MASTERARBEIT | MASTER'S THESIS

Titel | Title

The influence of Samsung Electronics' investment on strategic coupling and regional development in Bac Ninh, Vietnam

verfasst von | submitted by

Finn Malte Weisner B.A.

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien | Vienna, 2025

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 855
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium Geography: Global Change and Sustainability
Betreut von | Supervisor:	Mag. (FH) Erika Faigen MSc PhD

Acknowledgments

First and foremost, I want to thank my family – my mother, my father and my sister – for their support, encouragement and confidence in me throughout this master's programme.

My appreciation also goes out to all my friends, many of whom I have spent countless hours with in the last year, working on different projects while also facing the challenges of writing a thesis together.

Finally, my gratitude goes to my supervisor, Erika. I am grateful for your support in helping me find my research topic. Thank you for guiding me throughout this process and dedicating so much of your time to providing me with valuable feedback and guidance.

Abstract

The electronics sector has often been central to export-oriented development strategies, potentially offering regions access to advanced technologies, skilled employment opportunities and rapidly expanding global markets. In this context, Vietnamese regions have emerged as key foreign direct investment (FDI) destinations for electronics lead firms such as Samsung Electronics. The company has shifted much of its smartphone assembly out of China towards Vietnam, in part due to rising costs and geopolitical shifts.

This thesis applies the Global production networks 1.0 (GPN 1.0) framework to analyze Samsung Electronics' strategic coupling processes with the region of Bac Ninh, Vietnam, from the groundbreaking of the lead firm's first smartphone assembly plant in the region in 2008 up to late 2024. Using qualitative content analysis following Mayring, this thesis examines 40 documents, with categories deductively derived from the GPN 1.0 framework, analytically focusing on value creation, enhancement, and capture. Findings indicate that while Samsung's investment created value through increased employment and development of regional infrastructure, local supplier integration remained weak. Between 2008 and 2024, the region had become increasingly dependent on the lead firm to achieve its political and economic goals. State institutions operated mainly as facilitators and less as regulators of Samsung's operations, which limited strategic coupling between the lead firm and regional assets.

Given Bac Ninh's reliance on Samsung for achieving regional growth targets and the risk of Samsung disembedding, policy recommendations include diversifying the regional economy by supporting alternative sectors, funded in part by Samsung's significant tax contributions. These measures aim to enhance long-term regional stability and reduce external dependence. Further, based on results that regional institutions mostly acted in a facilitative role during the analysed period, these institutions should take a more proactive approach in fostering local value capture. This may be achieved through mandatory policies, such as Samsung entering joint ventures with local firms, to promote more sustainable socio-economic development.

Zusammenfassung

Der Elektroniksektor steht oft im Zentrum exportorientierter Entwicklungsstrategien und bietet Regionen potenziell Zugang zu fortschrittlichen Technologien, qualifizierten Beschäftigungsmöglichkeiten und schnell wachsenden globalen Märkten. In diesem Kontext haben sich einzelne Regionen in Vietnam als wichtige Ziele für ausländische Direktinvestitionen von Elektronikkonzernen wie Samsung Electronics etabliert. Das Unternehmen verlagerte beispielsweise die Montage von Smartphones zunehmend von China nach Vietnam, bedingt durch steigende Kosten und geopolitische Verschiebungen.

Basierend auf dem GPN 1.0-Ansatz untersucht diese Arbeit die strategischen Kopplungsprozesse (*strategic coupling processes)* von Samsung Electronics mit der Region Bac Ninh in Vietnam. Der Fokus liegt dabei auf der Entwicklung dieser Prozesse seit dem Bau des ersten Smartphone-Montagewerks im Jahr 2008 bis zum Ende des Jahres 2024.

Mithilfe einer qualitativen Inhaltsanalyse nach Mayring werden 40 Dokumente untersucht. Die Kategorien werden dabei deduktiv aus GPN 1.0 abgeleitet, mit analytischem Fokus auf den drei Wertekategorien *value creation*, *value enhancement* und *value capture*. Die Ergebnisse zeigen, dass Samsungs Investitionen zwar die Beschäftigung und Infrastruktur vor Ort förderten, die Integration lokaler Zulieferer jedoch schwach blieb und die Region zunehmend von dem Unternehmen zum Erreichen ihrer wirtschaftlichen Ziele abhängig wurde. Staatliche Institutionen agierten vorwiegend als Vermittler und weniger als Regulierer der Aktivitäten von Samsung, was das *strategic coupling* mit regionalen Ressourcen einschränkte.

Angesichts der Abhängigkeit Bac Ninhs von Samsung für das regionale Wirtschaftswachstum und der Gefahr eines Disembedding-Prozesses sind gezielte politische Maßnahmen erforderlich. Der Fokus liegt auf der Diversifizierung der Wirtschaft durch Förderung alternativer Sektoren, finanziert unter anderem durch Samsungs erhebliche Steuerbeiträge. Diese Maßnahmen sollen die regionale Stabilität langfristig stärken und externe Abhängigkeiten verringern. Darüber hinaus sollten regionale und staatliche Institutionen eine proaktivere Rolle bei der Förderung der lokalen Wertschöpfung übernehmen. Dies kann durch verpflichtende Maßnahmen, wie beispielsweise Joint Ventures mit lokalen Unternehmen, erreicht werden, um eine nachhaltigere sozioökonomische Entwicklung zu fördern.

Table of Contents

List of figures

.

List of tables

List of abbreviations

ANT	Actor-network theory
ASEAN	Association of Southeast Asian Nations
EHS	Environment, health & safety
EMS	Electronics manufacturing services
EU	European Union
EV	Electric vehicle
FDI	Foreign direct investment
FTA	Free trade agreement
GCC	Global commodity chain
GDP	Gross domestic product
GDRP	Gross domestic regional product
GPN	Global production network
GSAT	Global Samsung Aptitude Test
GSO	General Statistics Office Vietnam
GVC	Global value chains
IDC	International Data Corporation
ILO	International Labour Organization
IMF	International Monetary Fund
ISO	International Organization for Standardization
IT	Information technology
IZ	Industrial zone
JIT	Just-in-time
JV	Joint venture
KRW	Korean Won
LCD	Liquid crystal display
LLM	Local labour market
MFN	Most-favored-nation status
MNC	Multinational corporation
MNE	Multinational enterprise
MoIT	Ministry of Industry and Trade Vietnam
NGO	Non-governmental organization
NIEs	Newly industrialized economies
OECD	Organization for Economic Cooperation and Development
QCA	Qualitative content analysis
R&D	Research and Development

RIS	Regional innovation systems
RoK	Republic of Korea
SDC	Samsung Display Corporation
SDV	Samsung Display Vietnam
SEC	Samsung Electronics Co., Ltd.
SEHC	Samsung Electronics Ho Chi Minh City Complex
SEV	Samsung Electronics Vietnam
SEVT	Samsung Electronics Vietnam – Thai Nguyen
SIDEC	Supporting Industry Enterprise Development Centre
SIDP	Supporting Industry Development Programme
SME	Small and medium-sized enterprise
SVMC	Samsung Vietnam Mobile R&D Center
TiVA	Trade in Value-Added
TNC	Transnational corporation
TSMC	Taiwan Semiconductor Manufacturing Company
UN	United Nations
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
VCCI	Vietnam Chamber of Commerce and Industry
VET	Vocational education and training
VND	Vietnamese Dong
WSA	World-systems analysis
WTO	World Trade Organization

1 Introduction

1.1 Background

Electronics, such as mobile phones, are indispensable products for billions of consumers globally and have shaped the way people around the world connect.

Crucially, the increasingly complex interconnectedness of the global electronics industry has made it a strategic focal point for many countries trying to integrate into this global production network, which is defined as “an organizational arrangement, comprising interconnected and non-economic actors, coordinated by a global lead firm, and producing goods and services across multiple geographical locations for worldwide markets” (Coe & Yeung, 2015, p. 32).

However, the industry has not always been as interconnected as it is today. Prior to the 1990s, electronics production activities were nationally based, in advanced economies such as the US or Japan. This was due to several reasons, for example countries protecting their domestic industries with trade barriers or geopolitical tensions during the Cold War leading to efforts to maintain national control and development (Yeung, 2022).

After the 1990s, East Asia became a major player in global electronics by first establishing a strong presence in labour-intensive manufacturing before gradually shifting towards skills- and technology-driven manufacturing (Seric & Tong, 2019). In this context, US, European and Japanese lead firms took advantage of economies of scale in countries such as South Korea or Taiwan by manufacturing electronic products there. Subsequently, the technological and production capabilities of East Asian firms grew by studying the existing production and management knowledge from lead firms such as IBM (Yeung, 2022).

Established in South Korea in 1969, Samsung Electronics is an example of an East Asian firm developing into an electronics lead firm. It initially lacked technological know-how and relied on importing key components, but the company gradually improved its production capabilities, e.g. by acquiring technologies and production facilities from other firms (Chang, 2011). As part of the larger Samsung *chaebol*, Samsung Electronics grew rapidly under the Korean

government's leadership.[1] The firm benefited from advantageous loans, government-driven export policies, and an expanding domestic market (Choi et al., 2008). Within this environment, Samsung began shaping a global production network by outsourcing to foreign production sites, especially to China since 1992, where it utilized economies of scale and the abundant supply of low-wage labour (Lee & Kim, 2004; Wong, 2006).

Throughout the 2010s, electronic lead firms further shifted their focus away from manufacturing domestically and more towards activities such as design, marketing, engineering and distribution, which are characterized as higher-value activities strongly connected to research and development (Yeung, 2022).

As a result of this, lead firms such as Samsung continually shift their assembly operations towards low-cost locations. In that context, Vietnam has become a key actor for electronics assembly in Samsung's global production network since 2008. That year, the company opened its first mobile phone assembly factory in the province of Bac Ninh, with an initial investment of 670 million USD. Within 14 years, this investment rose to more than 9.3 billion USD (Bac Ninh Industrial Zones, 2022; Vietnam Investment Review, 2023).

The electronics industry has been given much attention in GPN literature due to its characteristics of often fragmented and complex networks of production. Phillips and Henderson (2009) applied the GPN framework to the case of the Malaysian electronics industry. Further, a case study by Yang and He (2017) examined the production relocation trajectories of electronics firms between 1998 and 2009 using the GPN framework. More recently, Yeung's (2022) book describes the historical and economic factors that have driven transformation in electronics production networks, including the role of state policies and regional economic strategies. Additionally, his book is a thorough analysis of East Asian integration into electronics global production networks, with a focus on a reconceptualization of the GPN framework, known as GPN 2.0. Yeung's (2022) book has served as an inspiration for the chosen industry and region, nevertheless this thesis will apply the original GPN 1.0

[1] A South Korean 'chaebol' is defined as "a business group consisting of large companies which are owned and managed by family members or relatives in many diversified business areas" (Yoo & Lee, 1987).

framework. This thesis' interest lies in the territorial development implications of integration into global production networks introduced in GPN 1.0 (Coe & Yeung, 2015), and less on GPN 2.0's focus on the causal drivers of network configurations (Neilson et al., 2018).

Crucial within this thesis will be the *strategic coupling* concept, which is applicable to regional analysis. In line with the conceptualization of strategic coupling by Coe et al. (2004), Yeung defines it as "the intentional convergence and articulation of actors in both local/national economies and global production networks for mutual gains and benefits" (2015, p. 92). Regional economies strive to benefit from economies of scale and scope through lead firms' investment, though this is only successful if these advantages align with the needs of global production networks. When regional assets complement global production network's strategies, the coupling process promotes regional development. This process evolves as the strategic needs of these networks change rapidly, while regional economies transform more slowly.

1.2 Aim of the thesis

Multinational corporations, such as Samsung, often operate with limited integration into the local economy, sourcing suppliers and services from their own global networks. This may limit the economic benefits to the local economy (e.g. to local suppliers) and reduce effects that could otherwise stimulate broader economic development. By document analysis, this research therefore aims to investigate and understand the mechanisms of strategic coupling initiatives and how these are influenced by notions of value — promises of value creation, enhancement and capture — within the region of Bac Ninh. The research question is:

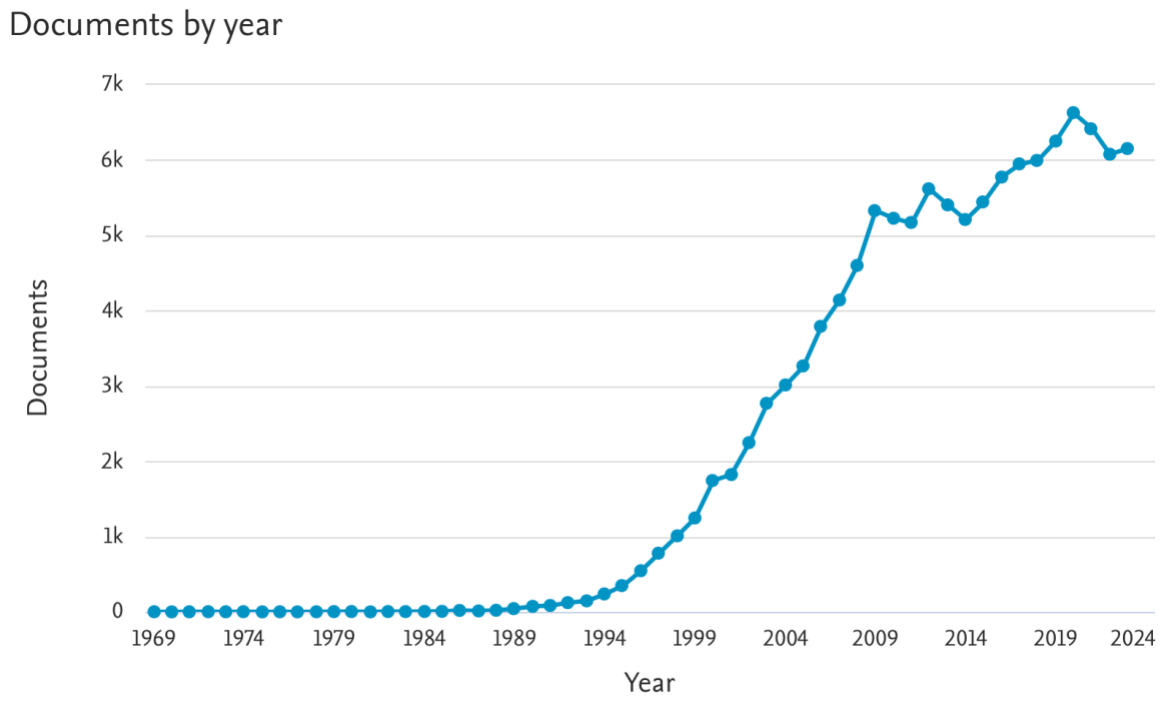
"How has strategic coupling unfolded between Samsung Electronics and the province of Bac Ninh between 2008 and 2024, specifically with a view to value creation, enhancement and capture?"

2 Literature review

Before introducing the main framework of GPN, this chapter reviews literature on the history of the organization of the world economy. One term which is often used in this context is *globalization* (Dicken, 2015), which, as Figure 1 shows, has increased in relevance in recent decades.

Figure 1

Number of Scopus documents on globalization



Note. A Scopus analysis of the number of documents which include the word 'globalization' (or 'globalisation') in title, abstract or as a keyword ("TITLE-ABS-KEY"). Copyright 2025 by Elsevier B.V.

For the year 1986 there were 19 documents found by Scopus, for 2020 that number increased to 6,622 documents. This suggests that research concerned with globalization topics increased significantly during the 1990s until 2009, when it peaked at 5,329 documents, possibly influenced by the 2008 financial crisis.

2.1 World-systems analysis

The term *globalization*, widely used contemporarily as evident from the Scopus search, is rarely used in the early works of Immanuel Wallerstein, a sociologist and economic historian

best known for developing world-systems analysis (WSA). His work focused on globality long before globalization research became popular (Derluguian & Harris, 2015).

Wallerstein introduces a theoretical framework in his 1974 book 'The Modern World System: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century' describing the historical shifts that led to the emergence of the modern capitalist economy. Wallerstein contends that Europe transitioned towards a capitalist economy because of a feudal crisis. This crisis, from 1300 to 1450, was due to a fall in agricultural production, the feudal economy reaching a plateau, and climate shifts which worsened agricultural productivity and increased epidemics. This laid the groundwork for a new European division of labour to keep the economy growing. Crucial for this was a geographical expansion, the expansion of different methods of controlling labour, as well as the establishment of robust state structures in Western European states (Wallerstein, 1974).

By the late 15th and early 16th centuries, a global economic system had developed, for the first time, linking regions beyond national boundaries. Wallerstein (1974) argues that a new world economy emerged under capitalism, distinctively different from earlier empires such as the Roman Empire. These had a single political center, which was absent in a world with independent political units ('states').

Wallerstein (1974) develops three categories, which define a region's place in the new global economic system: Core, semi-periphery and periphery. *Core regions* of northwestern Europe (e.g. England, France) thrived under the capitalist world economy of the 15th and 16th century. Politically, these states were characterized by powerful centralized governments and significant bureaucracies. This meant the local bourgeoisie was able to accumulate capital from trade. The *periphery*, especially areas such as Eastern Europe and Latin America, had no powerful central governments and exported raw materials to the core regions. The labour systems of peripheral regions were different than those in Feudal Europe in that they were intended to manufacture for the global capitalist economy, rather than solely for the local economy. Between core and peripheral regions lie the *semi-peripheral regions* (Wallerstein, 1974). These were often declining core regions, or peripheral regions aiming to enhance their

position in the global economy. Countries such as Portugal, Spain or Italy were exploited by core nations, while themselves exploiting peripheral regions.

With their work, researchers such as Hopkins and Wallerstein (1986) challenged the traditional views by economists such as Adam Smith (1776), who argued that economic development progressed locally and incrementally. However, Hopkins and Wallerstein demonstrated that economic integration and a complex global division of labour already existed prior to the 19th century. For example, their analysis of commodity chains in shipbuilding and wheat provided concrete evidence that the world economy was already in place prior to 1800.

In short, the authors characterize capitalism by a worldwide labour division and argue that "the boundaries of this division of labour are therefore appropriately defined by the effective geographical reach of the production and labour processes thereby integrated, and not by town or national boundaries" (Hopkins & Wallerstein, 1986, p. 158).

2.1.1 Discussion of world-systems analysis

The focus of WSA on the global scale and the geographical division of the world under capitalism attracted geographers seeking alternatives to state-centric and stage-based models of economic growth which were dominant in the 1970s and 1980s (Agnew, 2021). Additionally, Wallerstein and his followers emphasized that a global perspective must be historical, spanning centuries rather than just decades, even when analyzing contemporary issues (Chirot & Hall, 1982).

The major critique of world-systems analysis involves its spatial categories of core, periphery, and semi-periphery. These are often vaguely defined and overlook how these zones are historically shaped by inter-state competition and investment dynamics (Agnew, 2021). The idea that a global division of labour with distinct forms of exploitation is the basis of these zones requires continual justification, particularly given shifts in labour patterns over the past 40 years. Additionally, despite its global perspective, the theory presents development as a cycle of state-based conflicts, leaving little room for newer forms of transnational capital that bypass traditional state dominance (Agnew, 2021). Pieterse (1988) describes WSA as

exhibiting ‘system-totalitarianism’ with its rigid focus on a world order dominated by hegemonic core countries and a fixed center-periphery model. This makes the approach centrist and one-dimensional, relying on a top-down framework for analyzing global relations.

Nonetheless, Wallerstein’s approach was ambitious and influential during a time when other radical views were either retreating or facing similar limitations (Agnew, 2021). WSA’ emphasis on global exploitation by a capitalist core gained momentum across multiple fields (Ragin & Chirot, 1984). Importantly, especially in the context of this thesis, it helped lay the foundation for the global commodity chain (GCC) framework, which itself was a major catalyst for the development of the GPN framework central to this thesis (Kelly, 2013).

The following two subchapters will describe and discuss the GCC framework.

2.2 Global commodity chains

Gereffi and Korzeniewicz (1993), two development scholars reformulated WSA by emphasizing actor-centered processes within the global economy. In contrast to Hopkins and Wallerstein, their approach mostly neglects the historical context and rather puts to the forefront the beginning of a worldwide manufacturing system since the 1960s. As such, it can be seen as a more contemporary approach compared to the historically focused WSA (Bair, 2005a).

