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Perspectives in interfirm global trade relations and chain governance: Transfer Pricing and Sustainability implications for supplier firms in developing countries

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Abstract

This study intends to further Humphrey & Schmitz's (2008) insights on the global value chain (GVC) by analysing the inter-firm global trade and transfer pricing relations between buyers (of developed countries) and suppliers (of developing countries), with perspectives from India-based software developer startups. Through a review of the literature, the study highlighted the current state of global inter-firm trade relationships and the function of global trade policies and standards in defining these relationships. In addition, the study explored the relevance of value chain governance and transfer pricing for the Indian software developer startups' growth through robust trade policies and standards and how the present value chain governance affects the sustainability of the startups involved in inter-firm trade relations. Findings determined that startups from emerging economies witnessed immense challenges regarding prolonged sustenance—affected by a lack of updated technology and products per the global demand and inter-firm relations in the global South value chain (SVC). Besides, the value proposition of Indian software startups is significantly restricted to "run and operate" instead of "advise, build and implement", providing end-to-end solutions. The study's implications lay in highlighting the Indian software startups' capacity development strategies through the North-South and South-South value chain participation, developing high-end skill-intensive products and services and improving the production quality in the domestic value chain before entering GVC through functional upgrading.

Keywords: Global Value Chain; Transfer Pricing; India; Software; Startups; North-South; South-South; Governance

JEL: F60; F10; M20; O57

1. Introduction

In the global value chain governance, Indian startups are playing a growing role by developing innovative solutions to address the challenges of managing complex global supply chains and enhancing these solutions to address dynamic needs. Certain key areas where the impact created by Indian startups like Zoho Corporation, Freshworks, Byju's, Shopsy, Biddano, Blu Atlas and SustainX is visible are supply chain visibility, risk management and sustainability. These firms have disrupted traditional industries in the global supply chain solutions through high quality and affordable cloud-based business, collaboration and productivity applications and customer support, sales, and marketing solutions in the software-as-a-service (SaaS) market, innovative logistics management, B2B healthcare supply chain, supply chain risk management, and sustainability consulting, becoming key players in global value chain governance by reducing emissions, improving working conditions, and using sustainable materials, etc.

Considering the current positioning of Indian startups in the global value chain (henceforth, GVC), measuring its implications for their growth and sustenance is imperative since India has also witnessed a deepening funding winter in 2022 among tech companies amid massive layoffs. The PwC India report noted the two-year slump in startup funding

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at \$2.7 billion in the third quarter of 2022, including the seed stage rounds, which dropped by 38% compared to the previous year. Under such a situation, despite the increasing production process fragmentation into a large array of sequential stages coordinated into GVCs, to what extent can vertical specialisation and interfirm relationships for exchanging knowledge and gaining productivity contribute to the sustenance of the Indian startups? This study, furthering John Humphrey and Hubert Schmitz's research on interfirm trade relations in global value chains, has explored the relevance of value chain governance for the Indian software developer startups' growth through robust trade policies and standards and how the present value chain governance affects the sustainability of the startups involved in inter-firm trade relations. Most importantly, Indian software firms have largely been projected as one of the largest suppliers of the North Value Chain or NVC (comprising of the industrialised nations), providing middle-to-low-end coding services, testing and routine maintenance as part of the overall software development process instead of high-end software services. Can this substantial dependence on NVC lead to the sector's sustenance in the long run, addressing the aggressive software developments in other emerging economies like China and Brazil? Or is more diversified participation in the North-South and South-South value chains is need of the hour? This study attempted to discover, through secondary research, establishing a conceptual understanding of the issue for academic researchers and industry practitioners.

The study's findings have implications concerning the requisite development of global standards and policies in inter-firm trade and how the weaknesses in existing chain governance and the nature of the relationship between the firms affect the startups' growth and sustainability. In addition, theoretically, the study's implications involved understanding the role of value chain governance in startups' sustenance through competent inter-firm relationships— requiring more attention through empirical studies on the issue. In other words, owing to a lesser focus on the emerging economies' startups' role in the GVC and lack of fresh ideas on their sustenance through their participation in the GVC and international trade, this study intends to help academicians and policymakers gain insights on prospective strategies new businesses can take to address unicorn failures. Overall, the study furthers the global value chain literature by reflecting on the existing inter-firm trade relationship and chain governance policies from a startup sustainability performance, laying the base for further investigation and formulation of effective policies.

