) highlights this role with a specific representative example from fieldwork. It shows that the 'propagandists' establish brands amongst the domestic market while the 'pioneers' assist in identifying the market opportunities in India and developing countries in general. The 'connectors' smoothen the value chain by building trans-regional connections using their social network. Eventually, the 'adaptors' help

Table 3. MWFs and the coupling of South–South production networks

MWFs	Role in coupling South–South production networks	Some examples
Propagandists	Creating loyalty towards home brands amongst patients and medical practitioners	Firm A promotes two formulations prescribed to men with erectile dysfunction (Generic Sildenafil) and competes against Pfizer's Viagra across Western India.
Pioneers	Identifying treatments that are not yet available in developing countries	Firm B identified a treatment for Polycystic Ovary Syndrome and irregular menstrual cycle in women that was only present in Europe and the USA. Manufactured via a third-party company from Gujarat, the product is now commercialised pan-India
Connectors	Facilitating trade of pharmaceuticals between firms in developing countries	Firm C used its social network amongst the Indian diaspora in Ghana and Nigeria to find distributors and antidiabetic treatments in these countries manufactured by an Indian firm based in Baddi (Himachal Pradesh).
Adaptors	Upgrading firms from developing countries to global manufacturing and commercial standards	Firm D has helped a manufacturer based in Maharashtra obtain the EU-GMP certifications and has successfully registered its generic version of Vagifem (treating menopausal symptoms) in the EU market.

local industries enforce certain regional standards and access international markets with specific regulations.

The crucial role of the MWFs in South–South coupling processes is encouraged by the specific socio-economic context of the Global South. Since LMICs often host fragmented distribution systems (Smith and Hanson, 2012), the MWFs utilise their knowledge of diverse intermediaries and the resulting information asymmetries. In this context, the trust and political connections that these firms can provide are vital to penetrating these markets. The area-specific knowledge of the MWFs plays a significant role in coupling domestic and foreign markets in the Global South. As the legal, financial and political environment is less harmonised in the Global South than in markets in the Global North, the knowledge of national specificities, particularly the regulatory framework, appears to be central. Moreover, the lack of quality data on the local consumer markets requires relying on informal local sources that some MWFs possess.

Additionally, the MWFs play a significant role in creating local acceptance of markets where Southern products sometimes suffer from a bad reputation. They can locate micro-demands, often for low-cost products, with no competition from local or foreign competitors. They can address these demands flexibly, changing production towards market and business priorities without significant capital investments, using brands and pricing that appeal to the local population.

It is thus clear that the coupling processes involving the local MWFs differ from the processes led by large multinational firms. The connections are facilitated with smaller market spaces, often at an intranational scale, and are more likely to evolve. Pasquali and Alford (2021) demonstrated that branching multiple markets rather than a few large ones

could lead to more product diversification and economic returns, although not necessarily more sophisticated products. Such ‘flexible’ coupling could have a positive impact on local industries.

Overall, the MWFs facilitate coupling to a diversified set of regions and may positively impact their capacity to adapt to changes in demand composition, supply availability or regulatory framework. This finding confirms that small firms are not passive actors that merely benefit from their government’s promotional activities as part of the top-down coupling strategies of the Southern States (Indraprahasta et al., 2019). Although they borrow the paths forged by other actors, particularly the central States and large firms (MacKinnon et al., 2019), the MWFs also create new paths and enlarge existing ones. In India, the State had strategically ‘unplugged’ its pharmaceutical industry from the global market in the 1970s and 1980s (Horner, 2014a), paving the Indian MWFs’ contemporary routes.

5.2. South–South value chains, ‘manufacturers without factories’ and industrial upgrading

The local MWFs are critical to upgrading local industries in the Global South. In that sense, they are strongly distinct from the ‘non-practising entities [that focus] on earning licensing fees’ (Pénin, 2012) that the economics literature describes as half ‘trolls’ and half ‘market-makers’ (Shrestha, 2010). On the contrary, we show that the MWFs from the Global South do not capture manufacturing value in predatory ways but are likely to help the manufacturers to move into the production of high-value products which require strong R&D, production, marketing and distribution capabilities.

The literature that conceptualises the extraction of rents based on the commercialisation of intellectual property monopolies (Zeller, 2007) and the financialisation of pharmaceutical companies (Klinge et al., 2020) mainly draws on the case of large firms from the Global North. In contrast, the local MWFs from the Global South have limited investment capacities. Instead of financing pharmaceutical production, they value their expertise at different steps of the South–South value chains, in the instance of the pharmaceutical industry (see Figure 3 below).

The role of the MWFs in upgrading processes in the Global South differs from most lead MWFs from the Global North as they are highly specialised in manufacturing-support activities. Rather than ‘downgrading’ the manufacturers by connecting them to markets with less high-tech specifications, they upgrade them in line with local market needs. They bring necessary knowledge capital to support the adoption of improved manufacturing technologies and standards of production as well as diversification of product and brand portfolios.

Consequently, some companies without factories have started acquiring or building manufacturing assets. They apply their data on consumer preferences, regulatory requirements and technological knowledge to integrate manufacturing activities into their business model. Some have been listed on local stock exchanges to raise capital and develop their manufacturing activities in recent years. This process contrasts with those documented in the GVC/GPN literature, for example, full-package manufacturers from the Global South upgrading towards higher value-added activities.