The rise of a global manufacturing system extends economic integration beyond international trade in raw materials and finished goods to a centrally coordinated, internationally dispersed production network which comprises various stages of commodity and product value chains. (Raikes et al., 2000). Within a global commodity chain, distinct processes or divisions can be depicted as boxes or nodes, connected within networks (Gereffi & Korzeniewicz 1993). Each node involves the acquiring and organizing of inputs (e.g. raw materials), labour, transportation, distribution and consumption.

According to Gereffi (1994), global commodity chains have three main elements. Firstly, the input-output structure focuses on the value added in transforming the input of raw materials into finished products and details the various stages of production. Secondly, the geographical

scope considers whether the production networks are spatially concentrated or dispersed. Thirdly, the governance structure studies the power dynamics within the commodity chain.

A critical actor in GCC analysis is the *lead firm*. By focusing on the power applied by lead firms, GCC can explain how this power is used in different segments of the chain and how this power shifts over time (Gereffi, 1999). In that context, the conceptualization of *governance structure* is central to GCC research, focusing on entry barriers and chain coordination, along with differentiating between buyer-driven and producer-driven commodity chains (Raikes et al., 2000). Producer-driven chains are dominated by large transnational lead firms that oversee production networks, particularly in capital- and technology-intensive industries such as aircraft and automobiles (Gereffi & Korzeniewicz, 1994). Buyer-driven chains, on the other hand, involve lead firms such as major retailers, marketers, and branded manufacturers leading decentralized production networks across exporting countries, often in the Global South.

In buyer-driven chains, the lead firm manages the manufacturing of labour-reliant consumer goods, such as garments or consumer electronics by outsourcing into countries which manufacture finished goods according to specifications provided by the buyers (Gereffi & Korzeniewicz, 1994). Thus, lead firms extract value through marketing, research and design activities and less through manufacturing in their own factories. In producer-driven chains, firms producing advanced goods such as automobiles generate enormous profits but simultaneously exert overwhelming control over upstream suppliers of raw materials and components, as well as control over downstream distribution and retail channels.

2.2.1 Discussion of GCC

The GCC framework has provided a solid foundation to understand global production and distribution activities. This includes the focus on the economic integration through global supply chains, while bringing attention to dynamics of power and the geographical distribution of economic activities. Importantly, it has been studied empirically across a wide range of

countries and industries, such as textiles, automobiles, and agricultural commodities (Bair, 2005b).

Nevertheless, this framework has some limitations. Several scholars have criticized GCC of distinguishing between producer- and buyer-driven chains. Raikes et al. (2000) raise the question of whether global commodity chains are entirely producer-driven or buyer-driven, and if it is not possible that there could be more than a single driver in a global commodity chain.

Further, Henderson et al. (2002) note that GCC research has often been engaged in looking at existing chains, rather than trying to attempt to reconstruct the historical development and implications of global commodity chains. They argue that this is an important exclusion, since social relations embedded within chains at a specific time can create path-dependencies and influence the future directions of chain development.

Coe and Yeung (2015) identify the limited geographical conceptualization in GCC research as a concern with regard to aspects of local and regional economic development. In their view, the GCC analysis is dominated by the national scale as a unit of analysis, rather than paying attention to processes within countries. Additionally, there has been limited attention to firm ownership patterns, as well as how companies of different origin may use diverse organizational strategies and structures (Coe & Yeung, 2015).

As a result of some of these limitations, the concept of global value chains (GVC) emerged in the early 2000s.

2.3 Global value chains

In 2005, Gereffi et al. introduced the framework of global value chains (GVC) to gain a more sophisticated understanding of shifting governance structures in global markets. Some researchers preferred the term *value* over *commodity* to avoid associations with undifferentiated goods such as crude oil and bulk agricultural products. *Value* emphasizes *value added*, thus underlining human effort and machinery in the generation of economic returns (Ponte & Sturgeon, 2014). Consequently, the focus shifted from chain *drivers* towards aspects of *inter-firm linkage*s.

The definition of the value-added chain is “the process by which technology is combined with material and labour inputs, and then processed inputs are assembled, marketed, and distributed. A single firm may consist of only one link in this process, or it may be extensively vertically integrated” (Kogut, 1985, p. 15). The crucial issues derived from this are aspects of whether to keep production in-house or outsource to other firms, and where these production processes should be situated geographically (Gereffi et al., 2005).

GVC research during the early 2000s, by scholars such as Sturgeon, Humphrey, Lee and Schmitz, uncovered forms of coordination that went beyond those of buyer-driven and producer-driven chains often found in the GCC literature. In this context, the framework of Gereffi et al. (2005) identifies a typology which describes five fundamental types of value chain governance which link suppliers to lead firms. The *markets* governance is flexible characterized by fluid relationships with low switching costs for suppliers and lead firms. The *modular* governance form is characterized by suppliers making products to the specifications set by customers. This entails minimal transaction-specific investments. Relational *value chains* are more complex, leading to mutual dependence between suppliers and buyers, often managed through trust, reputation, or proximity. *Captive value chain* governance is characterized by small suppliers relying heavily on larger buyers; thus, suppliers face high switching costs and strict control. Finally, the *hierarchical* governance form entails vertical integration where lead firms exercise top-down authority and managerial control.

With regard to the typology, the crucial question is when do market, modular, relational, captive, or vertically integrated governance forms likely emerge? To identify this, Gereffi et al. (2005) propose three key determinants of value chain governance: Transaction complexity, information codifiability, and supplier capability. Table 1 summarizes how the values of the three independent variables (evaluated as ‘low’ or ‘high’) determine the governance type of global value chains.

Table 1

Key determinants of governance in global value chains

Governance type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply-base
Market	Low	High	High
Modular	High	High	High
Relational	High	Low	High
Captive	High	High	Low
Hierarchy	High	Low	Low

Note. Table redrawn from "The governance of global value chains," by Gereffi et al., 2005, *Review of International Political Economy, 12*(1), p. 87 (https://doi.org/10.1080/09692290500049805).

The fivefold typology has established itself as a centerpiece in the conceptual toolbox of GVC governance (Gereffi, 2013). Much of its popularity lies in demonstrating how these five forms of governance change as an industry evolves and matures. Further, it has the ability to showcase how, within specific industries, governance patterns can vary from one level of the chain to another.

Gereffi et al. (2005) also distinguish asymmetry in bargaining power at the firm level. In this view, the lead firms have control over suppliers. However, such a narrow perspective lacks a greater understanding of power and governance structures in global value chains. Dallas et al. (2019) therefore make an appeal for a much wider concept of power than that captured by lead firms and state actors. Such varied forms of power explain the governance dynamics shaping participation, value distribution, and inclusion in the value chains. Ponte et al. (2019) distinguish between four forms of power: bargaining, demonstrative, institutional, and constitutive. Bargaining power is direct and dyadic, such as lead firms controlling suppliers through contracts (Ponte et al., 2019). Demonstrative power operates indirectly, where firms set examples that others may follow. Institutional power is collective and enforced by rules such as regulations, while constitutive power is diffused through informal norms.

2.3.1 Discussion of GVC

The five-fold typology proposed by Gereffi et al. (2005) enhances the buyer-driven and producer-driven model by offering a more nuanced understanding of power dynamics by analysing how emerging patterns in international trade, production, and employment influence the potential for development and competitiveness, with reference to core concepts such as 'governance' and 'upgrading' (Fernandez & Gereffi, 2019). By spanning far beyond academia, GVC has become a powerful paradigm for governments and international organizations, including the World Bank and ILO (Ravenhill, 2014). Critics argue that policy recommendations in the GVC-influenced reports by such institutions largely adhere to the Washington Consensus, emphasizing trade and investment liberalization while offering minimal focus on complementary policies for upgrading (Ravenhill, 2014). Criticism also centres around the downplaying of the role of states and social actors, and how GVC relies on rigid typologies that fail to capture complex production-consumption relationships, particularly for non-traditional commodity flows (Fridell & Walker, 2019). More recent research, however, presents a more interventionist perspective, highlighting the active role the state has in mediating GVCs to protect national interests, leading to more nuanced theorizing in GVC literature (De Marchi & Alford 2022). The next chapter will introduce the farmwork of global production networks (GPN). While it has similarities to GVC, such as the focus on lead firms, GPN addresses some of the limitations of previous approaches, for example by including non-firm actors.

3 Global production networks

Research on world-systems, GCC and early GVC studies were major precursors for the formulation of GPN (Coe & Yeung, 2015). In a similar way to the move from GCC towards GVC research, GPN development was driven by the need for a more complex view of power and the addition of multiple scales of analysis which go beyond just the national and global scale.

3.1 Global production networks 1.0

GPN was initially informed by two broad theoretical currents within the social sciences that had gained ground by the early 2000s. The first of these relevant theoretical approaches is actor-network theory (ANT). It sees entities as constituted through their relations within networks. Though GPN does not adopt ANT in its entirety, such as providing agency to non-human objects or dispensing with the notions of structural power, it cites important lessons from the theory, such as tracing networks and sensitivity to agency and complex local-global intersections (Coe & Yeung, 2015).

The second source of insights came from approaches that emphasized *varieties of capitalism*, *national business systems*, or *national systems of innovation* (Coe & Yeung, 2015). These approaches underline how different societies with different cultures, institutions and rules create specific production and welfare regimes influencing firms. Since these perspectives run the risk of producing simplistic and static national typologies while ignoring intranational variations, GPN adds an awareness that institutional and territorial contexts profoundly condition actors in global production networks. GPN emphasizes that these contexts are not just background details but are pivotal in shaping the way firms act. Thus, GPN seeks to balance the transformative power of global production networks against the power of national conditions in which they operate, through their mutual transformation of firms and regions (Coe & Yeung, 2015).

The first major theoretical articulations regarding the GPN approach were introduced by Dicken et al. in 2001. The authors identify several issues, which they argue must be taken into consideration to understand the global economy and which led to the use of a network methodology. Firstly, analytical categories carry with them discursive power, e.g. a globalization rhetoric is often used to legitimize strategies that naturalize globalization processes and embed specific power relations (Dicken et al., 2001). Secondly, a full understanding the global economy requires considering multiple dimensions: Economic, political, cultural, and social. This is crucial, since previous work often prioritized specific

agents such as firms, while neglecting others such as states and labour organizations, thus oversimplifying the global economy (Baum & Dutton, 1996).

Considering this, Dicken et al. (2001) put forth the network methodology as a possible framework to address these issues. In contrast to studies focused on individual actors, firms, or nations, their methodology aims to identify and analyze networks of actors, their interactions, and the kinds of structural outcomes that result from these interactions. The authors critically look through the previously described GCC framework and ANT. While both have limitations, they are useful in making clearer how network analysis can help further the understanding of the global economy (Dicken et al., 2001). GCC deals with the value addition at each point in the chain and the power dynamics among numerous actors in the chain. Though valuable, the authors consider GCC as often lacking a broader consideration of relational and spatial dynamics, as well as being too concerned with governance dimensions. Contrary to GCC, ANT identifies networks as hybrid collectives consisting of both humans and non-humans. It emphasizes that agency and social relations should not exclude non-human elements, such as laws or policies, or fall into technological determinism. ANT provides a definition of a network, which is more nuanced and centered on actions and practices rather than structures (Dicken et al., 2001). The global view through an ANT lens moves away from a dualism of global–local, where one scale overshadows the other, towards a more integrated view in which networks are interconnected and evolving, with both global and local foci mixed. This, as Latour (1996) writes, allows researchers to “dissolve the micro-macro distinction that has plagued social theory from inception” (p. 371).

Both GCCs and ANT advance a network methodology for understanding the global economy, but as this section aimed to show, do have some limitations. The structural-relational view proposed by Dicken et al. (2001) involves identifying network actors, their interactions, and the structural outcomes of these relationships. Although it does not provide a strict framework or a detailed research agenda, it shows how analyzing global economic structures through network formations can guide empirical research. The GPN framework introduced by

Henderson et al. (2002) builds upon some of the arguments for adopting a network methodology described in Dicken et al. (2001).

3.1.1 Motivation for a new framework

There are several reasons why Henderson et al. (2002) aimed to propose a new analytical framework. Firstly, the authors argued that firms had been underexplored despite their critical role in economic development, especially in relation to transnational corporations (TNCs) and their organizational dynamics. Secondly, most studies on firms at the time focused on TNCs and relied on secondary data, often ignoring the evolving dynamics within TNC's subsidiaries and domestic firms. Additionally, research on firms in developing countries was limited. Finally, Henderson et al. (2002) argue that state-centric approaches in social sciences were inadequate for understanding global economic processes. For example, world-systems analysis, they argued, had not generated the meso- and micro-level categories needed in the research at the time.

In short, to effectively address the possibilities for economic development and prosperity, they argue one must examine global flows of capital, knowledge, labour and how these transform places (Henderson et al., 2002). This includes investigating what firms do, where they operate, why they choose those locations, how they are approved to operate, and how they organize their activities across various geographic scales. With these aspects in mind the authors sketch out an analytical framework — their concept of the global production network. The next subchapter will briefly outline Henderson et al.'s (2002) arguments for using the specific terms of *global, production and network* and describe some further differences to the GCC and GVC frameworks.

3.2 Understanding *global, production* and *network* in GPN

While it is now common to use the term *global* for phenomena once described as *international* or *transnational*, the authors chose the term *global* for its analytical precision. The terms *international* and *transnational* are rooted in state-centric perspectives that capture cross-

border activities but fail to convey how non-local processes impact and reshape specific places, and vice versa (Henderson et al., 2002). This distinction is essential for understanding the dynamic global-local relationships necessary for analyzing globalization and its implications on development.

With regard to *network* and *production* the argument is made that a network discourse is more inclusive, empirically accurate, and analytically productive in comparison with terms such as *chain* and *commodity* (Henderson et al., 2002). By switching to a discourse of production rather than one of commodities, the center shifts to the social processes involved — not only in services and the manufacturing of goods, but also in the reproduction of knowledge, capital, and labour power. Therefore, the GPN framework aims to focus on the social conditions under which commodities are produced and consumed, avoiding the constant risk of seeing commodities as dehumanized building blocks from which other commodities are created.

A chain metaphor suggests explicit activities and processes ending in a final commodity (Henderson et al., 2002). However, materials, semi-finished goods, design, manufacture and services are often organized as complex, dynamic arrangements in vertical, horizontal and diagonal ways. In addition, a chain metaphor diminishes the supposed autonomy of firms, despite this autonomy being at the center of industrial upgrading possibilities and, more generally, economic development.

Thus, adopting a network discourse can bring considerable benefits (Henderson et al., 2002). If production includes both intermediate and final markets, and power and knowledge dynamics are seen as multi-directional and non-deterministic, then the GPN framework offers a broader analytical scope. It can capture producer-consumer relations with more complexity and geographical variation than the GCC or GVC approach.

Several aspects further highlight differences between GPN and GCC (Henderson et al., 2002). GPN recognizes the relative autonomy of domestic firms, governments, and other actors, such as trade unions, acknowledging that their actions can have an impact on economic and social outcomes of the networks in specific regions. Additionally, input-output structures within networks are important as this is where value is created and major differences in working

conditions get established. Thus, research on intra- and inter-firm networks must closely examine these structures and their impacts. Additionally, gaining knowledge of how production networks shape and are shaped by the economic, social, and political landscape of their locations is crucial for analyzing local development possibilities.

These aspects underscore what the GPN framework of Henderson et al. (2002) understands as *mapping*, which is the process of identifying, analyzing, and visually representing the various actors, processes, and geographical locations concerned with the production and distribution of goods and services in a global network. This will be done in Chapter 5.

Methodologically, GPN investigates several issues (Henderson et al., 2002). It emphasizes the global and regional organization of the firm network connected to R&D, design, production, and marketing. Further, it underscores the distribution and evolution of corporate power within these networks. Another important methodological aspect is the role of labour and the value transfer processes. Additionally, the framework directs attention to the impact of institutions, such as government agencies, trade unions, employer associations, and NGOs, on firm strategies in different locations is. Finally, GPN focuses on the impact these factors have on technological upgrading, value addition and economic prosperity for firms and societies (Henderson et al., 2002).

3.3 Conceptual categories

The GPN framework categorizes its analysis into three core areas: value, power, and embeddedness. This section will describe each of these categories in detail.

Value

Value refers to “both Marxian notions of surplus value and more orthodox ones associated with economic rent” (Henderson et al., 2002, p. 448). Three notions of value are crucial: value creation, value enhancement and value capture.

Firstly, *value creation* deals with issues surrounding the circumstances of how labour power is transformed into actual labour through the labour process (Henderson et al., 2002). Employment, competencies, working conditions, and production technologies are core issues.

Importantly, GPN is interested in the conditions under which these issues are reproduced, thereby linking these aspects to broader social and institutional contexts.

Additionally, value creation is interested in matters of the various rent generating possibilities. These would include rents from an uneven access to key process or product technologies, organizational and managerial skills (e.g. *just-in-time* production), inter-firm relationships for managing linkages of production or forming strategic alliances, as well as brand recognition in key markets (Henderson et al., 2002).

Secondly, the possibilities of *value enhancement* include the extent and degree of technology transfer within and external to the production network (Henderson et al., 2002). Further, it analyzes the degree to which lead firms would cooperate with suppliers and their subcontractors to improve product quality and increase the level of technological sophistication. In that context, it raises the question whether this increases skill demands in labour processes over time. Further, the issue of whether local firms start to generate their own organizational, relational, and brand rents is part of the value enhancement process (Henderson et al., 2002). Within these value enhancement possibilities, the influences of national institutions — government agencies, trade unions, and employer associations — may ultimately be a deciding factor. Thirdly, *value capture* potential differs from value creation or value enhancement as value may be created in a specific location, yet this does not guarantee this value is captured in the interest of those localities.

There are several issues surrounding value capture (Henderson et al., 2002). Firstly, *government policy* reveals the character of property rights and laws governing ownership structures, as well as profit repatriation possibilities. The *ownership of firms* is concerned with whether firms are foreign owned, domestically owned, or take the form of joint ventures and determines how value capture takes place. Finally, the basis of *corporate governance* — stakeholder principles or shareholder dominance — determines value retention and to what extent value created in a location is used for the good of the community.

Power

Power is a category essential for the analysis of value enhancement and value capture. Important here is an understanding of power sources in global production networks and how such power is exerted. Henderson et al. (2002) introduce power divided into three concepts.

Firstly, *corporate power* refers to the way in which a lead firm within a global production network exercises influence over decisions and resource distribution in a way that benefits itself. While such asymmetrical distribution of power in production networks exists, smaller firms are often able to autonomously initiate and carry out their own upgrading strategies. Additionally, such firms can join others to enhance their status within the network, e.g. through clustering.

Secondly*, institutional power* refers to the power of national and local governments, e.g. international inter-state agencies or the UN agencies, such as the ILO (Henderson et al., 2002). International inter-state agencies, such as the EU, can exert significant but variable influence, while institutions like the IMF and World Bank shape companies indirectly through national policies. In contrast, organizations such as the UN often have minimal direct impact, serving primarily advisory and moral roles.

Thirdly, *collective power* is a form of power involving collective agents aiming to mostly influence companies and governments (Henderson et al., 2002). Trade unions, employer associations, economic interest groups (e.g. small business organizations), as well as NGOs focused on human rights or environmental issues are examples of such collective agents. These organizations can operate locally, nationally, or internationally and typically exercise countervailing power either directly on firms within networks or indirectly on governments and international agencies.

Embeddedness

The concept of embeddedness has a history preceding GPN. Karl Polanyi was one of the first scholars to deal with the issue of embeddedness. The crucial observation he makes is the contrast of a market economy with an economy based on reciprocity and redistribution:

"Instead of economy being *embedded* in social relations, social relations are embedded in the economic system" (Polanyi, 1957, p. 57).