John Humphrey and Hubert Schmitz have extensively researched interfirm trade relations in global value chains and have observed how participation in global value chains upgrades industrial clusters (Humphrey & Schmitz, 2002a) and the role of trust in defining the inter-relationship between firms of transition and developing economies (Humphrey & Schmitz, 1998). The scholars have also highlighted the significance of the positions of the developing country manufacturers or producers selling to global buyers in influencing their upgrading efforts (Humphrey & Schmitz, 2002b) and the importance of understanding regional governance changes to understand the changes at the worldwide level (Humphrey & Schmitz, 2008). Post-Humphrey & Schmitz studies on GVC have widened significantly, wherein stress is given on innovativeness and performance (Brancati, Brancati & Maresca, 2017), enhancing efficiency outcomes through social mechanisms (Kano, 2018) and structured integration of GVC governance in the realm of international business (William et al., 2020). Most importantly, Pasqali and Alford, (2022) have questioned the absence of studies on the suppliers in the global south catering to the Southern-end markets. Following Humphrey & Schmitz, most studies have only focussed on Southern-based suppliers catering to global North (developed) markets. However, recently, there has been a growth in South-South value chains (UNCTAD, 2015) though, studies on GVC in the international business literature have yet to focus on the advent of startups, paving the need for this study. This research intends to further (Humphrey & Schmitz, 2008) insights on the global value chain by analysing the inter-firm international trade relations between buyers (of developed countries) and suppliers (of developing countries), with perspectives from India-based software developer startups. The domination of Indian software developers globally is well-founded (Ghosh et al., 2021; Huang et al., 2021b; Murphree & Breznitz, 2020a, 2020b; Nuthalapati et al., 2020; Nuthalapati & Nuthalapati, 2021; Pattanayak & Chadha, 2019; Sturgeon & Kawakami, 2011). However, what is the share of startups in the global value chain? Furthermore, how do the current value chain governance and international trade relationships among firms determine the growth of startups in emerging economies? Through a review of the literature, the study will highlight the current state of inter-firm trade relationships and the function of global trade policies and standards in defining the relationships, the relevance of value chain governance for firms' growth through robust trade policies and standards and how the present value chain governance affect the sustainability of the startups involved in the inter-firm trade relations.

Studies have noted the importance of internal governance of the global value chain in enabling firms' continuous development (Morrison, Pietrobelli and Rabellotti, 2008; Pietrobelli & Rabellotti, 2011; Kotturu and Mahanty, 2017; McGrath et al., 2021). However, the nature of continuous development depends on the competencies of the associated firms. Therefore, participation in global value chains provides startups and small firms of emerging economies with crucial information on the type and quality of technologies or products the global market demands (Pietrobelli & Rabellotti, 2011). At the same time, the local technological capabilities, dynamics of the governance patterns and the

extent of fostering carried out by the global value chain leaders also determine the growth of startups and small firms in the worldwide value chain ladder. Therefore, through the literature review, this study determines if the present value chain governance, global trade policies, standards, and trade relationships contribute to the sustainable growth of SMEs in emerging economies.

Startups from emerging economies have witnessed immense challenges regarding prolonged sustenance, of which lack of updated technology and products as per the global demand play a crucial role (Maruchek et al., 2011; Wang, 2016; Jha, 2018; Mukherjee, 2018; Dinesh & Sushil, 2019; Meahjohn and Persad, 2020; Li and Hasan, 2021).

Therefore, the study intends to explore the sustenance strategy Indian (or emerging economy's) startups can apply, considering there exist two schools of thought— one, focussing on the upgradation of businesses through knowledge and inter-firm relations, essentially involving the North global markets and the second emphasising on the rise of the global South as both the suppliers and buyers. Besides, considering that small businesses based in developing countries like India have a share of 40% in the contemporary period in the global value-added trade, increasing from 20% in 1990, and their increased participation in GVC contributes to 28% of their GDP in an average, the study analyses if the startups will benefit from focussing only with a particular region (high-income North or low-income South) or in the international market, in general. As Barrientos, Gereffi, and Pickles (2016) pointed out, while American and European producers outsource manufacturing and services to low-cost developing countries, South-South trade majorly involves intermediate goods and therefore, supplier firms here play a significant role "in shaping the structure and governance patterns of global and regional value chains" (p.1215). However, although the South market has recently led expansion in consumer growth, it is characterised by high-volume and low-price trends, unlike the low-volume-high-price markets of the global North (Pasquali, 2021). Therefore, the study is imperative in understanding how startups of emerging economies must approach the global market, considering the South-North market divide, for prolonged growth, especially during the recent onset of funding winter in the Indian startup industry, affecting their performance and sustenance.