5.3. South–South value chains, ‘manufacturers without factories’ and governance

The presence of local MWFs in South–South value chains also impacts the governance and related economic development processes. Against claims that South–South value

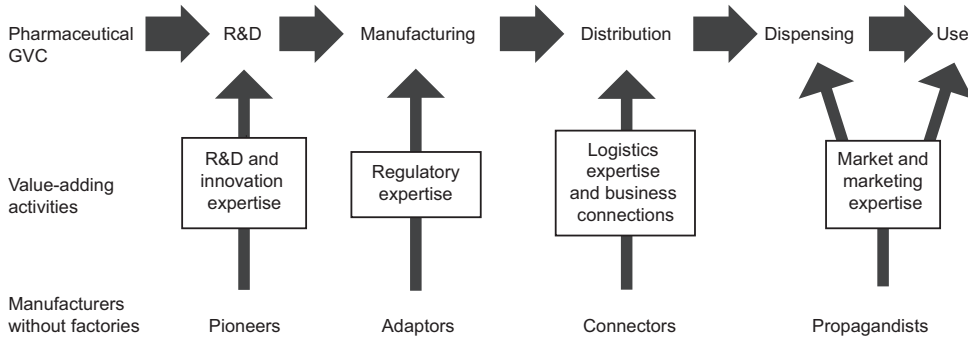


Figure 3. Southern MWFs and value-adding activities in the pharmaceutical GVC.

chains are ‘non-driven’, we show that local MWFs drive them. However, the drive does not appear as smooth as in North–South value chains. On the contrary, the more significant number of actors in South–South value chains make the drive jerkier. In the pharmaceutical value chain instance, only a few sellers or producers dominate North–North and North–South pharmaceutical value chains (Gereffi, 2011).

In contrast, the South–South chains are segmented into multiple value-adding activities, inter-connected through complex horizontal and vertical linkages (Jeffery, 2007). This configuration encourages the hyper-specialisation of MWFs, to cater to the different needs of the diverse actors. They specialise in certain activities related to data analysis, promotion, delivery and generally cover specific geographical areas, products or manufacturing processes or aspects. This hyper-specialisation is a boon for manufacturers, which can benefit from a wide range of expertise.

Additionally, the manufacturers and the other actors of the South–South value chains can benefit from the higher competition between the MWFs to establish more equal relationships with them, as compared to North–South value chains. The existing research notably suggests that more equal relationships could promote knowledge exchange rather than top-down knowledge transfer from the lead firms to suppliers. This finding complements some recent GVC/GPN work suggesting that several local firms operating in the same area can group as ‘collaborating competitors’ and enable quicker responses to fast-changing market demands (Tessmann, 2018).

Overall, the local MWFs foster a form of leadership that is more democratic and more conducive to economic development. New forms of technoscientific capitalism are emerging in the Global South. The current Science and Technology Studies literature, based mainly on Northern studies, suggests the rise of firms that do not own the machines or manage the workforce that produces the goods and services (Birch, 2017; McGoey, 2017; Birch and Muniesa, 2020). These studies indicate that a few monopolistic firms dominate this emerging technoscientific accumulation regime (Rikap, 2019; Birch, 2020). In contrast, our research shows that these forms of rent are less omnipotent in systems that include a more significant number of stakeholders and rent-making firms.

6. Conclusion

This article reveals the existence and critical role of the local MWFs in the South–South value chains. They significantly impact regional economic development by supporting the

strategic coupling of Southern regions in more flexible ways, reducing their dependence on a limited number of markets and segments of the value chain. They also support local manufacturers by upgrading their products and processes according to spatially specific market requirements. Lastly, MWFs lead South–South value chains in less dominating ways than the large multinational firms, driving them in multiple directions and leaving room for encouraging mutual transfers between partners. They shape an ‘alternative’ form of pharmaceutical capitalism in the Global South, distinct in its socio-spatial structures, internationalisation trajectory and sociotechnical imaginaries (Rault Chodankar, 2020).

Our findings also invite us to reflect on the blurred boundaries between marketing and manufacturing activities, often clearly demarcated in GVC research. In South–South value chains, local firms do not appear ‘locked’ into specific activities; they seem to move downward and upward more seamlessly. Longitudinal analyses of the activities of the MWFs, the suppliers, and the distributors could confirm this hypothesis. GPN/GVC research should therefore focus on the myriad of local small-scale firms with limited physical assets and blurred functions often absent from statistics and public coverage.

This article generally stresses the positive role of the MWFs in economic development in the Global South. Still, it is worth mentioning that their impact on social development, particularly on public health, is debatable. For instance, the ‘propagandists’ seem to participate in the ‘pharmaceuticalization’ of the developing world, understood as the increasing circulation of commercial drugs with unclear benefits for public health (Fox and Ward, 2008; Abraham, 2010). This issue remains widely understudied in the context of the Global South (Bell and Figert, 2012; Pollock, 2014). Additionally, the complex manufacturing arrangements in which MWFs participate encourage a lack of transparency concerning product origin and liability issues. Although the circulation of commodities always generates economic value, the health value does not follow the same valuation cycle (Pordié, 2021). GVC/GPN research might thus also benefit from an analysis of the broader impact of the MWFs on public health in the Global South.

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