Whereas Polanyi used the term *embeddedness* to refer to an abstract relation between economies and societies, Mark Granovetter, a few decades later, focused on actors and networks when elaborating the concept of embeddedness within the context of continuing social relationships. Granovetter (1985) argues that actors, such as individuals or organizations, engage within networks of relationships, therefore never acting in isolation. In his view, the degree of embeddedness is decided by the relationship's stability and longevity. These are just two of the many scholars working within social theory having dealt with questions revolving around how social relations affect behaviors and institutions. GPN builds upon these contributions , since global production networks connect firms not only functionally and territorially but also within social and spatial contexts that influence their strategies and values (Henderson et al., 2002). All firms, whether TNCs or smaller businesses, remain, to a certain extent, embedded in native institutional and cultural environments. Specific forms of capitalism, or a legacy of state socialism may continue to influence firms through legal frameworks and the nature of state policy. Three forms of embeddedness are relevant in this context: Territorial, network and societal embeddedness.[2]

Firstly, *territorial embeddedness* refers to how global production networks do more than just establish themselves in specific locations; they may become embedded there by absorbing and sometimes being constrained by local economic activities and social dynamics (Henderson et al., 2002). For instance, global production networks of lead firms may leverage existing clusters of SMEs, predating the firms' subcontracting or subsidiary activities. Additionally, the presence of lead firms can create new local or regional networks of economic and social relations, involving existing firms and attracting new ones. This embeddedness is key to regional economic growth and capturing global opportunities (Amin et al., 1994; Harrison, 1992). Furthermore, national and local government policies, e.g. training

[2] The concept of *societal embeddedness* is not mentioned in Henderson et al. (2002) but rather added by Hess (2004).

programmes and tax advantages, can embed parts of the global production network in specific cities or regions, supporting new nodes (Henderson et al., 2002). However, the positive effects of embeddedness are not guaranteed over time; for example, the benefits may dissipate if a lead firm exits a region (Henderson et al., 2002). This *disembedding* process can often appear simultaneously to embedding processes (Pike et al., 2016).

From a developmental viewpoint, the form of *territorial embeddedness* and the extent of commitment to a specific location by a firm in a global production network are important for the creation, enhancement, and capture of value (Henderson et al., 2002). *Network embeddedness* refers to the connections among network members, irrespective of their location (Henderson et al., 2002). The architecture, durability, and stability of these formal and informal relationships determine individual network embeddedness and the shape and evolution of a global production network. This reaches beyond merely business agents, to the broader institutional networks that involve governments and NGOs. The degree of network embeddedness is the outcome of a trust building process between agents of a network (Henderson et al., 2002). Even in intra-firm networks governed by ownership and control, such as joint ventures, trust remains essential (Yeung, 1998). Societal *embeddedness* intends to underscore that the cultural, institutional, and historical roots of an economic actor impact the actions taken by that actor (Hess, 2004). This view aligns with the varieties of capitalism literature, which, as Peck and Theodore (2007) suggest, economic geography can both learn from and contribute to. For instance, when a firm invests abroad, it carries along social and cultural views developed and fostered in the home country. This may impact its attitude towards aspects such as labour-management relations, working conditions, the way of organizing supply networks, and finally, the role governments of host countries play in shaping business conditions (Coe & Yeung, 2015).

It is important to consider that all three dimensions are closely connected to each other. As global production networks expand geographically and become more complex, the nature of their embeddedness also becomes increasingly complex (Coe et al., 2008). In comparison to GCC and GVC, the GPN framework distinguishes itself from these frameworks by

incorporating the concept of embeddedness and thus more elaborately emphasizing socio-cultural and institutional contexts in economic activities (Henderson et al., 2002).

3.4 Conceptual dimensions

The above outlined conceptual categories are articulated through the four conceptual dimensions of firms, sectors, networks and institutions (Henderson et al., 2002). These dimensions will be described in this subchapter.

Firms

Every firm, even within the same industry, differs in strategic priorities and labour and supplier relations (Henderson et al., 2002). Despite similarities in the way firms create value and exercise power, significant firm-specific differences in areas such as investment decisions and supplier relationships may exist. These arise through differences in ownership structure, managerial choices, or simply the culture and values of the firm itself. These differences influence how lead firms build their global production networks. For suppliers, this has implications for how they participate in lead firm's global production networks.

Sectors

Firms in the same sector work with comparable technologies and products and market constraints; they therefore tend to develop similar GPN structures (Henderson et al., 2002). Firms in the same sector often use a common *language* and communication structure. Additionally, they often interact with each other through purpose-built organizations (e.g. industrial interest groups).

Networks

Governance issues tend to emerge within different networks, where the use and mobilization of power can vary due to a combination of firm-specific and sector-specific factors (Henderson et al., 2002). As a result, significant differences in governance structures across various contexts can be expected. This diversity in governance may lead to variation in how much autonomy secondary firms within a given network can exercise. This may determine their

ability to engage in activities of higher value-added, thus having favorable outcomes for economic development.

Institutions

GPNs are influenced by institutional arrangements at both the local and global levels, which can be important arrangements in terms of local value generation, enhancement, and capture (Henderson et al., 2002). These arrangements can be crucial in setting labour relations, working conditions and wage rates. Institutions can therefore reinforce or weaken GPNs with regard to how they can bring about long-term economic and social development.

3.5 Strategic coupling

This section will highlight in detail what is understood by strategic coupling and how it fits into the overall GPN framework. The concept of strategic coupling was first introduced in a 2004 paper, written by the same group of researchers as Henderson et al. (2002), and became a highly influential publication.[3] By drawing on the perspective of GPN, new regionalism, GCC and GVC literatures, the paper focuses on the dynamic strategic coupling processes between global production networks and regional assets that takes place through various kinds of institutional activity across different scales. In doing so, it argues that regional development becomes premised on the capability of such strategic coupling to drive value creation, enhancement and capture (Coe et al., 2004).

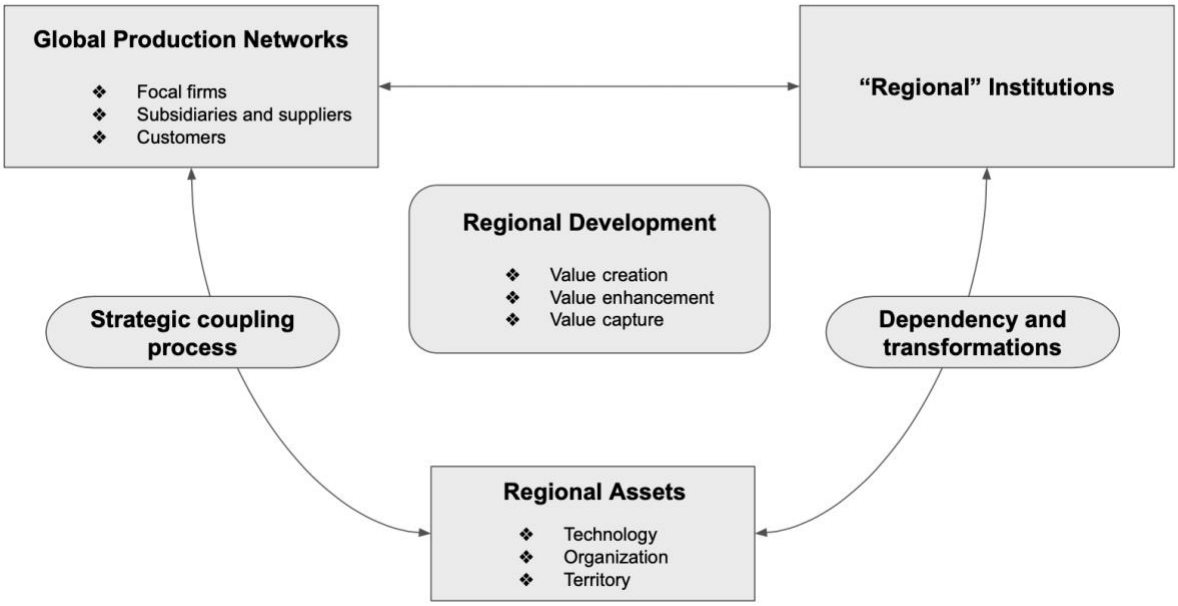
In the paper, regional development is conceptualized as "a dynamic outcome of the complex interaction between territorialized relational networks and global production networks within the context of changing regional governance structures" (Coe et al., 2004, p. 469). Within this context, the authors specify how localized growth factors interact with the strategic needs of trans-local actors and how this affects regional development. According to the authors, it is these interactive effects, and not inherent regional advantages or fixed globalization processes, which lead to regional development. On the other hand, regional development becomes highly contingent and unpredictable, even though certain aspects remain path

[3] This group been called the 'Manchester School' of economic geographers by Bathelt (2006).

dependent. In the authors' view, this does not diminish the importance of regional institutions. Rathe, complementarity and coupling effects can be strengthened and leveraged by regional institutions. The term *regional* is applied with caution to underline the fact that regional development is determined not only by local institutions, but also by a range of more general, extra-local institutions that operate at higher spatial scales (e.g. national or supra-national). In short, regional development at any one time depends on the co-presence of economies of scale and scope within regions, as well as the right configurations of regional institutions to anchor global production networks and to unlock potential for regional value creation, enhancement and capture (Coe et al., 2004).

Figure 2

Regional development and global production networks: A framework



Note. Figure redrawn from "'Globalizing' Regional Development: A Global Production Networks Perspective," by Coe et al., 2004, *Transactions of the Institute of British Geographers, 29*(4), p. 470 (https://doi.org/10.1111/j.0020-2754.2004.00142.x).

Coe et al.'s (2004) analytical framework assumes that, while necessary, endogenous factors are not enough to produce regional growth in an increasingly competitive global environment. For a region to attain development, it must be able to exploit economies of scale and scope.

This argumentation is derived from Storper's (1997) interrelated *holy trinity* of technology, organization, and territory.[4]

The term *regional assets* (see Figure 2) refers to the necessities needed for regional development (Coe et al., 2004). Such assets can generate two sorts of economies. Firstly, economies of scale can be realized through the agglomeration of localized expertise, skills, and knowledge. Secondly, economies of scope arise when regions profit from the more intangible advantages associated with learning and collaborative environments. These *spillovers* allow the development and location of a broad variety of high value-added activities due to the support provided by an environment in which learning and collaboration facilitate a wide range of production and entrepreneurial ventures (Coe et al., 2004).

Table 2

Local and non-local dimensions of regional development

Dimensions	*Local manifestations*	*Non-local forms*
Firms	• Indigenous SMEs • Industrial clusters • Intra-regional markets • Venture capitalists	• Global corporations • Entrepreneurial subsidiaries • Distant global markets • Decentralized business and financial networks • Global production networks
Labour	• Skilled and unskilled workers • Permanent migrants	• Skilled experts and technologists • Transient migrants • Transnational business elites
Technology	• Spillover effects • Tacit knowledge • Infrastructure and assets	• Global standards and practices • Intra-firm R&D activities • Technological licensing • Strategic alliances
Institutions	• Conventions and norms • Growth coalitions • Local authorities • Development agencies	• Labour and trade unions • Business associations • National agencies and authorities • Inter-institutional alliances • Supranational and international organizations

Note. Table redrawn from "Globalizing' Regional Development: A Global Production Networks Perspective," by Coe et al., 2004, *Transactions of the Institute of British Geographers, 29*(4), p. 471 (https://doi.org/10.1111/j.0020-2754.2004.00142.x).

[4] According to Storper (1997) technology, organization, and territory form the *holy trinity* in an economic system. Using this term, he underlines his idea that these three are not just individual factors but deeply interrelated and contributing fundamentally together to the shaping of regional economic dynamics.

The authors argue that regional economies of scale and scope benefit regional development only when regional economies can complement trans-local actors' strategic needs in global production networks. Once there is a complementary effect between regions and global production networks, a process of coupling follows whereby regional advantages engage global network actors' strategic needs (see Figure 2). Regional development relies on this coupling, a process which evolves over time in response to the quickly shifting strategic needs of global production networks and the slower transformations of regional economies (Coe et al., 2004; Dicken, 2015).

An important characterization of global production networks is how these often blur traditional organizational boundaries through various relationships, connecting regional and national economies and influencing their development (Henderson et al., 2002). The specific nature and structure of firm-centered production networks are shaped by the socio-political contexts in which they operate. This creates complexity, as these contexts are usually territorially specific, but the networks themselves operate beyond these boundaries. Nevertheless, they are influenced by regulatory barriers and local socio-cultural conditions, which leads to "discontinuously territorial" structures (Henderson et al., 2002, p. 446). A key aspect of these networks is the differing territorial embeddedness of local actors, such as labour and the state, and non-local actors such as TNCs and financial capital (Coe et al., 2004). These differences influence regional development, as the distribution of value and power depends on the extent of embeddedness (Hudson, 2001). Understanding these differences is important for analyzing how regions engage with global production networks and shape their development outcomes (Henderson et al., 2002).

Labour is a crucial local actor in regional development, and its organizational strength and flexibility is a key aspect aligning a region with strategic needs of focal firms in global production networks (Henderson et al., 2002). Labour has internationalized through inter-institutional alliances and international organizations, nonetheless it remains largely confined to local labour markets. The spatial immobility of labour means lead firms in global production networks can gain economies of scale and scope more effectively (Castree et al., 2003). It is

at the local and regional scales that labour comes into contact most critically with the strategic needs of other key actors in global production networks. Such interactions are often advantageous for trans-local actors embedded within these networks because these global actors can undertake 'spatial switching' far more readily than workers can (Massey, 1995).

Likewise, the state and development agencies have a strong local embeddedness within specific regions (Coe et al., 2004). The relocation of political and economic authority from the national state towards local and regional institutions has boosted regional inequalities. This is due to differences in state's institutional configurations shaping the way regions plug into global production networks.

This situational power of state and labour, as manifested in local and regional institutions, is instrumental for understanding the distributional dynamics of regional development (Coe et al., 2004). For example, in regions with highly embedded local labour markets, lead firms in global production networks have been able to capture economies of scale via specialized systems of production, e.g. by using technology-specific production systems. On the other hand, a variety of industries in regions with flexible labour markets benefit from economies of scope through *untraded interdependencies*.[5] Further, regulation of labour and its organizations by state institutions is crucial. These two aspects may raise labour skills and labour market flexibility in one region; in another region, an adversarial relation between state and labour may lower that region's attractiveness to lead firms (Coe et al., 2004).

Critically, the strategic needs of lead firms do not always align with regional advantages as global integration of activities in these networks can sometimes lead to greater external control over regional economies (Coe et al., 2004). Connected to this external control are the varied organizational strategies lead firms pursue, e.g. to achieve economies of scale and scope. Economies of scale in global production networks are achieved by concentrating functions like R&D, sourcing, and marketing in specific locations. Fewer firms performing these functions lead to greater specialization and efficiency. On the other hand, economies of scope arise

[5] Untraded interdependencies, according to Storper (1997) lie outside the economic value chain and occur through knowledge-exchanging relationships that do not have formal give-and-take mechanisms.

from utilizing different firms across different activities, such as R&D and sourcing. This variety fosters learning and knowledge exchange not possible with a single firm (Coe et al., 2004). As Nohria and Ghoshal (1997) highlight, global corporations increasingly leverage the unique advantages of different subsidiaries and supplier networks to enhance their competitiveness.

3.5.1 Regional development and value dimensions

The question arises how this complex organization of various actors in global production networks connects to regional development? In the conceptualization of Coe et al. (2004) this relationship runs through the creation, enhancement, and capture of value.

During the process of globalization, local and non-local actors in global production networks can create and capture various forms of economic rent, for example technological rent (Coe et al., 2004). Some of these specific forms excel in certain regions, due to a particular configuration of labour, capital, and state institutions. A region need not capture all types of rent, as specialization can drive economies of scale. For example, in a competitive labour market with active venture capital and supportive institutions, value creation in emerging industries can thrive due to the need for rapid knowledge diffusion, high-risk finance, and institutional stability. By contrast, a region with unorganized but abundant labour and a weak institutional structure might create value by conducting labour intensive work for lead firms. Essentially, with different sets of assets, regions play different roles and create value in various ways within global production networks (Coe et al., 2004).

Value is manifested in different forms across regions in a global network (Coe et al., 2004). Value created within a region having a “cooperative atmosphere” may first be identified as relational rent The term cooperative atmosphere in Coe et al. (2004) is in the style of Alfred Marshall, who argued that geographically concentrated firms derive advantages from cooperation, while still competing with each other (1920).

As value transfers through the global production network, it can convert into other forms, e.g. technological or brand-name rents (Coe et al., 2004). Therefore, regional development cannot be reduced to simply tracing market values but requires an understanding of the different

forms of rent that these values embody. Importantly, the integration of a region into global production networks does not in itself guarantee positive developmental outcomes. This is because the value created by local actors might not maximize the full economic potential of a region. Moreover, value added within the region may be difficult to capture by local actors (Thrift & Amin, 1992). Essential for regional development is value not only created but also captured locally (Coe et al., 2004). For example, a region can have an ample supply of labour, but much of the value from this labour can get transferred out of the region due to profit repatriation and the eventual relocation of production networks.

Regional assets can only become advantageous for regional development if they align with the strategic needs of global production networks (Coe et al., 2004). This alignment requires the presence of appropriate institutional structures that both promote regional strengths and enhance the region's integration into global production networks. These institutions include not only those that are regionally specific but also local branches of national or supranational bodies, as well as external institutions that influence regional activities without having a direct presence (e.g. national tax authorities). These regional institutions are essential as they serve as the link that connects global capital to regional potential. With regard to such institutional structure, the three value dimensions first presented in Chapter 3.3 and initially introduced by Henderson et al. (2002) are crucial for regional development (Coe et al., 2004).

Firstly, value creation by regional institutions works through the attraction of activities such as workforce training, promotion of startups or facilitation of venture capital (Coe et al., 2004). While it can be argued that this process overly ties the region to specific firms or networks, the success of this coupling depends on the ability of regions to enhance and capture value. Without this coupling, regional development is uncertain, as no value will be created, enhanced, or captured.

The second dimension revolves around the ability of regional institutions to enhance value, comprising technology and knowledge transfer as well as industrial upgrading (Coe et al., 2004). This is driven in large part by government agencies, trade unions, and employer associations. Regional institutions can facilitate value enhancement activities of lead firms by

investing in the necessary infrastructure and human resources. For instance, a stable power supply or the availability of skilled engineers may be enough for lead firms to transfer core technologies and expertise to the regions. The sophisticated local supplier networks are then developed with emphasis on enhancing the value activities of the lead firms through the *reverse* transfer of local knowledge and experience. Summarized, regional assets do not always support the value enhancement of lead firms in global production networks. What is important is the appropriateness and complementary nature of these assets, not just that they exist.

Lastly, while creating and enhancing value in regions is important, capturing that value for regional benefit presents a distinct challenge (Coe et al., 2004). Power and control are driving factors in the analysis of value capture and distributional aspects of regional development. The concept of *power*, which will be elaborated upon in a later chapter, is crucial in analyzing value capture and the distributional dimensions of regional development.

Development policies, ownership structures, and corporate governance are all related to regional institutional negotiating power with, and control over, lead firms in global production networks. Their ability to operate across borders and gather information globally often puts them in a better bargaining position over regional institutions.

Regarding power and control, regional development often also has a non-local origin, as the power exercised in a given region might have its source somewhere outside the region yet still impact that region. In other words, power relations at the local scale depend on developments elsewhere and on the wider sets of relationships within which they are positioned (Allen, 2003; Coe et al. 2004).

Regional institutions can use their unique assets to bargain with lead firms and ensure that power relations do not solely go the firm's way (Coe et al. 2004). In instances where regional assets are very closely aligned to the strategic needs of lead firms, their bargaining position strengthens, making the institutions more influential. For example, lead firms that have a greater need to cut costs are more likely to invest in regions with both lower production costs and cooperative labour relations. Inward investment then has the potential to lead to an

upgrading of the local workforce, contributing to regional development through the capture of skill and technological rents (Coe et al., 2004).

Finally, the collective cooperation of labour and business institutions in the supply of region-specific assets to global firms largely enhances the likelihood of value capture in a region (Coe et al., 2004). Simply put, the value capture ability at the regional level is determined by a dynamic bargaining process between regional institutions and lead firms. With regard to this, only the region-specific assets that align with the strategic needs of the global lead firms are relevant in this bargaining process (Coe et al., 2004).