2. Genealogical evolution in the concept of GVC in the 21st century

Although this study has explored the subject of supplier startup sustenance through GVC, keeping the perspectives of (Humphrey & Schmitz, 2002a, 2002b, 2008) on GVC and intra-firm relations as the base, the concept underwent a significant transformation in the past 15 years. While in the early 2000s, the GVC was primarily driven by multinational corporations (MNCs) that outsourced production to low-cost countries, in recent years, there has been a shift towards more complex and integrated GVCs, involving a more comprehensive range of actors, including small and medium-sized enterprises (SMEs). Several factors, including technological advances, the rise of e-commerce, and the growing importance of sustainability, have driven this shift. One of the most significant changes in the GVC has been the rise of SMEs. In the early 2000s, SMEs played a relatively minor role in the GVC. The period was instead marked by offshoring or outsourcing by MNCs certain stages of their production processes to countries with lower labour costs. This allowed them to take advantage of cost savings and global specialisation. Manufacturing activities, particularly in labour-intensive industries, moved from developed economies to emerging markets like China, India, and Southeast Asian countries.

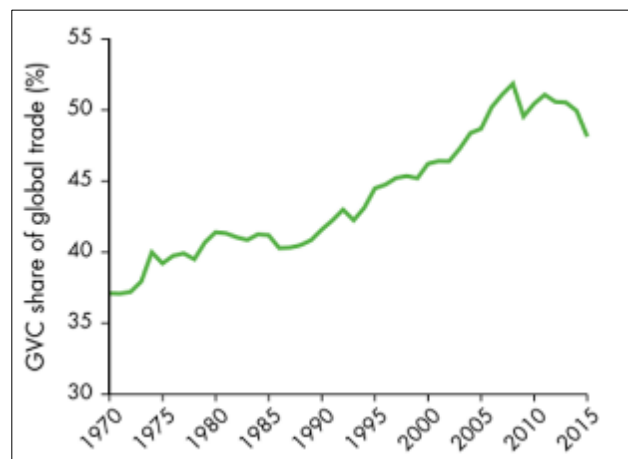
However, in recent years, their role has grown significantly partly because SMEs are often more agile and adaptable than MNCs, making them better suited to the demands of the complex and integrated GVCs of the 21st century. For instance, the period between 2010 to 2015 witnessed rapid technological advancements, particularly in digitalisation, automation, and communication, transforming the global value chain. These technologies facilitated the coordination and integration of activities across different value chain stages. Companies adopted digital platforms, cloud computing, and data analytics to streamline operations and enhance efficiency.

Another significant change in the GVC has been the rise of e-commerce. E-commerce has enabled businesses to connect with suppliers and customers worldwide, leading to a more integrated and globalised GVC. This period was followed by reshoring and nearshoring, as well as trade policy uncertainty, wherein the global trade landscape changed significantly with the rise of protectionist measures, such as trade tariffs and trade wars between major economies like the United States and China, creating uncertainty for global value chains. Companies faced challenges regarding disrupted supply chains, increased costs, and changes in sourcing strategies. Many organisations started diversifying their supplier base and exploring alternative markets to mitigate risks. Besides, In response to rising labour costs in some offshore destinations, coupled with concerns about supply chain disruptions and quality control issues, there was a trend towards reshoring and nearshoring. Reshoring refers to bringing back production activities to the home country, while nearshoring involves relocating them to geographically closer countries. This shift aimed to reduce transportation costs, improve control over production processes, and respond more quickly to customer demands.

2020 and the post-pandemic period had a profound impact on global value chains. The widespread disruptions caused by lockdowns, travel restrictions, and reduced consumer demand highlighted vulnerabilities and interdependencies within the value chains. Companies faced supply shortages, logistical challenges, and a need for greater resilience. As a result, there was an increased focus on building more resilient and flexible value chains, emphasising local sourcing, inventory management, and digitalisation. Finally, the growing importance of sustainability has also impacted the GVC. Businesses are increasingly looking to source their inputs from sustainable sources and produce their products sustainably, leading to a demand for more sustainable practices throughout the GVC. In addition, stakeholders, including consumers, investors, and governments, have increasingly demanded transparency and responsible practices throughout the value chain. Companies have started incorporating sustainability considerations, such as reducing carbon emissions, ensuring fair labour practices, and promoting circular economy principles. This has led to adopting sustainable sourcing, ethical production, and greater accountability in global value chains.

It's important to note that the evolution of the global value chain is a complex and ongoing process shaped by many factors. The development of the GVC has had several implications for businesses and policymakers. It has meant that companies need to be more agile and adaptable to compete in the global marketplace. They also need to be more aware of the sustainability implications of their operations. For policymakers, it has meant that they need to develop policies that support the development of a sustainable and inclusive GVC.

In recent years, studies by Ponte, Gereffi and Raj-Reichert (2019) and Pasquali (2021) have made notable contributions to GVC, emphasising the growth of South-based suppliers in the global South market. For instance, Ponte, Gereffi and Raj-Reichert (2019) have noted that although GVCs have opened new avenues for organisations in developing countries, especially SMEs and startups, they have also heightened the risks and uncertainty of participation. To be part of the GVC and ensure inclusive development, small organisations must increase value-added shares captured domestically and somewhat distributed among various social groups. Besides, the study noted the role of knowledge-based conditions and trajectories leading to a better deal along the GVC for small, disadvantaged actors to 'upgrade' their position in the value chain for economic and social gains.

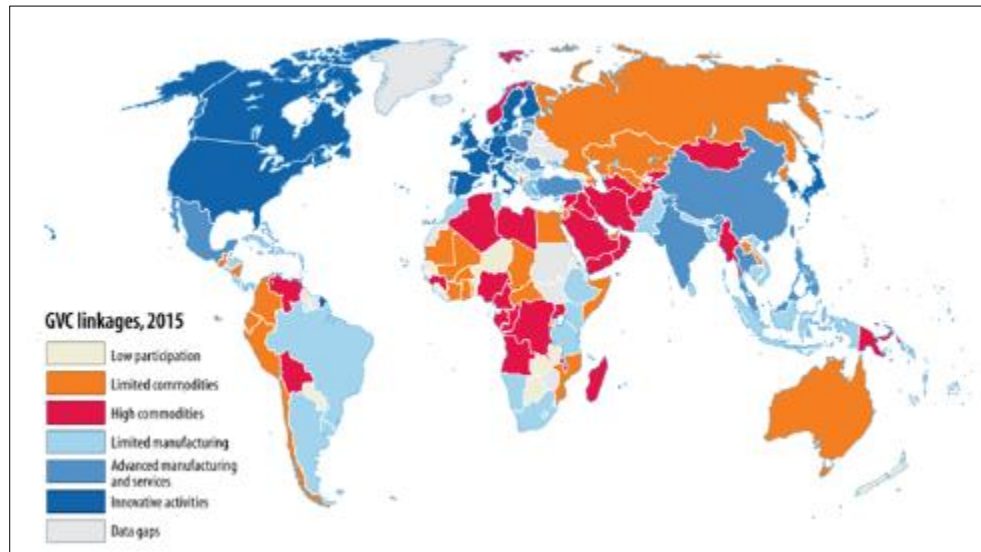


Source: Antràs, (2020)

Figure 1 GVC trade percentage in the past 45 years in the world trade shows an upward movement till 2010 and stagnating or moving downward gradually in the next five years