3.5.2 Significance of the reconceptualization

The rethinking of regional development from a global production network complemented existing GPN frameworks in two ways (Coe et al., 2004). Firstly, it put forward a dynamic view of regional development as a *moving target*. While the framework acknowledges the influence of path dependency on the development of regional assets, it still allows regions to break free from *lock-ins*. One possibility for such a breakout is when regions face economic crises originating outside their region. For example, a region may have a relative advantage in a global industry, such as electronics; however, even with a path dependency based on this advantage, development challenges could still be significant if the industry faces a global crisis. Such crises may reinforce the need for new development trajectories in a region. In cases of success, these paths may break existing path dependencies in the region (Coe et al., 2004). The framework thus offers a more dynamic concept of regional development with less emphasis on endogenous structures that might create barriers to change and transformation. Further, the framework is explicitly comparative; that is, it analyzes how interactive complementarity and coupling effects are present in one region but absent in others (Coe et al., 2004). The comparative approach gives much clearer views of the mechanisms by which some regions achieve developmental momentum while others fail to capitalize.

3.6 Summary, criticism and limitations of the GPN framework

Henderson et al. (2002) established the foundational theoretical framework for what is now termed GPN 1.0, centered on three key analytical concepts — value, power, and embeddedness. Coe et al. (2004) expanded the framework, arguing that regional development hinges on the ability of regions to stimulate value creation, enhancement, and capture through effective *strategic coupling* with global production networks.

GPN has strongly influenced the views on how the global economy operates by shifting the focus from traditional national boundaries towards a more dynamic view of economic processes, where value dimensions and power relations are shaped by global flows of capital and labour. Nevertheless, there are certain criticisms, weak points as well as limits of what is possible within this framework. Some of the criticism centers on the difficulty in empirically validating the GPN framework other than via qualitative case studies (Sunley, 2008). Additionally, the understanding of electronics production conceptualized and analyzed here ends with consumption, excluding often critical post-consumption activities (Pickren, 2015). Post-consumption processes are ongoing, multi-directional, and governed by various actors across different scales, where *waste* can be transformed into *resources* through complex regimes of value. This is a perspective which broadens the understanding of the 'economic' to include material transformation beyond just production, exchange, and consumption. However, this thesis focuses mostly on production and to a certain extent on consumption, leaving post-consumption out of the analysis.

Critics have often also challenged the definition of *value* in the GPN literature, arguing its definition is too narrow and questioning the assumptions that there is an objective way to measure value (McGrath, 2018). Additionally, Bryson and Vanchan (2020) highlight that GPN does not conceptualize a broader understanding of value, e.g. by incorporating environmental, social and non-monetary value dimensions. Lastly, GPN 1.0 and its firm-centric framework rarely incorporates geopolitical dimensions (Coe & Yeung, 2019). However, these dimensions are becoming increasingly relevant, especially at the junctures of political disruptions on a global scale. The electronics industry is especially affected in the geopolitical landscape

following the COVID-19 pandemic, where e.g. the US under the Biden administration has tried to limit the rise of Chinese semiconductor manufacturing (Wong et al., 2024). Ultimately, GPN 1.0 conceptualization is still, according to Coe and Yeung (2015), in a “nascent stage” (p. 21). Nevertheless, and despite some underdeveloped areas and limitations, GPN 1.0 has evidently strong analytical strength (Coe et al., 2008). Regardless of whether research starts with a firm or a non-firm entity, whether it’s deeply embedded in a single production network or intersects multiple networks, the broad nature of this relational framework enables the researcher to ‘follow the network’. This approach reveals the intricate connections and dependencies among the diverse social actors that shape global production networks and impact processes of value creation, enhancement, and capture.

3.7 Global production networks 2.0

Before extensively describing the case study conducted in this thesis, it is important to briefly discuss Coe and Yeung’s reconceptualization of the original GPN 1.0 framework in the mid-2010s. GPN 2.0 identifies specific causal mechanisms that create and transform global production networks. Coe and Yeung (2015) aimed to develop GPN 2.0 as a theory which differs from GPN 1.0 by outlining four explanatory variables and four actor-specific strategies acting as dependent variables.

The four explanatory variables are: (1) Optimizing cost-capability ratios for competitiveness, (2) adapting to market changes and enhancing supplier capabilities, (3) navigating the pressures of financialization, and (4) managing risks - whether economic, political, social, or environmental (Coe & Yeung, 2015). These four variables ultimately influence and shape four different strategies of a firm in a global production network regarding their organizational structures, spatial arrangements, and relationships: Intra-firm coordination, inter-firm control, inter-firm partnership and extra-firm bargaining (Coe & Yeung, 2015).

It is important to note that GPN 2.0 is not a complete departure from GPN 1.0. It shares the same foundational principles and remains an actor-centered approach, viewing the global

economy as a network of value-generating activities within complex organizational structures and specific regional contexts (Coe & Yeung, 2015).

Applying the GPN 1.0 framework is better suited for the context in which this thesis is situated. Firstly, the shifts in Samsung's global production network in Bac Ninh from 2008 to 2023 add complexity to understanding causality over time. As factors such as production strategies, technological developments, or the geopolitical landscape continuously change, the cause-and-effect relationships within Samsung's global production network are not static, making it difficult to use a framework focused solely on linear causality, such is GPN 2.0. In this context, Neilson et al. (2018) argue that "in an attempt to present a logic of deductive causality, GPN 2.0 seems to lose some of the relational benefits of GPN 1.0, whereby industry network configurations are coproduced within broader embedded networks" (p. 420).

Finally, GPN 2.0 focuses much on lead firms and less on suppliers (Zheng, 2024). However, the relationship with suppliers plays a crucial role in the case of Bac Ninh presented later.

This thesis will therefore adopt GPN 1.0 with its focus on the dynamic negotiation processes between regional institutions and lead firms, rather than GPN 2.0's emphasis on firm-level drivers. Considering the research question, it is argued in this thesis that GPN 1.0 will better provide the necessary explanatory tools to answer it.

4 Research design and methodology

This chapter will introduce the case study method and its relevance in GPN studies, as well as explain the choice for the case study of Samsung Electronics in Bac Ninh. Finally, this chapter lays out the data collection process as well as how the process of qualitative content analysis (QCA) was conducted.

4.1 Case studies

Yin (2018) defines a case study as "an empirical method that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (p. 45).

Additionally, Yin describes case studies as being able to address the unique challenge of having more variables of interest than data points. Case studies benefit from developing theoretical propositions beforehand to guide its design, data collection, and analysis. Further, a case study relies on multiple sources of evidence, ensuring that data converge in a triangulating manner (Yin, 2018). This definition, encompassing both the scope and features of a case study, shows the comprehensive mode of inquiry in case study research. Ultimately, it has its own unique logic for design, data collection methods, and specific approaches to data analysis.

Yin (2018) contrasts case study research with survey methods, noting that case studies provide more detailed, in-depth understanding of processes, whereas surveys are limited to broader, less nuanced insights. It is specifically these nuances in Samsung Electronics' production network in Bac Ninh that this thesis aims to highlight. GPN's sensitivity to complex interconnections, regional- and context-specific variations as well as the dynamic nature of production networks are ideal for uncovering how strategic coupling processes unfolded, and especially the nuances which play a crucial part in that. As laid out below, this thesis' case study incorporates qualitative content analysis (QCA) to answer the research question. With regard to this question, it is clear why a case study is a valid approach. It allows for a deep exploration of the nature of Samsung Electronics' operations in Bac Ninh. Crucially, a case study can provide a detailed and precise analysis of processes, in this thesis' case strategic coupling processes, and how these evolved over time. This is an advantage of case study research over quantitative studies (George & Bennett, 2005).

In summary, a case study's emphasis on process and time over structure makes it the right method for answering the research question. Additionally, the research question itself implies that a case study serves as an appropriate research design because, according to Yin (1994), a case study fits well when "a 'how' or 'why' question is being asked about a contemporary set of events over which the investigator has little or no control" (p. 9).

4.2 Case studies in GPN

Global production networks have been explored through various case studies. For example, Coe et al. (2004) analyze the case of BMW's global production network, showing that the effects of coupling processes on regional development can vary significantly and are not inherently advantageous for the involved region, in their case Rayong (Thailand). Other GPN case studies include the exploration of trans-border investments of a Taiwanese PC firm into China (Yang & Coe, 2009) or Breul and Diez' (2018) case studies of Jakarta and Singapore in the upstream oil and gas GPN.

4.3 Case selection

The choice of Samsung in Bac Ninh as the focal point of this GPN case study is not arbitrary. According to Yin (2018), *a single-case study* is ideal when the case fits one or more of five key criteria: It is critical, unusual, common, revelatory or longitudinal. These characteristics ensure that focusing on a single case is meaningful and contributes valuable insights to research.

The criteria for selecting the case presented in this thesis are based on criticality, exceptionality and commonality. With regard to *criticality*, several aspects are important. First, while Vietnam and the role of FDI in the development of the country have been studied before (e.g. Nguyen & Nguyen, 2007), the region of Bac Ninh itself has not been analyzed with a GPN lens. Additionally, an analysis spanning more than 15 years, from the groundbreaking of the first Samsung mobile phone factory in 2008 up to 2024, has not been conducted. Therefore, further empirical studies, especially studies of how strategic coupling processes evolve over a period of over a decade, are critically needed.

Samsung in Bac Ninh is an *exceptional* case as this is the region where the country's first major phone assembly took place (Nguyen, 2023). From a global perspective, it is a critical manufacturing site in a production networking shifting away from China, called "the '*China+N'* strategy of geographical diversification" by Yeung (2022, p. 284). While Yeung (2022) has

analyzed the shift from China to Vietnam with a GPN 2.0 perspective, it has not been analyzed with a GPN 1.0 framework and a focus on strategic coupling processes.

From a Vietnamese perspective, the exceptionality lies in the fact that Bac Ninh is the smallest province by area in Vietnam yet has made a breakthrough development from an agricultural province in 1997 to an industrial hub of the country since Samsung invested in the region (Bac Ninh Industrial Zones, 2022).

At the same time as being a unique case, it shows *commonality* in the sense that many regions in the world have similarly been trying to plug into the global production networks of electronics such as Bac Ninh, but have largely been confined to assembly of final products with limited value added, e.g. India (Francis, 2018) or Mexico (Shafaeddin & Pizarro, 2010).

4.4 Data collection

A structured data collection process was implemented to ensure the validity and reliability of the QCA. Secondary data from both quantitative and qualitative sources serve as key evidence for gaining deeper insights into the case study (Yin, 2018). In social sciences, document sampling precedes content analysis and forms the basis for systematic research design (Mayring, 2014). A well-defined document sampling strategy is essential in this process (Assarroudi et al., 2018). Qualitative researchers typically employ purposive, snowball, or convenience sampling to capture diverse perspectives, ensuring socio-demographic and phenomenological variation (Coyne, 1997; Elo et al., 2014). In contrast, quantitative content analysis relies on probabilistic sampling for statistical validity (Zhang & Wildemuth, 2016).

This study used purposive sampling, which is an ideal technique for qualitative studies because it focuses on informants with the most relevant knowledge of the research topic. It requires decisions on sampling targets, methods, and the appropriate number of participants or sites (Elo et al., 2014). From this thesis' perspective, this should ensure that all key actors, as well as the structural and spatial dimensions of Bac Ninh's strategic coupling processes identified in Chapter 5, are adequately represented in the data.

The sampling process began by defining a timeframe from 2008 to November 2024. Documents had to be published in this period, to align with the groundbreaking of Samsung's first factory in Bac Ninh and subsequent developments. Documents published outside this timeframe were excluded to maintain relevance and adherence to the research question. Scientific articles were included only if they were accessible via open access or Scopus, ensuring reliability and verifiability. To account for diverse perspectives, documents in English, Vietnamese, and Korean were included. Of these documents, two Korean documents and five Vietnamese documents were translated into English language with the artificial intelligence chatbot ChatGPT. While limitations such as potential inaccuracies in translation and nuances being lost in automated processes exist, it is argued that the importance of analyzing documents in their original language ensures a more comprehensive understanding of the context and subtleties specific to the topic. By using sources in multiple languages, it is argued that a broader range of perspectives are analyzed.

To capture the long-term implications of strategic coupling processes, the number of documents selected was balanced across the period. Therefore, documents published in several different years across the period of 2008-2024 were selected. Further, the study employed data triangulation to integrate multiple viewpoints – local, national, international, corporate, and governmental – which enhances the comprehensiveness of the analysis (Patton, 1999; QDA City, n.d.).

Documents were selected based on Flick's (2018) four key criteria: authenticity, credibility, representativeness, and meaning. *Authenticity* was ensured by verifying authorship, publication details, and source credibility (Mogalakwe, 2009). The *credibility* of potential documents was evaluated by assessing the accuracy and objectivity of the content (Dunne et al., 2016), acknowledging that while some documents may present biases, they remained valuable (Payne & Payne, 2004). This is an important aspect within the lead-firm-centric GPN framework. *Representativeness* was considered by determining whether a document reflected broader trends (Morgan, 2022). *Meaning* refers to the significance of a document's content and whether the evidence is comprehensible and clear. The aspect of meaning also specifies

that documents have both literal and interpretive meanings. The literal meaning reflects the document's face value, while the interpretive is concerned with the context in which the document was created (Mogalakwe, 2009). In a GPN case study, the context in which a document is created is a crucial aspect because the research involves the analysis of multiple stakeholders. The data collection for the case study adhered to the four sampling criteria explained. The remainder of this subchapter details the specific documents selected which represent the various actors central to a GPN analysis.

The final dataset includes corporate documents such as Samsung Electronics' reports and press releases, which provide insight into its operations in Bac Ninh. Further, government reports and policies related to Samsung's production network were selected, including agreements with the lead firm, reports from relevant ministries such as the Ministry of Industry and Trade, and documents outlining the role of regional institutions in strategic coupling. Additionally, labour and industry reports were incorporated, including publications from NGOs, news articles, and documents on labour conditions from supranational institutions such as the International Labour Organization (ILO) and the World Bank.

The sample size was determined by reaching the point of redundancy, where further documents did not contribute new insights (Merriam & Tisdell, 2016). The data collection process concluded with 40 documents, aiming to achieve two objectives: Firstly, that all identified influential actors in Bac Ninh's strategic coupling processes were represented. Secondly, that further sampling was unlikely to generate new themes relevant to the research question. The final step in the data collection process involved uploading the documents to QCAmap for analysis. This will be detailed in the next subchapter.

4.5 Data analysis

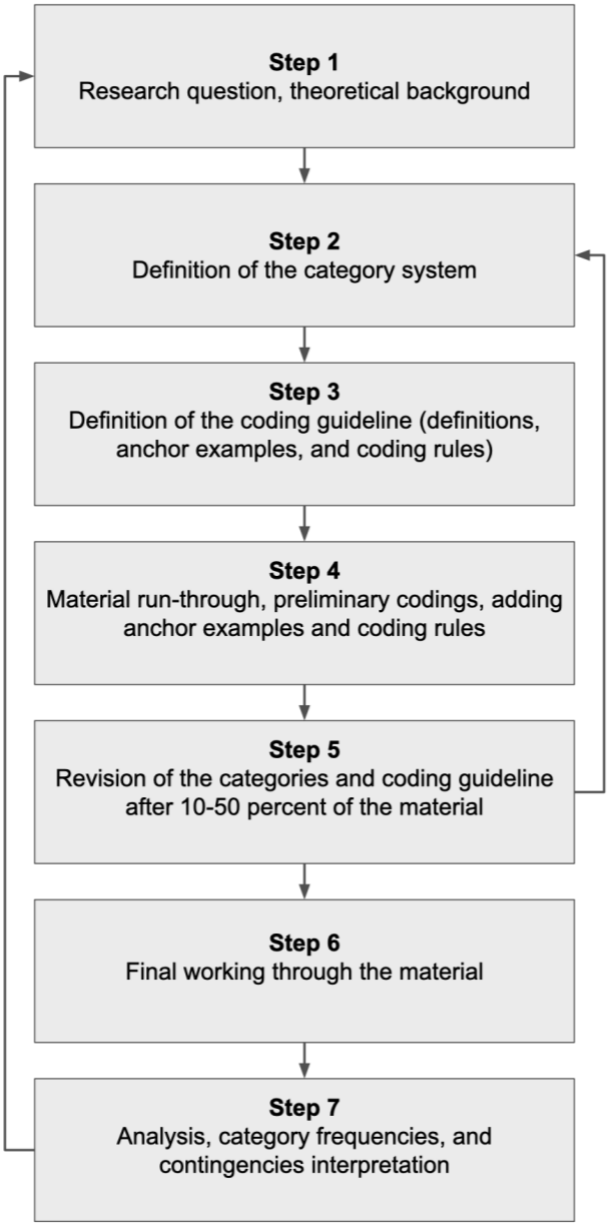
At the core of this research lies an in-depth qualitative content analysis following Mayring (2014). Mayring differentiates between three basic forms of interpretation within content analysis: summary, explication and structuring. This thesis will apply the *structuring* form of interpretation, and the specifics and procedures will be highlighted in this subchapter.

Generally, content analysis is among the most central methods in research, aiming to identify a certain structure within the material (Mayring, 2014). A structure is applied to the text with the help of a category system in which, systematically, all relevant text components are extracted according to predefined categories. If one describes, in general, the process of structuring, a few key points stand out. First, structuring dimensions should be clearly defined, derived from the research problem, and theorized. Further, these characteristics or values specify the dimensions. Finally, dimensions and values are combined into a coherent category system (Mayring, 2014). For the case study presented here, the categories are defined with reference to the three conceptual value categories of the GPN framework, specifically from Henderson et al. (2002) and Coe et al. (2004).

Mayring (2014) describes seven steps for conducting deductive category assignment, as illustrated in Figure 3.

Figure 3

The steps of deductive category assignment



Note. Figure redrawn from "Qualitative content analysis: Theoretical foundation, basic procedures and software solution," Mayring, 2014, p. 96 (https://nbn-resolving.org/urn:nbn:de:0168-ssoar-395173).

Step 1 involves formulating a clear research question and describing the theoretical background, including theoretical positions and previous studies (Mayring, 2014). Additionally, the research question must fit the deductive approach, indicating an a priori interest in specific

aspects of the material with a solid theoretical foundation. This has been conducted in previous chapters. In the second step, the research question is operationalized into categories, translating research aspects into the material. While not all categories must come from existing literature, they should be theoretically grounded. In this thesis' case all categories come from existing GPN literature. It is also necessary to verify that the material contains text passages relevant to the defined categories. Where possible, categories should be grouped into main categories using nominal or ordinal classifications. This thesis uses strictly nominal categories (e.g. *value capture*) as classification. Step 3 requires the creation of a table with four columns: category label, category definition, anchor example, and coding rules, with each category represented in a single row. The table is populated with category labels and definitions, including anchor examples and coding rules, if available. The table, also known as the coding guideline, is part of the Appendix of this thesis. Step 4 describes the coding process. Text passages which fulfil category definitions are marked and the corresponding category label are noted. If a text passage serves as a prototypical example, it is added as an anchor example in the coding guideline. Anchor examples in Mayring's QCA serve as explicit and concise exemplifications, clarifying how particular text passages fit into each category. They provide a reference point for coders to ensure consistency and accuracy in the coding process, thus enhancing the reliability of the analysis. Step 5 involves revising the categories and coding scheme once the coding guideline appears complete. For this thesis, the categories were revised after 30 percent of the material. In step 6, if changes to the coding guideline invalidate prior category assignments, the researcher must rework the material from the beginning and list all category assignments linked to the recording units. During the coding process conducted as part of this thesis, a reworking of the material was not needed. Finally, step 7 focuses on the analysis. Initially, the results are analyzed by checking quality criteria and focusing on the distribution of categories per recording unit. The frequencies of assigned categories across all recording units are analyzed.

The aim of briefly describing the steps in deductive category assignment in this subchapter is twofold. Firstly, it highlights how the research was conducted, specifically following Mayring's

approach step by step. Secondly, it shows how such a structured approach allows systematic analysis of data, ultimately ensuring rigor, consistency, replicability and reproducibility.