The significant difference between the 20th-century and 21st-century GVC is marked by the gradual replacement of selling goods manufactured locally in international markets with cross-border factories and the rise of global commerce through the intra-factory movement of goods, investments, knowledge, workforce and ideas. Therefore, contemporary GVC 'denationalised' competitive advantage (Taglioni & Winkler, 2016), wherein suppliers from emerging economies join the chain to become competitive, followed by industrialisation by intensifying participation instead of domestically building the entire chain to gain a competitive edge internationally. Nonetheless, participation in the GVC is not uniform among developing and underdeveloped nations— while East, South, and Southeast Asian economies have entirely embraced the GVC revolution, countries in Africa and South America perceive GVC as a trap with better jobs in the North over the South (Figure 2). In addition, among the GVC participating countries, the sectoral composition of the GVC flows is diverse (Antràs, 2020). For instance, countries like Ethiopia specialise in agricultural GVCs, while some like Chile and Norway participate in natural resource sectors. Then some are involved in the manufacturing segment of GVCs with less-developed economies with low-tech manufacturing like Tanzania and high-tech manufacturing processes provided

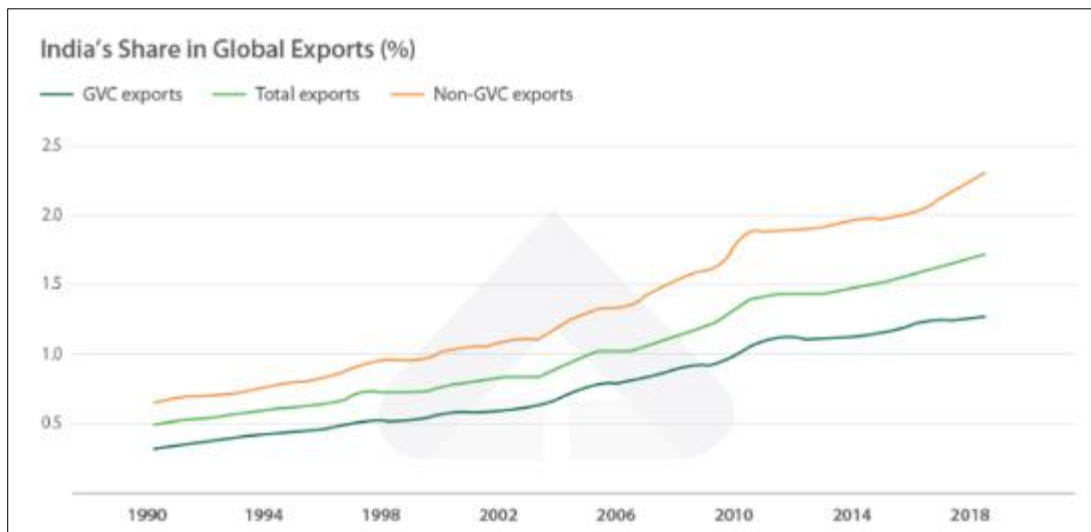
by developed economies like Slovakia, Mexico and China. Similarly, a small subset of countries like India is involved in services GVCs, highlighting the unevenness of GVC participation by different economies. The perceived ineffectiveness of GVCs by certain economies and the uneven sectoral proportions of GVCs may explain the stagnation (and even gradual decline) of the GVCs in the past decade (2010-2020) when compared to their performance between 1990 and the early 2000s (Figure 1).



Source: Antràs, (2020)

Figure 2 Uneven distribution of sectoral GVC trade among different economies and regions

3. Indian Startups in GVC- Challenges and Implications



Source: Ernst and Young, (2023)

Figure 3 India's share in global exports vis-à-vis GVC exports from 1990 to 2018 shows steady growth, but the latter lags behind the country's global export share

Concerning the type of GVC participation, India is majorly involved in forward linkages, heavily dependent on exports. Despite the resistance among certain lesser and under-developed economies in widely participating in the GVC trade, empirical work on international trade has noted a positive contribution to GVC participation. Through an intricate international division of labour, the growth of GVC is identified with trade-related heightened income gains rather than a relative expansion of traditional trade. India has also witnessed increased GVC participation across sectors, especially in technology-based services and automobile manufacturing (Gupta & Chaudhary, 2016). Reports from the OECD, World Bank and WIPO position India's GVC participation as balanced, but its productivity, innovation and role of foreign

subsidiaries in trade are low, unlike large Asian economies like China and Japan, which are highly ranked across all the parameters. In addition, when India's share in global exports vis-à-vis GVC share is compared, the latter declined in recent years to 41.3% from the initial increase of 47.6% in 2008 (Figure 3).