QCAMap

The qualitative content analysis was conducted using *QCAMap* software, developed by Mayring and based on QCA techniques. Crucially, it enables systematic, rule-guided, and inter-subjective analysis of various textual materials, such as interview transcripts and documents (Mayring & Fenzl, 2016). The software is particularly useful for deductive category assignment because it guides the researcher through a structured workflow in setting up a category system based on previous research. The software offers templates specifically designed for deductive category assignment, allowing operationalization of the research questions into predefined categories. Further, its features contribute to consistency and dependability; it ensures that coders, while applying the same category to different texts, apply it consistently. Nevertheless, the central process of assigning categories to text passages is still a qualitative and interpretive procedure (Mayring & Fenzl, 2016). The rest of this subchapter will explain the step-by-step procedure of using the programme.

First, a new project is created with the tool QCAMap. The research question is entered and the content analytical technique — deductive category assignment — is selected. Afterwards, the content analytical units are defined in line with Mayring (2014). These three segmentation rules must be explicitly defined to ensure that a second coder can achieve similar results. The *coding unit* determines the smallest component of material which can be assessed and what the minimum portion of text is which can fall within one category, thus expressing the sensitivity of the analysis. For example, the question a researcher has to answer is whether a slight overtone within one word is sufficient for a coding decision, or whether it should be a complete phrase? The unit chosen for this thesis here is ‘phrase or clause (word sequences)’. This coding unit sits between the unit of ‘single word’ and ‘complete sentence’ and allows for a nuanced analysis of the value categories within the texts. The *context unit* determines the largest text component which can fall within one category. It can overlap with the recording unit, but often it is broader. For instance, if the recording unit is an interview response, the

context unit might include the entire case. It may also encompass observations during interviews, details in an observation protocol, or background information about participants, such as cultural or social context. With regard to this thesis, the context unit is defined rather broadly as ‘1 Document’.

The *recording unit* determines which text portions are confronted with one system of categories. By choosing ‘Deductive Category Assignment’ as the content analytical technique this is automatically defined by the tool as ‘1 Document’. This means that the context unit and recording unit are the same. Further, multiple categorizations were allowed to ensure the coding of different categories within a single document. This approach highlights instances where specific categories appear multiple times within a document. The next step was formulating a coding table containing the definitions of the coding guidelines.

Continuing, the next stage was the coding of the material. Text passages that fit the category definitions were marked and the category label noted. If coming across a text passage where the assignment to a category was unclear, a decision was made and a coding rule for that and similar future cases were formulated. Next, the revision was an important part of QCA to ensure a stable category system. This involves the programme prompting the researcher to revise the category system and coding guidelines. Once this phase was completed, no further changes were made to the coding guidelines and coding continued.

Coding all documents once is argued to be sufficient due to the systematic and structured approach of a QCA. Further, the revision of the categories and coding guidelines after going through 30 percent of the material is argued to reduce the need for multiple coding rounds. Considering this, the choice for a single-coding approach is argued to allow the full capture of key patterns and themes within the documents.

Finally, after finishing the coding of the entire material, the results of the analysis were provided in two Excel files. One file contains the categorized text passages, including the category assigned to each of the marked passage (See Appendix A). The second file contains the final coding guide for the technique of deductive category application (See Appendix B).

4.6 Limitations

It is important to acknowledge not just the strengths, but also the limitations of a case study where QCA was applied. While extensive desk research was conducted, no fieldwork was done. With regard to the obtained findings, fieldwork (e.g. through conducting interviews) could have provided opportunities to gain further insights by directly engaging with key actors. Further, fieldwork could have helped verify the interpretations derived from the documents analysis. With regard to news articles from Vietnam, some bias is expected due to censorship of the press in the country (BBC News, 2024). Nevertheless, particular attention was paid to carefully selecting newspaper articles; and using these news articles helped provide a picture of the case study area and gave insights into how strategic coupling processes were facilitated in Bac Ninh.

Concerning the method, deductive content analysis is a structured approach which is less susceptible to biases and is a solid method to test existing theories (Delve et al., 2023). Nonetheless, deductive content analysis limits the identification of new patterns or themes in the data and may not accommodate multiple perspectives and viewpoints in the way other methods would. Thus, it makes it difficult to answer exploratory research questions (Delve et al., 2023). Consequently, the quality of this research strongly relies on preexisting theories or frameworks, in this case the strongly established GPN framework. The following Chapter 5 will map the global production network of Samsung in Bac Ninh before the results of the QCA are presented in Chapter 6.

5 Mapping the global production network of Samsung Electronics

This chapter maps Samsung Electronics' global production network. It provides an overview of the electronics GPN literature, examines the global supply chain of the electronics sector, and highlights Vietnam's role in the industry. It also traces changes in Samsung's global production network from 2008 to 2024. Finally, it maps Bac Ninh's position within Samsung's global production network, highlighting its structure and integration into the region.

5.1 Overview of the electronics GPN literature

The electronics industry has gathered a lot of attention from researchers in economic geography and this section explores GPN literature related to this complex industry. Electronics is a group of related industries producing final goods, systems and networks. However, there is no single, precise definition of electronics. The final goods industries can usefully be divided into six major sectors: telecommunications, defence, consumer electronics, computing, industrial equipment and semiconductors (Hobday, 2001). These are interrelated; for instance, semiconductors are basic building blocks of any electronic system and are utilized by all final goods industries. Further, it is common that semiconductor manufacturers jointly design semiconductors with systems manufacturers (Hobday, 2001). Within this thesis, the main sector to be focused on is the consumer electronics sector, of which Samsung Electronics is a lead firm.

Growth in the industrial and technology structure has been very much accelerated since the 1960s. Since then, progress in technology has led to a sharp decrease in semiconductor and hardware prices relative to performance (White et al., 1997). Through R&D conducted mainly in developed economies, this has spurred innovations such as the internet, mobile phones, digital television, and multimedia computing (Hobday, 2001). The booming electronics industry, particularly during the 1990s, attracted newcomers and thereby increased technology investments. Further, competition has increased with the privatization, liberalization, and deregulation of markets and the enhanced capabilities of the newly industrializing economies in the Asia-Pacific region, such as South Korea and Taiwan (Yeung, 2022).

Henderson's book (1989), discussing how high-technology production shifted from a regional to a global scale, was one of the first publications to analyze the electronics industry of the Asia-Pacific region in an international production context. He focused largely on the semiconductor industry, showing an international division of labour in electronics. Hierarchically on top were TNCs from the USA, Japan, and Europe, using highly automated production systems with core R&D for next-generation products. Right after these developed

economies came the ‘Four Asian Tigers’ using relatively automated production technology with minimal R&D input, producing mostly simpler products and components.[6] Hierarchically below the four tigers were the second tier newly industrialized economies (NIEs). These include the economies of Malaysia and Thailand, with the most labour-intensive production shifted to emerging NIEs such as the Philippines, Indonesia, Vietnam, and China. This characterization, though, oversimplifies the complex and dynamic landscape with many exceptions and overlooks other developing regions and Eastern European economies entering the production networks (Yeung, 2022).

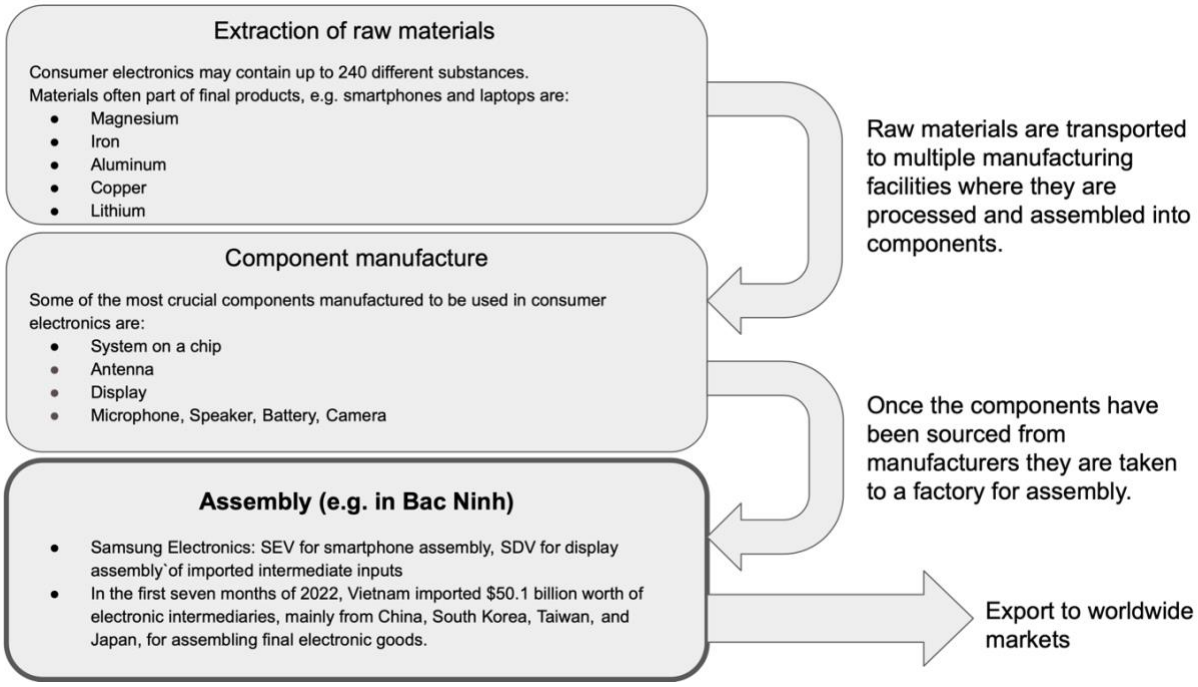
Ernst (2003) describes how the electronics industry has rapidly globalized and became more complex, leading to sector-specific global value chains for products like microprocessors, memories, and PCs. Within these value chains, various global production networks compete and cooperate, with the intensity of competition differing across sectors.

The shift from centralized systems to decentralized architecture, driven by the availability of standard components, played a significant role in the broader trend of increasing specialization across value chains in various sectors, including electronics, automobile, clothing, retailing, and logistics (Ernst, 2003; Yeung, 2022). This transformation led to the horizontal disintegration of the vertically integrated electronics industry, resulting in distinct yet interconnected market segments such as integrated circuits, board assembly, disk drives, operating systems, and networking equipment. As these specialized segments evolved, the electronics supply chain became more intricate and diversified, reflecting the industry's ongoing trend towards specialization (Ernst, 2003).

[6] The Four Asian Tigers are the developed Asian economies of Hong Kong, Singapore, South Korea, and Taiwan.

Figure 4

The global supply chain of consumer electronics



Note. Own figure. From "The global supply chain of a mobile phone," by H. Webb, 2022. *Ethical Consumer* (https://www.ethicalconsumer.org/technology/global-supply-chain-mobile-phone).
From "Vietnam spent $50 billion importing computers, electronic products, and components," by Vietnam Investment Review, 2022 (https://vir.com.vn/vietnam-spent-50-billion-importing-computers-electronic-products-and-components-95925.html).
From "HP Product Material Content Information," by HP Development Company, 2019 (https://h20195.www2.hp.com/v2/getpdf.aspx/c05117791.pdf).

Figure 4 gives an overview of a consumer electronics supply chain, showing how the above-mentioned market segments of electronics are interconnected. Three stages are crucial before a finished consumer electronics product emerges. The first step begins with the extraction of raw materials such as magnesium, iron, aluminum, copper, and lithium, which are essential for manufacturing devices such as smartphones and laptops (Webb, 2022). These materials are often extracted in one country and then transported to another for processing. For example, copper critical to consumer electronics is mined in Chile and then sent to China for further processing, where many of the critical components of smartphones, such as chips, antennas, displays, and batteries, are manufactured (Baskaran et al., 2024). Once these

components are made, they are transported to assembly factories in various countries. In Vietnam, for instance, large companies like Samsung set up major assembly operations. The factories in Vietnam producing computers and phones rely heavily on imported intermediary products, which are sourced from places like China, South Korea, Taiwan, and Japan (Vietnam Investment Review, 2022). The assembly process is often a mix of automated production and hand assembly, especially for intricate parts of smartphones. In countries such as Vietnam, Indonesia, Taiwan, and Bangladesh, workers labor long hours, typically for low wages, to put together these high-tech devices (Kucera & de Mattos, 2019). Once the assembly is completed, the finished products are shipped to global markets (Webb, 2022).

Crucial for the GPN mapping and analysis in this thesis is the highlighted third stage, which is the assembly of a phone. This is the stage of production which Samsung has offshored to Bac Ninh in 2008. The following sections will describe how this developed in more detail. This brief description of the consumer electronics supply chain is helpful when analyzing assembly operations in a specific region, which will later be conducted for the region of Bac Ninh, because it helps to understand the entire production process and how different stages are interconnected. This underscores the region's role in the broader global supply chain, showing its dependence on raw material imports, component manufacturing, and importantly its position in the assembly phase.

5.2 Vietnam and the electronics GPN: Overview and historical developments

Before delving into the specific case of Bac Ninh and how the region developed as an assembly hub under the influx of Samsung's FDI, it is important to sketch crucial and unique historical developments of Vietnam. This will help understand and give a fuller picture of how Samsung's production network in Bac Ninh is situated.

The description starts during the 1980s, when the country faced several economic challenges, including shortage of basic consumer goods, trade deficits and a slowdown in economic growth (Tuan, 2009). In 1986, eight years after China initiated similar changes, a far-reaching

reform program was implemented in Vietnam, popularly known as *Doi Moi* ('Renovation'), which sparked the transition from a central planning system to market socialism.

Targeted first were rural areas, where agriculture was decollectivized (Tuan, 2009). More autonomy was given to farmers, and price controls were removed. Such reforms allowed for the development of a private sector, comprising mostly small and medium-scale enterprises, abolished central planning and ended state monopoly in foreign trade. Inputs used to produce exported goods were granted exceptions in tariffs, and a reduction in other non-tariff barriers was implemented.

Following the end of a US trade embargo against Vietnam in 1993, Chaponniere et al. (2010) argue that three trade agreements had a substantial effect on increasing market access and trade liberalization in the context of Vietnam's international integration. The first agreement was the country's accession to the Association of Southeast Asian Nations (ASEAN), which is a political and economic union in 1995. After joining this union, Vietnam reduced import tariffs from ASEAN countries to under 5 percent by 2006. Accordingly, other ASEAN countries reduced tariffs on Vietnamese exports, enhancing the country's market access in the region. The second important agreement was finalized in 2000, when Vietnam signed a bilateral trade agreement with the United States, which opened the American market to Vietnamese products, subject to quotas. After the elevation of Vietnam to most-favored-nation status (MFN) in 2002, the average tariff rate on Vietnamese imports into the US dropped from approximately 40 percent to 3-4 percent (Chaponniere et al., 2010).[7] The third agreement was Vietnam's Wolrd Trage Organization (WTO) accession in early 2007, around five years after the accession of China and nearly two decades after the Doi Moi reforms were adopted. Membership in the WTO grants Vietnam MFN status in all member countries, removes the quota restrictions on Vietnamese exports, and binds Vietnam to the rules laid down by the WTO (Chaponniere et al., 2010).

[7] The principle of MFN ensures that countries value all their trade partners equally and do not give special treatment to any one nation. According to the WTO, its members are supposed to extend the same benefits, such as lower tariffs, to all other members.

Brief history of FDI in Vietnam

Before Samsung built its first mobile phone factory in Bac Ninh, FDI had already been a crucial part of Vietnam's economic transition and growth in the decades since the implementation of Doi Moi. According to Freeman and Hew (2002), it is hard to imagine the success of Doi Moi without FDI, which effectively served as an imported private sector for a country with a private sector only emerging at the beginning of the 1990s. Much of the research on FDI in Vietnam highlights the positive effects on the economy. Nguyen (2006) finds that FDI has significantly boosted Vietnam's growth rate and generated additional wealth through increased exports. Empirical results by Trinh and Nguyen (2015) show that, in the period of 1990–2013, FDI influx had a positive economic growth impact in Vietnam.

While a comprehensive analysis of Vietnam's Doi Moi reforms is beyond the scope of this thesis, it is nevertheless crucial to emphasize its effects on the country and its economy. From the mid-1980s up until the late 2000s, Vietnam's economy surged with an average GDP growth of nearly 8 percent per year and foreign trade growing at a yearly rate of 20 percent (Chaponniere et al., 2010). This made Vietnam, next to China, one of the fastest-growing economies in Asia during that time (Trinh & Nguyen, 2015). Although this thesis is interested in the strategic coupling processes of Samsung in Bac Ninh province and not with less nuanced macroeconomic processes and the effects of economic reforms, these processes under the Doi Moi reforms may have contributed in part to attracting large investments of Samsung in Vietnam and specifically Bac Ninh since 2008.

Industrial Zones in Vietnam

To foster the development of new industries, the Vietnamese government created industrial zones (IZs), which have become fundamental to the nation's economic development. These zones are deeply integrated into major global production networks, such as those associated with Samsung, and have been instrumental in attracting investment (Anh et al., 2016). The primary goal of the IZs was to create more attractive conditions for investment, diversify

industries, and promote export-oriented light industries (Ministry of Planning and Investment, 2017). A critical feature of these zones is their provision of infrastructure for industrial projects, which are located separately from residential areas.

The first Vietnamese IZ was set up in 1994, and by the late 1990s, dozens of these zones were established across the country. Over time, the IZ model became a major driver of FDI in Vietnam, with these zones accounting for a significant portion of the country's annual FDI. By 2018, IZs had attracted thousands of domestic and foreign projects, contributing billions in registered capital. These zones have allowed Vietnam to integrate into global production networks, with major electronics firms like Samsung, LG, Bosch, and Canon setting up operations (Nguyen et al., 2021).

As a result of these developments, IZs have not only boosted the state budget through export revenue, but also created millions of jobs, representing a substantial portion of the workforce in the country's industrial and construction sectors (Nguyen et al., 2021). These trends underline the growing importance of IZs in Vietnam's economic transformation, positioning the country as a key player in the global manufacturing landscape.

5.3 Mapping Samsung Electronics' global production network

This next section will map Samsung's electronics global production network with a focus on the case study's main area of interest — the region of Bac Ninh.

Before doing so, the following section will briefly sketch out the company's history. This provides context on the firm's path towards becoming a global electronics lead firm and how this led to it establishing a manufacturing base in Bac Ninh.

5.3.1 Samsung Electronics: A brief history

Samsung Electronics (abbreviated as SEC), headquartered in Suwon, South Korea, is the flagship of the biggest and oldest *chaebol* in Korea: Samsung Group. Founded in 1969, Samsung Electronics initially manufactured black-and-white TVs. In the early years, the company expanded into many areas of domestic appliances, such as washing machines and

refrigerators, coupled with entering the telecommunication markets, creating a base for future growth.

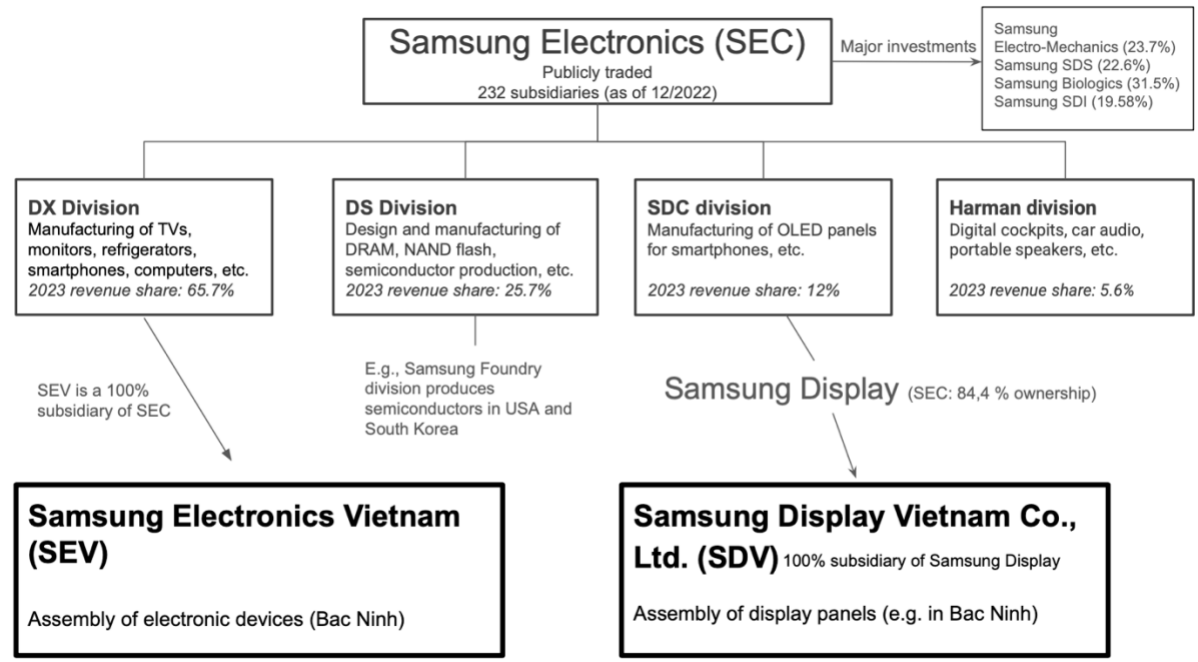
By the late 1970s it entered the world of semiconductors, which soon became one of its core operations. This is also the period where Samsung focused on investing in R&D — an approach that saw the company's innovation capabilities increase and challenge the established companies at the time (Kim, 1997).

In the early 1980s, the core technology businesses of Samsung diversified and expanded into international markets (Samsung Newsroom, 2012a). Samsung established its first manufacturing subsidiary outside of South Korea in Portugal in 1982. Additional manufacturing subsidiaries were established in the United States in 1984. In 1988, a Mexican manufacturing subsidiary further solidified Samsung as a global lead firm in the electronics market.

In 1992, Samsung operated its first manufacturing facility in China, and by the mid-90s the rising Chinese middle-class also made it a lucrative consumer market for Samsung (Samsung Newsroom, 2012b). During the same year Samsung became the world’s leading producer of memory chips, a position it still holds today. The company further improved technologically and in terms of product quality. As a result, some of its technology products started finding their way into top five positions in global market share, from semiconductors to computer monitors and LCD screens (Bondarenko, 2024). In the 2000s, Samsung launched its line of Galaxy brand smartphones, which would turn out to be among the firm's most successful products ever made. Concurrently, Samsung became one of the largest manufacturers of microprocessors in the world, supplying microprocessors to some of its smartphone competitors, e.g. for some of Apple's early models of iPhones. Since 2006, Samsung has been the world's largest television manufacturer (Shaik, 2024).

Figure 5

Ownership structure of Samsung Electronics (SEC)



Note. Own figure from "Samsung Electronics 2023 Business Report," by Samsung Electronics, 2024[8] (https://images.samsung.com/is/content/samsung/assets/global/ir/docs/2023_4Q_Interim_Report.pdf).

As of December 2022, SEC was a publicly traded company with 232 subsidiaries, organized into a wide range of divisions and subsidiaries, as shown in Figure 5. Its main divisions are DX (Device eXperience), DS (Device Solutions), SDC (Samsung Display Corporation), and Harman, each contributing to distinct business areas such as TVs, semiconductors, OLED panels, and audio solutions. The DX division, focusing on consumer electronics, holds the largest revenue share at 65.7 percent, followed by the DS division with 25.7 percent, SDC with 12 percent, and Harman with 5.6 percent. Two key subsidiaries, operating in Bac Ninh, Samsung Electronics Vietnam (SEV) and Samsung Display Vietnam (SDV), are responsible for assembling electronic devices and display panels, respectively. The following subsection

[8] Revenue shares do not add up to 100 percent due to internal transactions between divisions.

will go into more detail regarding the company's global production network from the beginning of 2008 up until 2023, and how the two assembly sites in Bac Ninh fit into this network.

5.4 Samsung Electronics' global production network from 2008 to 2023

This subchapter will describe how the global production network of Samsung has expanded, beginning with a description of the network around 2008. Further, key changes in the production network will be detailed. Finally, this subchapter will outline recent developments in Samsung's global production network.

5.4.1 Samsung Electronics' production network around 2008

With a revenue of just over 100 billion USD in 2008, Samsung Electronics had already been a global electronics powerhouse, leading in the manufacturing of televisions and LCD monitors, and having large market shares in several other electronics product categories (Samsung Electronics, 2009a). Further exemplifying its global reach is the fact that 85 percent of the company's revenue in 2009 originated outside of South Korea (Samsung Electronics, 2009a).

With regard to mobile phones, which play a crucial role in the case study later, the firm's global shipments in 2008 amounted to around 196 million units, capturing a 16.2 percent market share. This positioned Samsung as the world's second-largest phone maker, trailing only Nokia (see Figure 7). Additionally, the company held the number one position in worldwide DRAM memory sales with a market share of 30.1 percent (Samsung Electronics, 2009b).[9]

The company operated a vast production network with 29 global production subsidiaries. Among others, there were six production subsidiaries in South Korea, twelve in China, four in Europe, three in North America, and one in South America. Notably, mobile phone production was concentrated in two facilities in China and one in India (Samsung Electronics, 2008).

[9] Dynamic Access Random Memory (DRAM) is a high-speed memory that temporarily holds data for active applications, enabling quick access but losing all information when power is turned off.

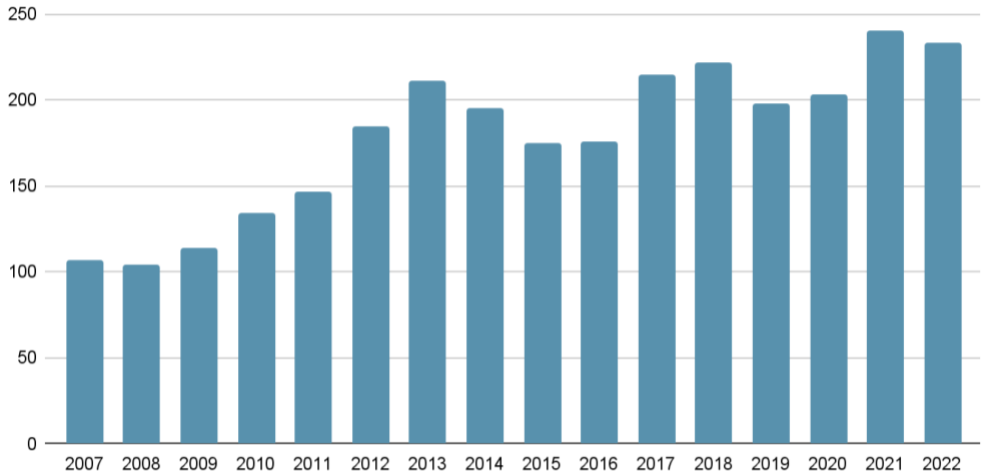
In 2008, it invested 6.9 trillion Korean Won (KRW), or 9.5 percent of company sales, into R&D and had 42,100 researchers working for the company. Regarding the workforce, by the end of 2007, Samsung employed a total of 155,400 people worldwide, with 95,800 of these positions located in Korea. With regard to ownership, Samsung Electronics was (and continues to be) a publicly traded company. The company shares at that time were predominantly foreign, with 52 percent held by foreign investors and 48 percent held domestically. According to its 2008 annual report, the company committed strongly to the concept of shareholder value.

5.4.2 Samsung Electronics' production network between 2008 and 2023

A thorough description of all developments and trends in Samsung's production network between 2008 and 2023 is beyond the scope of this thesis. Nevertheless, this section aims to highlight some major trends in the company's structure and production network during that time.

Figure 6

Samsung Electronics' annual revenue in billion USD from 2007 to 2022



Note. Own figure from "Revenue for Samsung," Companies Market Cap, 2024, (*https://companiesmarketcap.com/samsung/revenue*).

Figure 6 shows how the company's revenue steadily increased between 2007 and 2022 from over 100 billion USD in 2007 and 2008, to breaking the mark of 200 billion USD in 2013, and peaking at 240 billion USD in 2021. According to reports, the peak in 2021 can be majorly attributed to its mobile phone and semiconductor segment, the latter recording a revenue of 78.2 billion USD and enabling the firm to overtake Intel as the top chip seller of 2021 (Mu-Hyun, 2022; Xinhua, 2022). Despite recent earnings challenges in that segment, Samsung remains one of the top three producers of advanced chips globally, ranking second after TSMC and ahead of Intel in 2023 (Tarasov, 2023). The next section will go into additional detail regarding its current network, of which the semiconductor production is a key business area.

5.4.3. Recent developments in Samsung Electronics' global production network

According to its 2023 Sustainability Report, Samsung Electronics had 2,131 suppliers and operated in 71 countries in the year 2022. Revenue stood at 233.13 billion USD, more than doubling its revenue from 2008. At the end of 2022, Samsung's global workforce amounted to 270,372 employees, with 152,445 of employees working worldwide and 117,927 in Korea, reflecting a 74 percent increase in total employment since the end of 2007. By the end of 2022, Samsung operated a total of 31 production sites across the globe, including three in North America, three in South America, four in Europe, four in China, two in the Middle East, one in Africa, two in Southwest Asia, six in Southeast Asia, and six in South Korea. While the amount of production sites only increased by two compared to 2007, there was nevertheless a noticeable shift in the location of those sites. Since 2008, Samsung expanded its production footprint to include two African countries; it started manufacturing TVs and monitors in South Africa and phones in Egypt. With regard to production in North America, Samsung strongly increased its footprint in the US. In 2017, it established the firm's first US manufacturing facility for home appliances in Newberry County, South Carolina. Further, the company has been producing semiconductor components in Texas since 1996. In 2020, Samsung announced a historic 17 billion USD investment in chip manufacturing in the state, marking its largest

investment in the US to date. In other parts of the world the company has downsized operations. In China, Samsung has restructured its mobile phone production as overall production sites decreased by eight compared to 2008. Accompanying this is also a strong decline of Samsung's workforce in the country. It spiked at around 63,000 employees in 2013, before gradually dropping below 50,000 in 2015, and below 40,000 in 2016 and 2017 (Kim, 2022). Additionally, consumers in China have not demanded Samsung phones. From an 18 percent market share of the Chinese mobile phone market in 2014, the company recorded only a 2 percent share in 2018 and by 2023, its market share had decreased to 1.67 percent (Chiang & Wu, 2024; Meda, 2021).

However, Samsung has aligned itself with China's technological growth by adjusting its investments rather than exiting the market as the country now has a strong demand for advanced components (Bae & Kang, 2023). For example, the Chinese city Tianjin hosts Samsung Electronics' camera module plant, Samsung Display Co.'s factory of OLED display modules, as well as Samsung SDI's rechargeable battery plant to supply to smart gadget and EV makers (Bae & Kang, 2023). Thus, Samsung's operation in China can be summarized as the company focusing on high-end manufacturing, and reducing simpler assembly activities (Huang, 2023). Nevertheless, especially with regard to marginal demand for its smartphones in China, Samsung maintained a significant global smartphone market share of 19.4 percent in 2023, closely following its largest competitor Apple, which held a market share of 20.1 percent. Despite still having a significant market share, the smartphone production of Samsung is facing increasing pressure not just from Apple, but from companies headquartered in China, e.g. OPPO and Xiaomi (see Figure 7). Chinese smartphone brands have capitalized on the attractiveness of emerging markets by offering affordable devices with high specifications. Additionally, tensions with Western countries have further boosted demand for devices produced domestically in China, leading to significant sales growth in recent years (IT Edge News, 2024).

Nevertheless, Samsung has kept its dominance in is the memory segment, where it held 38.9 percent of the DRAM market share as of the third quarter of 2023 (Trendforce, 2023). Despite

Samsung's global restructuring of its smartphone production network in, it has kept its so called 'mother factory' in Gumi, located in south-central South Korea (Lee & Jung, 2015). This is where soon-to-be-launched flagship phones are tested in the assembly lines. Once production stabilizes, the new models are then mass-produced in worldwide factories, e.g. in Bac Ninh. While the Gumi plant was only responsible for around 3 percent of the total production volume around 2022, it continues to be a control factory for Samsung's worldwide smartphone production (Korea IT News, 2022).

Samsung also continues to be a global leader with regard to R&D. Expenditure in this segment amounted to 24.9 trillion KRW in 2023, which was more than 10 percent of its annual revenue and a 260 percent increase compared to 2008.[10] In 2023, it conducted research and development at 41 R&D sites worldwide, mostly in South Korea, China and the US.

5.4.4. Summary of the evolution of Samsung Electronics' global production network

Around 2008, Samsung Electronics had already established itself as global electronics leader with a vast production network spanning Asia, Europe, and the Americas and strong positions in TV, LCD, memory and mobile phone markets. Over the years, the company steadily expanded both its workforce and research capacity, more than doubling its global employee base by 2021 and heavily increasing investment in R&D. Samsung's production operations grew, especially in regions such as the US and Africa, though it scaled back manufacturing in China in response to changing market demands and shifted mobile phone production to Vietnam and India. While smartphone demand in China declined, Samsung pivoted its focus there towards high-end component manufacturing, such as display and battery technologies. It also adapted to changes in memory demand, as it invested more heavily into advanced chipmaking.

The company's market share in most of its products remained high, including in semiconductors. Samsung's extensive R&D network expanded globally, supporting its

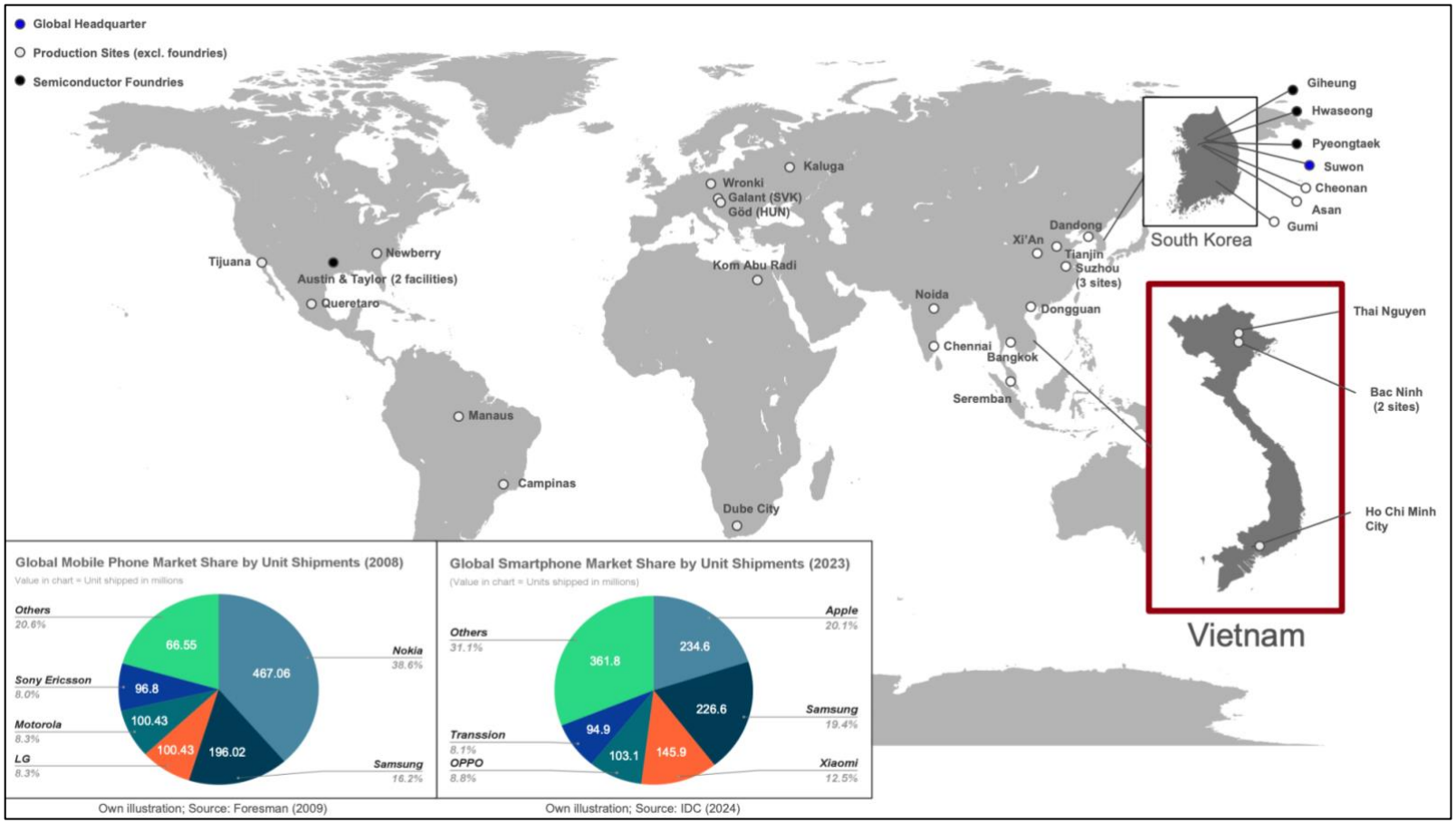
[10] According to the Federation of Korean Industries, Samsung Electronics was responsible for 49.1% of the country's total corporate R&D spending in 2021 (Kim, 2023).

strategic production mode which combines flagship innovation sites in South Korea with international mass production.

Figure 7 illustrates Samsung Electronics' global production network in 2023. It shows how manufacturing spans across the globe and highlights the production sites in Vietnam.

Figure 7

Samsung Electronics' global production network in 2023



Note. Own figure from "Samsung Electronics Sustainability Report," Samsung Electronics, 2023 (https://www.samsung.com/global/sustainability/media/pdf/Samsung_Electronics_Sustainability_Report_2023_ENG.pdf).

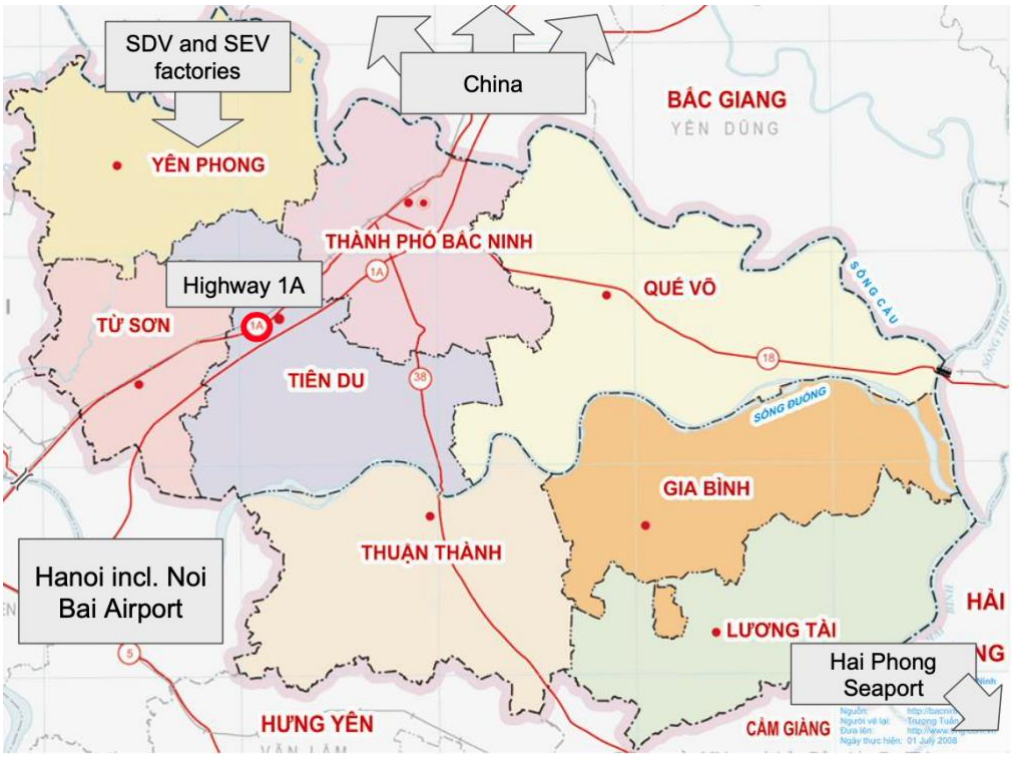
5.5. Samsung Electronics' global production network in Bac Ninh

This subchapter will first describe how the region of Bac Ninh is situated geographically, further outline how Samsung's global production network in the region has developed since 2008 and finally outline and illustrate the relevant regional actors in Bac Ninh within this network.