of raw and intermediate products instead of exports based on imported products. Consequently, the country cannot reap the optimal benefits of participation by becoming a job engine or upgrading its contribution to the automobile GVC. This is because India is majorly involved in low-value labour-intensive activities like in the automobile industry GVC primarily involves assembly, components and basic manufacturing instead of high-value skill-intensive activities like research and development, specifications, standards development and market development (Gupta & Chaudhary, 2016). Besides, its inward-looking measures, namely, emphasis on protecting local industries through tariffs, subsidies, quotas and others, have hindered the country from fully capitalising on the opportunities. The country's lesser utilisation of its vast pool of micro, small, and medium enterprises (MSMEs) and startups for increased high-tech production, innovation and enhanced linkages with lead firms for aggravating exports along with a lack of access to adequate finance has further added to its weakening supply chain linkages of the domestic firms, affecting the country's trade growth.

4. Indian Software Value Chain

In the post-pandemic period, sectors that can recover faster and provide more employment opportunities for the country's economy would need careful policy prescription. The software industry is one such sector, which is fast growing in India, creating various employment opportunities regarding research, innovation, and services. The concerned industry is abundant with quality engineering human resources and is comparatively independent of financial capital and physical infrastructure, which are otherwise lagging in India (Huang et al., 2021a). Cheap labour due to the constant influx of quality engineering graduates with technically high-skilled and English proficiency since 1997 contributed to a significant amount of software production in the country, ready to be outsourced and eventually to the current sustenance of the sector. Besides, the boosting of communications infrastructure, such as internet networks, through its 12th Plan (2013-17), where the spending was increased to US\$ 1 trillion and public-private partnerships (PPP) for transportation networks and special economic zones have enabled firms to expand and personnel to travel to sites seamlessly. Such infrastructure endeavour has increased India's ability to carry out outsourced work and emerged as a hub of GVC. in software services, albeit with challenges of rampant employee attrition due to lower wages (when compared to global standards), brain-draining and uneven infrastructural developments (rural areas and small cities often lack the necessary internet bandwidth and communication infrastructure to cater to demands to foreign-based lead companies).

Although substantial academic research has been conducted on developing a GVC framework to identify the process involved in the sector's participation (for instance, Humphrey and Schmitz (2008), Gereffi (2018), Morrison, Pietrobelli and Rabellotti (2008), Gölgeci, Gligor, Lacka and Raja (2021) and others) (Huang et al., 2021a) perceived these frameworks as generic and identified the waterfall model of software development as the appropriate framework from insights presented by studies of Kumar & Bhatia (2014), Arora et al. (2001) and Sharpe (2009). The model comprises the stages of planning, analysis, design, implementation and system, encompassing the two components of the software value chain— software services and products. The Indian software industry majorly provides customised services instead of package products to lead firms based in international markets. They rarely cater to the domestic market, having a GDP share of 6.1%, rising from 3.15% in 2002. On the contrary, the IT exports share of the total exports in 2019 was 39.1%, rising from 20% in 2002, eventually garnering US\$ 106 billion in revenue in 2021-22 (Ernst & Young, 2023). Of the total allocation of international markets, the global North has a dominant share in outsourcing IT services to India than the global South market, of which the US had the lion's share of 62%, followed by the UK at 17%, the rest of Europe at 11% and Asia at 8% in 2018. In 2022, however, the share of Europe increased to 23%, and that of Asia and the global South market increased to 22% of the country's total IT services exports.

In the global South, India's IT and BPM exports to the global South reached \$15.4 billion, of which the UAE is the largest market for Indian software services, with exports reaching \$3.4 billion in 2022. The UAE is a central hub for international trade and finance in Asia, and Indian IT companies have a strong presence in the country, providing a wide range of services, including IT consulting, software development, and business process outsourcing. This is followed by Saudi Arabia (exports of \$2.5 billion in 2022), South Africa (\$1.8 billion in 2022), Nigeria (\$1.5 billion in 2022) and Kenya (\$1.2 billion in 2022). India's rising contribution to global software services has led to the set up of 1500 Global Capacity Centres (GCC) in the country in 2022, which comprise certain large and iconic businesses of the concerned sector. The country also accounts for 45% of the GCCs worldwide, which accounts for 50-70% of the global technology and operations headcount and eventually contributes to innovation, competition, and efficient services owing to the GCCs acting as the centres of the talent pool (Ernst & Young, 2023).

Interestingly, there is a difference regarding the type of IT services India provides in the North (NVC) and South value chains (SVC). Initially, the industry was built to provide middle-to-low-end coding services, testing and routine maintenance as part of the overall software development process, wherein the lead firms— based in the global North— carried out the software's architecture, design and conception. To carry out the task more efficiently, however, the industry designed a process innovation termed the Global Delivery Model (GDM), providing the onshore high-end and offshore less-demanding jobs, reducing the IT service provision costs and requisite time of delivery, thereby equipping the Indian software industry to capture a large portion of the global service market.

5. Way Forward

Despite the innovative steps taken to revolutionise the Indian software industry's participation in the GVC, two critical points need to be explored to ensure the prolonged sustenance of the industry, especially its small enterprises, including startups. First is the absence of software products; second is the inter-firm relations in the global South. Indian software industry essentially provides routine software services through "low-cost, labour-intensive maintenance of legacy systems" and IT services foreign MNCs outsource (Huang, Asundi and Xing, 2021a; p.13). Such limiting of IT services reflects the industry's inability to enter high-end market niches like SaaS and other generic software packages. Biggest foreign software firms like Google, Amazon, Meta and Microsoft increasingly offer SaaS-based services, aggravating its demand in the GVC. However, such high-end software services also mandate a dynamic domestic market involving intensive interaction between developers and users. Small firms with limited financial resources are often disadvantaged in providing such requirements, enhanced marketing capabilities, and deep marketing outlays.

Nonetheless, in recent times, with the industry's participation in the NVC and SVC and the increase in diverse domestic and international players in the Indian market, firms have started leveraging the service providers for higher value services like full-stack digital engineering, consulting, experience design, product development and "incubate and industrialise new business process management use cases and processes often considered core to businesses today" (Ernst & Young, 2023; p. 37). In addition, the Indian business-to-business (B2B) SaaS ecosystem is being created, as is evident from the rising B2B SaaS unicorns. Such higher value business change paves the way for developing new segments (Metaverse, 5G/xG), empowering growth in the new segments through XaaS professional services, digital and platform engineering, cybersecurity, cloud-managed services and industrialisation of automation and AI. Most importantly, Indian IT services, to create a high-value niche in the GVC, are required to shift their value proposition from "run and operate" to "advise, build and implement", providing end-to-end solutions.

Notwithstanding the opportunities the Indian IT sector has regarding transforming into a higher-value business locally, optimal outcomes can be ensured with increased regional collaboration between export-oriented IT clusters and other local industries, enabling complete utilisation of domestic linkages with emerging non-software industries. However, in the present scenario, such domestic associations are missing, wherein the software export-oriented firms prefer restricted local innovation networking instead of independent entrepreneurial initiatives for seeking complementary knowledge at the global level and shortening the spilling of knowledge and skills from the software to other industries. Such restrictions, in turn, raise concerns about the software industry's sustainable development and upgradation prospects (Plecherro et al., 2020). Lema (2012) noted similar observations by stating that the Indian software industry's attempt to achieve competitive advantage through the transition from low-end service provision to high-end innovation is not only possible from suppliers learning from lead firms but through connections built outside outsourcing relationships and by combining external and internal sources of learning spaces. In a later study, however, Lema, Quadros and Hubert (2015) stressed the involvement of subsidiaries and independent suppliers in the Indian software industry in carrying out high-level activities on developing products and services. At the same time, though, these high-end 'reverse' innovations, like Infosys' Influx, MindTree's Partner CRM and SAP Labs India's SAP Business by Design, despite becoming increasingly prevalent, are limited to some players and cannot be termed that the entire local market is driving innovations (Lema, Quadros and Hubert 2015).

In addition to building external relationships with local industries, the sustenance of the Indian software startups is also dependent on developing inter-firm solid relationships in the SVC alongside the pre-existing old powers (global North). India has remarkably expanded in the Asian landscape by strengthening the regional value chain with the United Arab Emirates and South Korea. Although South Korea, from its development yardstick, is considered a North global market, a decade ago, the relationship between the two countries, especially concerning software products and services, was negligible. However, as Kim (2022) and Kumarasamy (2023) noted, in recent years, the strengthening of ties with South Korea as part of India's diversified economic network involves a supply value chain of novel technology areas such as 6G, artificial intelligence and digital infrastructure, boosting resilience.