5.5.1 Situating Bac Ninh

Figure 8

Map of Bac Ninh province and the surrounding area



Note. Adapted from "Map of Bac Ninh," Newone, 2008, *Wikimedia Commons* (https://commons.wikimedia.org/wiki/File:Map_of_Bac_Ninh.jpg).

Bac Ninh is a Vietnamese province in the Red River Delta in northern Vietnam. It is in the center of the Northern Delta, only 30 minutes from the capital Hanoi by car. It has fast access to crucial transportation hubs such as Noi Bai International airport, the largest airport in the region, and second largest in the country (Bac Ninh Portal, 2020). The province also connects important land and water ways. The national highway 1A, a backbone axis, passes Bac Ninh

province, directly linking it to the northern border with China. Additionally, a railway connecting Bac Ninh with the northeastern city of Lang Son facilitates the shipping of goods to China.

Bac Ninh's central position in the North also enables easy access to neighboring provinces, such as Thai Nguyen, Phu Tho, and Vinh Phuc, and to seaports in Quang Ninh and Hai Phong. The latter was formed in 1874 by French colonialists; today it has the largest cargo throughput in the North of Vietnam.

The region's flat terrain has traditionally contributed to intense rice cultivation and other farming activities (Bac Ninh Portal 2020). Today, this flat terrain and a stable geology is used by companies to quickly build factories, especially in the Industrial Zones, without the need to survey or level the land.

The province, before the attraction of FDI and large lead firms in manufacturing was characterized by a predominantly rural population, with the rural population over five times larger than the urban population in 2005 (Kim, 2021). By 2011, three years after Samsung's arrival, the rural population fell by about 5 percent, while the urban population grew by 72 percent. By 2022, the rural population increased by 18 percent, but urban growth was significantly greater, soaring by 94 percent between 2011 and 2021. Population density increased by approximately 46 percent from 2011 to 2021 (Kim, 2021).

Before the FDI influx, Bac Ninh could be considered an agricultural province, since more than 75 percent of the population and 70 percent of the labour force were reliant on agriculture and similar activities (Kim, 2021). However, the agricultural share of the province's GDP decreased from 10.6 per cent in 2010 to around 3 per cent in 2018, hence indicating how FDI may have played a significant role in changing the structure of the regional economy (Kim, 2021). During the same period the share of industry climbed from 58.4 percent to 76.5 percent, that of services from 20.6 percent to 38.71 percent.

5.5.2 Samsung Electronics' global production network in Bac Ninh since 2008

The story of Samsung Electronics in Vietnam begins in 1996, when the company opened its first manufacturing plant in the country, a television plant close to the capital Ho Chi Minh City

(United Press International, 1996). However, nearly all electronic FDI pouring into the country happened after 2007, which is also around the same time Vietnam became a WTO member (UNIDO, 2018).

In 2008, after approval by the Vietnamese government, the company invested heavily in Bac Ninh for the first time. Its subsidiary *Samsung Electronics Vietnam* (SEV) established its first factory in the region, to assemble phones in Yen Phong Industrial Park (Bac Ninh Industrial Zones Authority, 2022). The initial investment was 670 million USD on 100 hectares of land, with a factory employing 2,300 people producing 1.5 million phones per month (Thuong, 2023). This number substantially increased to over 18,000 employees by mid-2012 (Ministry of Labour Vietnam, 2012). 70 percent of workers in 2011 were women (Nguyen, 2011). Before this significant commitment to Vietnam, the company mainly produced its phones in Tianjin (China), Gumi (South Korea), Manaus (Brazil) and India (Bonelli & Pinheiro, 2005; Kim, 1997). By the end of 2012, the Bac Ninh provincial government approved a second phase of investment by Samsung. This investment of 830 million USD brought the total investment capital in the region to 1.5 billion USD and added 40 hectares of industrial land. The company wanted to continue to benefit from lower wages due to increasing wages in China, whereas Vietnam still offered comparatively lower wage levels. The wage of a factory worker in Beijing in 2012 was 466 USD, in Hanoi it was only around 145 USD (Japan External Trade Organization, 2013). The shift away from China was further intensified by the expansion of Samsung Electronics into another region in Northern Vietnam, Thai Nguyen. There it initially invested 2 billion USD, which within one year increased to 3 billion USD.

The year 2014 can be argued to be the second most influential year for Samsung–Vietnam economic relations. That year, the government of Bac Ninh Province also awarded an investment certificate to *Samsung Display Vietnam* (SDV*)* for a major factory within the Yen Phong Industrial Park to assembly displays, with a total budget of one billion USD (Minh, 2016).

Figure 9

Samsung factories in Yen Phong Industrial Park, Bac Ninh province

Note. From "Samsung Vietnam: Where dreams come true", by Vietnam Chamber of Commerce and Industry, 2023 (*https://en.vcci.com.vn/samsung-vietnam-where-dreams-come-true*).

5.6 Regional actors and institutions: Samsung Electronics in Bac Ninh

The following section will describe and illustrate crucial regional actors in Bac Ninh within Samsung Electronics' global production network and their interactions, with a focus on the two assembly sites.

Samsung's operations in Bac Ninh commenced in 2008 when the company established its first mobile phone assembly plant in Yen Phong Industrial Park, a site developed specifically to attract FDI from South Korea. This decision to offshore production to Vietnam aligned with Samsung's global strategy, overseen by the headquarter in South Korea, to optimize costs and centralize high-value activities such as R&D and marketing in its home country (Lee, 2016). Following this, Samsung expanded its footprint in Bac Ninh with the 2014 opening of a display module assembly factory, further solidifying its role as a major investor and employer in the region.

This offshoring strategy was facilitated by Vietnam's liberalized investment climate. The Vietnamese government, through reforms such as the 2020 Law on Investment, has ensured equal treatment for foreign and domestic investors, fostering a favorable environment for large-scale projects such as that of Samsung (Grozier & Keene, 2020). Vietnam's accession to the WTO in 2007 marked a turning point in its trade liberalization efforts, removing local content requirements and creating momentum for subsequent free trade agreements (FTAs), including the Vietnam-Korea FTA in 2015 (Kikuchi et al., 2018). These agreements have significantly reduced trade barriers, with the ASEAN Free Trade Area eliminating nearly all tariffs on traded goods within the bloc (ASEAN, 2012).

Samsung's presence in Bac Ninh reflects an intricate collaboration between multiple levels of Vietnamese governance. Frequent meetings between Vietnamese leaders and Samsung executives have strengthened strategic ties, as illustrated by the Vietnamese Prime Minister's visits to Samsung facilities and calls to expand the company's investment in Vietnam (Bao Thai Nguyen, 2021; VietnamPlus, 2018). At the provincial level, the People's Committee of Bac Ninh Province ensures alignment with national policies while addressing local socio-economic goals. The Bac Ninh Industrial Zones Authority, established in 1998, manages the operations of industrial parks like Yen Phong, coordinating infrastructure development and issuing investment certificates to foreign firms (Tung, 2023). These partnerships exemplify a model of democratic centralism, balancing local interests with national development priorities (Vietnam Law & Legal Forum, 2017).

The economic impact of Samsung in Bac Ninh is substantial, not least because the company is Vietnam's largest foreign employer, with around 70 percent of its workforce in assembly roles being female (UNIDO, 2018). This labour force is integral to Samsung's production model, which relies on the efficiency of assembly-line work. However, Vietnam's restrictive labour laws, which permit only state-controlled unions under the Vietnam General Confederation of Labour, limit the potential for independent worker representation. Consequently, labour unions in Vietnam often serve state or corporate interests rather than those of workers (Human Rights Watch, 2024; Ock et al., 2019).

Samsung's supply chain in Vietnam is equally illustrative of the challenges and opportunities of integrating local economies into global production networks. While Samsung has successfully attracted over 90 Korean suppliers to set up operations in Vietnam, a practice known as *follow sourcing* (Koo & Kim, 2022), the role of Vietnamese firms remains limited. Local suppliers typically contribute low-value-added products such as packaging and basic materials, with few capable of meeting the technological and quality requirements of higher-value components (Sheldon & Kwon, 2023).

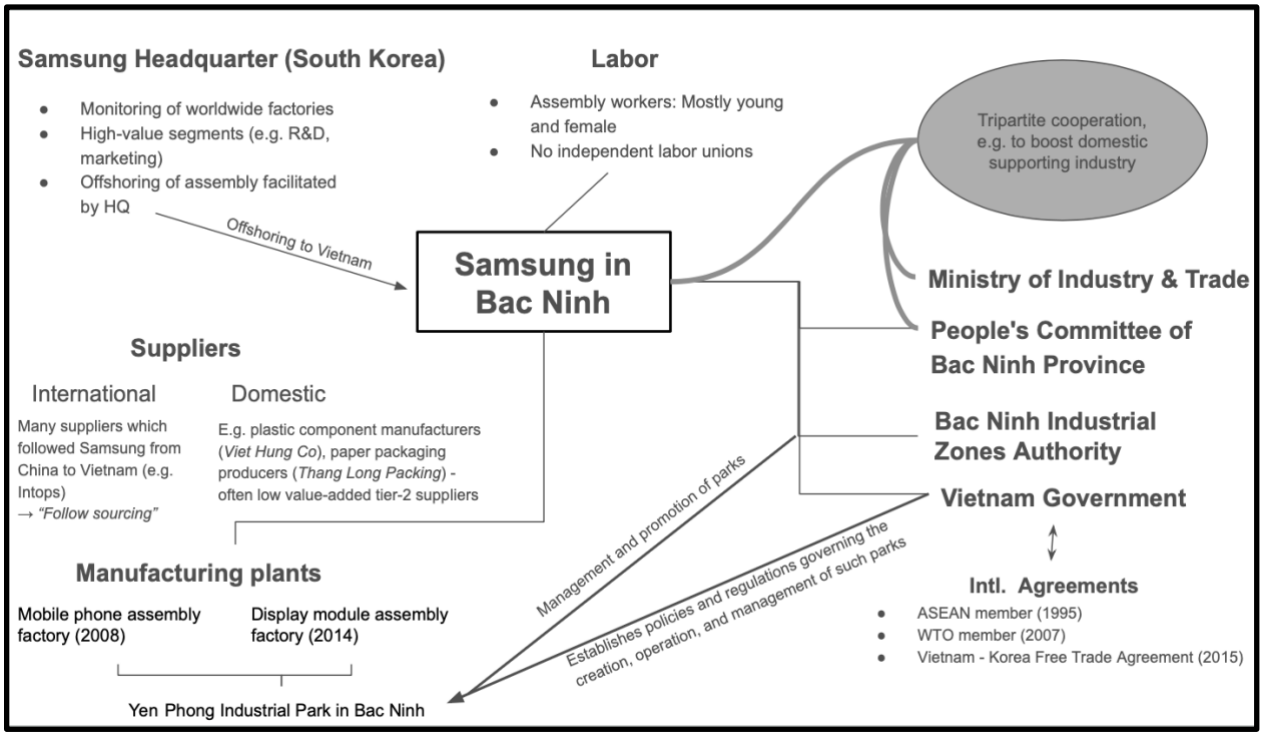
Samsung has collaborated with the Ministry of Industry and Trade (MoIT) to integrate local suppliers into its value chain, part of a broader tripartite cooperation involving the government, private sector, and foreign investors (Vietnam Investment Review, 2020). However, such efforts have yet to achieve significant breakthroughs in upgrading the technological capacity of Vietnamese firms.

Summarizing, trade liberalization has played a critical role in shaping this landscape. On one hand, agreements like the Vietnam-Korea FTA and Vietnam's membership in ASEAN have created conditions for rapid FDI inflows and export growth (Duong et al., 2021). On the other hand, the removal of local content requirements and other protective measures has constrained Vietnam's ability to leverage FDI for long-term domestic industrial development (Curran et al., 2019). Samsung's operations in Bac Ninh have been driven by strategic offshoring and leveraging Vietnam's cost-effective labour while centralizing high-value activities like R&D in South Korea. The Vietnamese government has, through its policies, international agreements and supra-national memberships, created an environment conducive to foreign investment, while regional authorities in Bac Ninh support infrastructure development and align local policies with national goals. However, labour unions remain state-controlled, limiting independent worker advocacy. Local suppliers contribute mostly low-value components, highlighting the gap in technological capabilities. Despite trade liberalization boosting FDI, critics argue it has limited Vietnam's ability to develop its domestic industries.

To conclude this chapter, Figure 10 illustrates the global production network of Samsung Electronics in Bac Ninh.

Figure 10

The global production network of Samsung Electronics in Bac Ninh



Note. Own illustration. From "Overseas factories, domestic employment, and technological hollowing out: A case study of Samsung's mobile phone business," by Lee & Jung, 2015, *Review of World Economics,* 461, pp. 461–*475 (https://doi.org/10.1007/s10290-015-0219-8).* From "Linking FDI and local firms for global value chain upgrading: Policy lessons from Samsung mobile phone production in Vietnam," Tong et al., 2019, *Inclusive and Sustainable Industrial Development Working Paper Series (https://downloads.unido.org/ot/15/78/15784588/WP5.pdf).* From "Report on Summarizing 20 Years of Establishment and Development of Bac Ninh Industrial Parks," by Nguyen Duc Cao, 2018, *Bac Ninh Industrial Zones Authority* (*http://izabacninh.gov.vn/en/xem-tin-tuc/20-years-of-bac-ninh-industrial-zones-authority-50/report-on-sumarizing-20-years-of-establishment-and-development-of-bacninh-industrial-parks-6056.html*).

6 Analysis

The coding of the 40 sources via QCAMap resulted in 125 references.[11] This chapter shows the results obtained within these sources of how strategic coupling processes between the province of Bac Ninh and lead firm Samsung unfolded, and how they influenced notions of value. Most of the sources included multiple references. This is due to two reasons. Firstly, as

[11] The 125 references are in Appendix B.

explained in Chapter 4.5, the enabling of “multiple categorizations” allowed the coding of different categories within a single data source. Secondly, the coding of multiple references of the same category in a data source is also possible. This occurs because a single data source may address the same category (e.g., value creation) but focus on different aspects within that category (e.g., one passage in the source discussing wages, another passage adressing workforce competencies).

The analysis conducted in the rest of this chapter draws on references from 20 out of the 40 coded sources. This selection was made because some references were more relevant to the analysis of value categories than others. Additionally, including all sources in the analysis would lead to repetitive results, since many sources showed similar results. The decision for 20 documents was also made with regard to the scope of the analysis, because this selection allowed for a more concise discussion in the next chapter. It should also be noted that several sources (e.g., large-scale reports) included considerably more references than others (e.g., newspapers). Newspaper articles where often short, with many only containing one or two reference.

Value Creation

The decision by Samsung to invest in Vietnam, particularly in Bac Ninh, was primarily influenced by labour costs that were significantly lower than in China (Reference 34). Still, the company's operations have had a profound impact on employment and local wages in Bac Ninh. The indirect employment effects of Samsung’s FDI can be inferred from the 55 percent increase in Vietnam’s manufacturing sector workforce between 2008 and 2015, which grew to over 6 million workers (Reference 5). By the end of 2015, the relevant ‘office machinery, communication equipment, and precision instruments’ industry comprised 8 percent of the manufacturing workforce, up from 3 percent in 2008. Further, wages in Bac Ninh increased above national averages. Between 2008 and 2015, the average annual wage of employees in the industry increased by 200 percent (Reference 2).

Another source highlights that wages in the electronics sector rose 60 percent and exceeded those of the general manufacturing sector from 2011 to 2021 (Reference 68).[12] Additionally, Samsung's operations in Vietnam induced further FDI by attracting the lead firm's regional and global suppliers to co-locate and supply parts locally. This strategy boosted investment and local employment, but limited opportunities for domestic suppliers to enter the production network (Reference 4). In 2014, Samsung maintained 67 tier-1 suppliers in Vietnam, the majority of which were local affiliates of foreign enterprises established to provide intermediate inputs for Samsung. Among these foreign firms, Korean entities constituted the largest group (53), followed by Japanese firms (7), with one supplier each originating from Malaysia, Singapore, and the United Kingdom. Only four tier-1 suppliers were Vietnamese (Reference 12).[13]

Further, despite Samsung's significant impact on Vietnamese employment and exports, its contribution to local value addition has been limited. OECD data reveals that Vietnam's share of value added in exports of computers, electronics, and optical equipment remained low in the initial years after SEV's establishment, despite strong growth in production and exports (Reference 6). In the years 2008 and 2011, foreign value added accounted for 70 percent of Vietnam's export value in computers, electronics, and optical equipment. While local value addition in the electronics industry has grown in absolute terms, the majority still accrues to foreign economies (Reference 10).

By 2017, Vietnamese officials estimated Samsung's local procurement at 30 percent of its production value, while Samsung reported 40 percent (Reference 7). At that time, Samsung employed only five Vietnamese tier-1 suppliers producing low-value-added materials, such as cardboard packaging for mobile phones.

The analysis shows that, in the context of Samsung's investments, pursuing FDI from tier-1 suppliers was beneficial for creating linkages as it enabled local firms to initially focus on

[12] Wages rose from 4.5 million VND to 7.2 million VND per month.

[13] In this chapter, whenever a reference is made to 'Vietnamese' firms or suppliers, it refers to firm or a supplier that is registered in Vietnam and is owned by Vietnamese citizens.

producing generic components before advancing to more complex products, in accordance with the principles of upgrading (Reference 28). Results indicate that this fragmented production approach provided an accessible entry point for local firms, even when they lacked the skills to manufacture specialized parts. The rise in local tier-2 suppliers to Samsung between 2014 and 2017 illustrated the potential for these suppliers to integrate into the production network.

Further, another report from 2018 identified the gap between lead firms' requirements and Vietnamese firms' capabilities to have still been vast. Reports from that time state that even local firms participating in the supply chain lacked long-term development plans necessary for sustained investment in equipment, technology, management, and human resources. (Reference 101).

Samsung's 2015 Sustainability Report shows that the company mandates supplier companies to meet the same strict standards as it does. While some local suppliers met the high standards, most did not. To address this, Samsung identified key suppliers and implemented improvement plans for them, including quarterly inspections focusing on firefighting, safety, and healthcare. Environmental safety managers from the headquarter also visited local suppliers to provide consultations and support, thus improving their safety management practices (Reference 38).

With regard to worker competencies, the analysis reveals several aspects. In 2017, the majority of Samsung's employees in Vietnam were classified as 'semi-skilled' workers, reflecting the overall skill composition of the workforce; 89 percent of employees were high school graduates, 7 percent possessed post-secondary or vocational education, and 4 percent held undergraduate degrees or higher (Reference 1). The workforce was predominantly female, comprising 75 percent of all employees. The gender pay gap in the electronics industry has narrowed significantly over the past decade. In 2010, women's wages were 51 percent of men's, rising to 89.6 percent by 2021, a smaller gap than in other industries across the economy (Reference 69). Additionally, half of Samsung's managerial staff, which totaled 500 members, were Vietnamese nationals (Reference 1).

Structural challenges in Vietnam's workforce have affected value creation since the opening of the first factory in 2008. Particularly outside Hanoi and Ho Chi Minh City, Vietnam's workforce had limited experience in high-tech sectors, thus creating challenges for foreign investors (Reference 49). This was due to the national government historically leaving the responsibility for training workers to foreign firms, leading to issues such as skills shortages or job hopping.

Generally, initiatives by subnational governments in Vietnam have been inadequate in providing the necessary investment in local vocational education and training (VET) institutions to meet the growing skill demands triggered by their FDI policies (Reference 45). This failure is reflected in the inability of Vietnamese VET schools and colleges to adapt to technological changes introduced by lead firms (Reference 46). As a result, VET graduates often fail to meet the qualitative demands of FIEs' advanced production systems.

Consequently, Samsung assumed it had to train all its workers (Reference 83) and foster stronger external relationships with government agencies to stabilize the local labour market (Reference 48). Thus, by ensuring labour market predictability, Samsung was able to confidently invest in substantial training for its expanding workforce, mitigating risks associated with labour shortages and turnover. This strategic approach improved workforce competencies (References 50, 57).