Furthermore, a lucrative option that the Indian software startup suppliers can further cultivate extensively is their economic upgrading through value chain governance (Humphrey & Schmitz, 2008; Gereffi, Humphrey, & Sturgeon, 2005; Strange & Humphrey, 2018) with strengthened participation in the South value chains, primarily with Latin America and African countries. The startups and MSMEs of the software industry may confirm product, process and functional upgrading through stronger inter-firm relations of both South and North markets in the form of knowledge and skill exchange and engaging in high-value-added tasks (Pasquali, 2020). Nevertheless, Pasquali (2020) has also found no significant difference in the impact of participation in North-South and South-South value chains while exploring the upgrading of the Kenyan leather sector. The study also observed substantial variations in the governance in the Southern destinations— essentially depending on policy regulations and consumer preference. For instance, China in the global South emphasises value-added and knowledge-intensive tasks more than other Southern markets and the North, which boosts suppliers' functional upgrading (Van Assche & Van Biesebroeck, 2018; Wang & Wei, 2010). On the other hand, African markets are related to comparatively slower product upgrading, indicating relatively lesser demands in quality standards and entry barriers, thereby increasing competition (Ouma, 2010; Sheldon, 2012).

Albeit there are no direct studies on the implications of participation in the Indian software industry, especially the startups, in the SVC or North-South value chain and governance, hence the requirement of this study. However, studies on other Indian industries and suppliers based in Southern countries like Africa find no significant differences in impact concerning economic upgrading (Tessmann, 2017; Pasquali, 2020), although the South market has lower product quality demand, lower entry barriers and a lack of stringent institutional norms. However, participation in both South-South and South-North value chains slowly leads to product and functional upgrading. Besides, policymakers must focus on factors like these countries' industrial and trade policies in the global North or South instead of assuming business with developed countries automatically translating into higher or lesser upgrading for the local suppliers (Pietrobelli & Staritz, 2018; Tessmann, 2018). At the same time, care is needed to understand regional and lead firm-wise differences in strategies, quality of product/services demanded, and institutional policies of each destination. Not all firms and countries in the South contribute to similar economic upgrading prospects and governance in the supplier firms (Horner & Nadvi, 2018).

Another essential aspect which can ensure the sustenance of Indian software startups is inter-destination upgrading, as Pasquali (2020) proposed. The concerned upgrading refers to improving the production quality in the domestic value chain before entering the North-South value chains through functional upgrading. Saha, Bontadini, & Cowan (2023) have found a positive impact of inter-destination upgrading in India's South-South cooperation in trade and technology with East Africa, wherein Indian suppliers of spices moved up the ladder in the value chain through enhancing activities by building regional capacities before export.

6. Conclusion

Although there is extensive empirical and conceptual research on the Indian software industry and its role in the GVC, which also acknowledges the presence and challenges of the startups, emphasis on the latter's sustenance through GVC is seldom touched upon. This study reviewed the GVC participation environment of Indian software startups and highlighted the challenges. Later, specific recommendations were made for the challenges to enhance the sustenance and growth of the concerned startups. This study primarily focussed on the North-South and South-South value chain participation of Indian software startups and its implications on their capacity development. Although a conceptual representation of the issue was required considering its absence in the academic research, however, the study lacks empirical investigation to present qualitative or quantitative observations on the current capacity of the Indian software startups, institutional policies and support provided, regional value chain developed, and the impact of North-South or South-South value chain participation on their economic upgrading, inter-firm governance and eventually on their innovation and product/service quality contributing to their growth and profitability. In addition, the study has furthered Humphrey and Schmitz's (2008) observations on the upgradation of industrial clusters through participation in GVC by stating its role in capacity building of the supplier startups through capacity building in high-end skill-intensive products and services to cater to the foreign lead firms' dynamic demands and gaining competitive advantage. At the same time, the study also established the need for maintaining a multilevel value chain and not emphasising only lead firms based in developed economies. Nonetheless, the study acts as a base for such empirical investigations to validate or invalidate the suggestions provided as a way forward for Indian software startups.

Compliance with ethical standards

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