Further, Samsung conducts its own global competency test for university-level candidates, the *Global Samsung Aptitude Test* (GSAT), in Vietnam. It serves as a key reference for assessing the competencies, skill levels, and qualifications of potential employees, directly impacting the value creation process within Samsung’s global production network. By conducting the test twice a year, the company filters and recruits high-quality talent, ensuring that employees possess the necessary skills for critical roles. Over a decade of conducting the GSAT in Vietnam, the program received 190,000 applications, engaged 60,000 participants, and resulted in 14,000 hires, some who would later have key positions within Samsung Vietnam (Reference 117).

An ILO report (Reference 67) suggests that, despite higher educational attainment in Vietnam compared to neighboring countries, the low-skilled nature of work in the electronics industry is driven by the requirements of foreign electronic enterprises to contribute to global supply chains. A government representative noted:

"Workers in electronics enterprises are usually unskilled workers. Enterprises conduct short training courses in 12 weeks to meet job requirements. Therefore, enterprises do not have a need for workers to participate in vocational training"

(Reference 67).

Two major crises also had a profound impact on working conditions within the production network of Samsung Electronics in Bac Ninh, both underlining the fragility of value creation in the province. The first was the Samsung Galaxy Note 7 crisis in 2016 which led to halted production of the phone and resulted in some workers at the Bac Ninh plant having to stay at home, while others experienced pay cuts of 40–50 percent due to reduced overtime (Reference 98).[14] Additionally, many employees waiting at home faced a 70 percent reduction in pay, and hiring for the usual year-end rush was paused. Outside the factories local vendors experienced sales drops of 30 percent, and nearby landlords saw reduced occupancy and income. This incident underscored the integration of Samsung's operations with the local economy and the vulnerability of local value creation processes due to the production crisis of a single firm. Results show that the second crisis, the COVID-19 pandemic in 2021, also influenced value creation in several ways. Amid the crisis, Vietnam faced immense pressure to sustain its manufacturing sector and reassure foreign investors (Reference 93). To maintain factory operations and simultaneously prove its 'Zero-Covid' strategy, the government introduced a *three-on-site* model, requiring employees to work, eat, and sleep on factory premises.

[14] The Galaxy Note 7 crisis in 2016 involved widespread reports of the devices overheating and catching fire due to defective batteries, leading to a global recall and the eventual discontinuation of the model. This scandal significantly damaged Samsung's reputation, resulting in billions of dollars in losses and increased scrutiny on product safety.

Results show that Samsung Display implemented this approach, offering workers a choice between staying home without shifts or moving into company-designated spaces with added pay incentives (Reference 93). For nearly three weeks, workers endured isolation, fatigue, and monotonous routines, sleeping on mats or cardboard beds, with limited privacy and rest. Their lives revolved around constant production schedules, with limited connection to the outside world. The government's strategy influenced value creation by significantly worsening employment conditions. Workers played a critical role in sustaining Vietnam's economic stability by maintaining factory operations and ensuring the continuity of supply chain functions (Reference 94).

To protect economic stability and ensure value creation, the government also allocated vaccines preferentially to factory workers, including 400,000 doses for Samsung Electronics and to employees of its suppliers, alongside cash and financial support for workers and enterprises (Reference 118).

Value Enhancement

There is limited evidence that institutions in Bac Ninh invested in developing human resources required for value enhancement. In 2014, Samsung collaborated with the Vietnamese government to host annual *Samsung Sourcing Fairs*, where domestic firms showcased their products and learned about the company's sourcing policies. Despite interest from over 200 local firms at the inaugural fair, none met Samsung's stringent standards, underscoring the gap between local firm's capabilities and the lead firm's demands (Reference 32). In 2015, Vietnamese authorities began introducing policies and specific programmes aimed at strengthening local firms' integration into Samsung's value chain. That year, Samsung launched three-month technical consultation programmes for local firms to enhance effectiveness, productivity, and standards. Korean experts were sent to help potential Vietnamese suppliers improve their manufacturing processes (Reference 61, Reference 107). Positive results were published, e.g. one company boosted labour productivity by 42 percent and reduced mold replacement times by 67 percent, while another company reduced stage

errors by 34 percent and electricity costs by 30 percent after receiving consultation from Samsung over the span of 10 weeks (Reference 112, Reference 115). Reports indicate that most businesses involved in this initiative strengthened their competitiveness within the supply chains of Samsung and other firms. (Reference 64). By 2017, 29 local enterprises became tier-1 component suppliers to Samsung through this initiative, providing optical discs, packaging, printing, precision molds, and plastic components (Reference 64). This was a strong increase from only 4 such suppliers in 2014 (Reference 61). Despite some improvements in supplier competitiveness, the Vietnamese government launched the *Supporting Industry Development Programme* (SIDP) in 2017, which aimed to enhance domestic suppliers' capabilities and integrate them into global production networks. While local firms welcomed the initiative, they reported that initial productivity and technological gains plateaued shortly after establishing indirect linkages with Samsung. This was mainly due to recurring technology constraints and the rapid pace of industry changes (Reference 27). Another key result of the analysis is the uneven distribution of the level at which local companies supply to Samsung. While the number of Vietnamese enterprises in Samsung's supply chain grew to 215 by mid-2017, this included only 25 tier-1 suppliers but 190 tier-2 supplier (Reference 21). By 2018, the development of Vietnam’s supporting industries nevertheless required continued government support. For example, a local tier-2 supplier for Samsung overcame challenges in meeting Samsung's quality standards only through substantial investments in technology and support from Korean experts (Reference 102). The supplier also noted that working with Samsung presents greater difficulties in meeting supply demands compared to other companies, attributing this to the lead firm’s stringent requirements for product quality and adherence to international standards. Through the supplier’s successful alignment with Samsung’s criteria, it was nevertheless able to deliver locally made products to global markets. In 2020, Samsung also entered a 4-year agreement with Vietnam’s Ministry of Industry and Trade (MoIT) to train 200 moulding technicians

(Reference 59).[15] The goal was to support the growth of Vietnam's core manufacturing sectors. As part of the agreement, Samsung committed to conducting two training sessions annually.

Value Capture

One consequential area where Samsung influenced value capture was its control over the sectoral profiles of industrial parks in Vietnam (Reference 54). It wanted to avoid the challenges caused by sectoral specialization strategies it experienced in China. In Yen Phong Industrial Park in Bac Ninh, its subsidiaries SEV and SDV are the only major electronics lead firms with significant facilities. As a result, it avoided direct competition for skilled labour, enhancing its operational stability and retaining greater control, ultimately securing value capture.

From 2011 to 2015, Samsung's large-scale investments in Bac Ninh contributed to significant socio-economic development in the province. The establishment of a factory city housing 45,000 employees and hundreds of foreign suppliers stimulated local businesses, including the opening of nearly 2,000 new hotels and restaurants, tripling Bac Ninh's per capita GDP relative to the national average (Reference 86, Reference 88).

Aspects of value capture are also evident in tax-related findings. From the opening of its first factory, Samsung benefited from extensive tax incentives, including a four-year tax exemption and a preferential 10 percent income tax rate for 15 years. In 2012, additional tax breaks were secured for Samsung's expansion in Bac Ninh (Reference 116). Results indicate that such investment incentives were given to foreign lead firms such as Samsung, but not to Vietnamese enterprises (Reference 96).

By 2015, Vietnam contributed nearly 20 percent of Samsung Electronics' global profits, yet the corporate taxes paid by the company in Vietnam were disproportionately low (Reference

[15] A report from 2023 states that Vietnam's mould and precision engineering industry is valued at over $1 billion annually, growing at 18 percent. While there is significant demand for moulds in industries like plastics and mechanical engineering, only 8.5 percent of domestic production involves plastic injection moulds, with most relying on metal stamping, presenting opportunities for local firms to increase capacity and integrate into the global supply chain (Viet Nam News, 2023).

125). Tax policies allowed Samsung to save billions of US dollars in corporate income taxes, with one analyzed article describing Vietnam as a ‘tax haven’. Data from 2015 show that Samsung's tax contribution in Bac Ninh amounted to approximately USD 70 million that year, which represents a small fraction of the USD 5 billion in corporate income taxes paid globally by Samsung Electronics and its subsidiaries in 2015.

Nevertheless, operations of Samsung in Bac Ninh and more generally in Vietnam have significantly contributed to the province’s and country's socio-economic transformation since 2008. The data reveals a 12.8-fold increase in Bac Ninh state domestic revenue between 2008 and 2021 (Reference 122). During this period, Bac Ninh’s total tax and fee revenues amounted to 136,500 billion VND (5.69 billion USD), with Samsung contributing approximately 25 percent of this total 1.42 billion USD.

The analysis further emphasizes how national and provincial governments shaped Samsung's behaviors. In 2016, due to the limited ability to enforce formal regulations or other requirements, the Vietnamese government adopted an informal approach to guide Samsung’s actions and influence value capture positively. National and local leaders held regular high-level meetings with Samsung executives to gather feedback and facilitate business operations. Over time, Vietnam cultivated a strong relationship with Samsung, accommodating its needs on various occasions. For instance, the provincial government assisted with loading after a factory fire to prevent shipment delays and scheduled electricity shutdowns in a way which avoided disrupting the production of Samsung (Reference 17). In 2016, following Samsung's appeal, the central government granted a tariff waiver on specific steel plates imported from China, mitigating the impact of newly introduced tariffs for Samsung (Reference 79). This informal support strengthened Samsung’s operations in Vietnam, but did not address the challenges in developing a competitive local supply chain.

By 2020, Samsung’s reliance on foreign suppliers persisted, with only seven Vietnamese suppliers among its 93 partners (Reference 65). Domestic suppliers focused mainly on low-value-added activities such as packaging and printing, while higher-value components continued to be sourced from foreign firms. Government policies favoring state-owned

enterprises and MNEs over private domestic firms further hindered the development of Vietnam's local electronics sector.

To summarize, these results indicate that strategic coupling with Samsung has fostered some significant socio-economic development in Bac Ninh, such as higher wages, infrastructure expansion, and entry into the lead firm’s production network for some local firms. However, the gap between Samsung’s standards and many local firms' capabilities underlines systemic limitations in Bac Ninh’s supporting industries. While collaboration between the lead firm and regional government institutions improved local supplier integration and led to some value enhancement, the persistent focus on low-value-added activities illustrates a structural imbalance that limits Bac Ninh’s ability to capture value.

7 Discussion

This chapter discusses the results with regard to the research question of how strategic coupling unfolded between Samsung Electronics and the province of Bac Ninh between 2008 and 2024, specifically with a view to value creation, enhancement and capture. The discussion begins with the interpretations and implications of the results, then highlights limitations, and finally describes some avenues for further research.

7.1 Interpretations and implications of the results

Samsung Electronics is a powerful lead firm in the electronics industry. This industry is characterized as one of rapid technological change, which accelerates the pace of change in markets and technology and increases uncertainty and the volatility of market structures, industrial organization, and firm behaviors (Ernst, 2000). Results from Bac Ninh are consistent with these features as analysis shows that local firm’s productivity and technological gains often plateaued due to persistent t*echnology constraints* and the *fast pace of industry changes*. Further, the continuous implementation of supplier support programmes and sourcing fairs by Bac Ninh's regional institutions reflects a strategic response to its position

within Samsung's rapidly evolving network, which is significantly shaped by changing technological and market dynamics. In this context, integration into the production network appears to require continuous governmental support to help local firms in Bac Ninh adapt to meet the not only continuously changing but also challenging demands of the lead firm.

Value creation, as noted by Coe et al. (2004), works through the efforts of regional institutions in attracting the location of value-added activities, e.g. by training and educating the local workforce, promoting start-up firms and supplier networks or encouraging entrepreneurial activities. In Bac Ninh, regarding the promotion of (start-up) firms, the results showed that efforts in linking local suppliers with Samsung appeared only several years after the lead firm opened its first factory. For example, the 'Samsung Sourcing Fair' started only in 2014, and although Samsung was actively engaged in initiatives such as these fairs, there is no evidence in the results that it had an obligation to collaborate meaningfully with domestic suppliers. The delayed focus of linking potential local suppliers with Samsung can be interpreted as a reactive rather than proactive approach by the government. Initially, the government may have prioritized immediate goals, such as establishing factories and ensuring operational success, over long-term production network integration and thus may not have fully recognized the potential benefits of developing local suppliers or initiating initiatives such as training programmes, viewing it as a secondary concern.

The absence of collaborations between Samsung and local firms, such as joint ventures (JV), may have constrained Bac Ninh's ability to integrate into Samsung's value chain and capture higher-value-added activities. In China, e.g., Samsung as a foreign firm often had to enter into JVs, meaning it had to give up equity to set up manufacturing operations (Lee et al., 2003). Further, Vietnam's supplier ecosystem also remained underdeveloped compared to other Samsung production locations, such as China and India. These countries had established domestic electronics manufacturing services (EMS) giants (e.g. Dixon Technologies in India) to support outsourcing and collaborative production before Samsung started manufacturing there (Hsiao, 2023). The lack of EMS firms in Vietnam may have influenced Samsung's

decision to offshore production rather than outsource, as it limited the firm's ability to strategically couple with a large local firm and outsource parts of its manufacturing.

Further, the education and VET system was structurally limited compared to the needs of Samsung. As a result of these weaknesses, analysis shows that Samsung and regional institutions have initiated some strategic coupling processes in Bac Ninh's education and VET system, e.g. through conducting Samsung's GSAT or by collaborating with universities. These initiatives can be interpreted as Samsung strategically embedding itself into the local educational system in order to meet its labour demands. This may have limited access to skilled graduates for local firms, revealing a potential downside of strategic coupling. However, the overall demands in terms of workforce skills were mostly manageable for Samsung because, as results show, the tasks needed in assembly only required limited training.

Further, the analysis revealed standards to having a pivotal role in strategic coupling processes, thus aligning with key insights from the GPN literature which emphasizes compliance with international standards as essential for entry into globalized production networks (Nadvi, 2008). Meeting these standards presents both risks and opportunities. Firms that successfully adapt often achieve process and product upgrades (Womack & Jones, 1996). However, adherence to environmental and social standards creates a dilemma, because while meeting standards has the potential to enhance value, the financial burden and compliance risks fall on suppliers, often having limited resources (Raj-Reichert, 2011).

Kaplinsky (2010) highlights that suppliers investing heavily in a lead firm's specific standards may face 'lock-in costs', making it expensive to transition to another buyer's requirements. The impact of standards accreditation depends on supplier size and financial viability. While this is manageable for lead firms, it often excludes smaller suppliers from global value chains. In the concrete case of Samsung, its imposition of high environmental, safety, and product quality standards and its regular inspections and improvement plans for local suppliers underline the emphasis process compliance, which often demands significant investments in technology, management, and operational changes by domestic firms. Additionally, the case of a tier-2

supplier overcoming challenges in complying with Samsung's standards only through external support from Korean experts highlights the structural dependencies created by these requirements.

The gap between local firm capabilities and lead firm demands is evident in domestic firms' limited success at Samsung's sourcing fairs. Their struggle to meet quality criteria highlights the competitive pressures and high standards imposed on suppliers. This aligns with GPN literature, which highlights that lead firms dictate the terms and conditions of participation in networks and chains through different types of governance (Neilson et al., 2014). Further, Kumar and Beerepoot (2021) emphasize that local suppliers providing low-value goods and services typically operate as takers of industrial standards established by lead firms. Results show this appears to be the case for most local tier-1 suppliers in Samsung's production network in Bac Ninh. Suppliers often have limited bargaining power as they offer low value-added products like packaging. As a low-value input, packaging results in minimal switching costs because its low technological complexity allows many firms to provide it (Sturgeon & Zylberberg, 2016).

The potential for reconfiguring power dynamics between local suppliers and lead firms or intermediaries hinges on the suppliers' capacities to participate in value co-creation activities and establish strong interdependencies, as pointed out by Kano (2018). Analysis revealed limited evidence of these activities and interdependencies to have been present for local suppliers and thus little indication that local suppliers were able to redefine power relations to their advantage.

As mentioned before, the government's informal approach to fostering relationships with Samsung and a lack of concrete policies aimed at enhancing and capturing value from the lead firm emerges as a recurring theme within the global production network of Samsung in Bac Ninh over the time of analysis. This approach suggests a limited capacity to exercise *institutional power* by national and regional institutions to influence the decisions of Samsung. For example, tariff waivers, logistical support and governmental firm-friendly Covid-19 policies and support specifically tailored for Samsung reflect a strategic emphasis by regional

institutions on facilitating foreign investment to drive industrial expansion. This indicates a strong political commitment to economic growth. However, this has created a growth dependency on a single firm, underscoring significant challenges in developing a sustainable and self-reliant industrial ecosystem. With regard to the future development of the region, the *Bac Ninh Master Plan for 2021–2030* developed by the regional government suggests a continuing prioritization for economic growth, with a targeted annual gross regional domestic product (GRDP) increase of 8-9 percent (VnEconomy, 2024). Assessing this plan with results from the analysis indicates that these goals are heavily reliant on value creation by Samsung, as the firm is the main driver of the region's growth. From Bac Ninh's regional development perspective, it can be argued that while achieving simple economic growth targets, such as the envisioned GRDP growth until 2030, may be feasible, it fails to address the more critical issue of enhancing local value. From Samsung's perspective, its focus is less on the limited local value added and more on the continuous growth of exporting its products to global markets, which has arguably driven the company's continuous production expansion in Bac Ninh. This emphasis on export growth has been a longstanding priority for Samsung and continues to be so. Therefore, it is argued that Samsung's success and dominance of exporting finished products (e.g. smartphones) serves as a key factor behind the ongoing expansion of its investments, with expectations for further growth in the coming years, for example with a recently announced 1.8 billion USD investment in a new OLED assembly facility in Bac Ninh (Reuters, 2024a).

Nevertheless, given Samsung's past relocation from China to Vietnam, the possibility of disinvestment and relocation out of Bac Ninh to a different destination remains a real possibility often highlighted in GPN literature (Neilson et al., 2014). This potential *disembedding* of Samsung, possibly due to rising (labour) costs or geopolitical shifts, poses significant risks for a region heavily reliant on a single firm for its economic goals, and subsequently the political legitimacy of regional decision-makers. High-level meetings between Samsung executives and national policymakers such as the prime minister, along with the national media emphasizing Samsung's positive contributions to the countries socio-economic development,

underscore the relationship between policies (e.g. the *Master Plan*), GDRP growth targets, and the public trust in economic policymakers. A potential reduction in Samsung's operations could negatively impact socio-economic targets, thus potentially undermining the credibility of regional and national legislators.

This risk may be exacerbated by not only rising wages in Bac Ninh but also, as analysis showed, the region's lack of integration into Samsung's core technologies, further risking the region's ability to retain the firm. A statement from a local Samsung executive highlights the firm's objectives, suggesting that its focus may not align with the region's long-term development goals:

"Our technical consultation for domestic firms in Viet Nam is an exception. Samsung does not do that for other countries and the government keeps asking us to do more. But multinationals are here to make profits, we have to compete with many companies out there"

(Tong et al., 2019, pp. 22–23).

This statement also reflects aspects of *corporate power*, of which Samsung as a global lead firm possess a substantial amount. Further results reveal several cases where it used this power for its own interest. For example, the firm's successful negotiation to become the sole electronics lead firm in Yen Phong Industrial Park in Bac Ninh highlights its significant corporate power as it demonstrates the firm's ability to shape the region's industrial landscape by reducing the bargaining power of labour, local institutions and other investors. Samsung's ability to secure extensive tax incentives in Vietnam further underscores its corporate power, particularly in negotiating favorable terms with the national and regional government. Considering that Vietnam contributed nearly 20 percent of the firm's global profits by 2015, yet accounted for a disproportionately small share of Samsung's global corporate taxes emphasizes the imbalance in power. Thus, it appears that the region lacks the power to impose taxes on Samsung at a similar level as other regions. This situation exemplifies how global corporations capitalize on competitive tax policies (OECD, 2023). Nevertheless, the findings also indicate that the vast scale of Samsung's operations in Bac Ninh has significantly contributed to unprecedented increases in the provincial budget.

The national government, Bac Ninh provincial government and Samsung have continuously expanded upon their state-business partnership, fostering a growth coalition. Growth coalitions, as noted by Coe et al. (2004), have emerged within specific regions due to the increasing transfer of political and economic control from the nation-state to local and regional institutions. This shift has not only fostered the rise of such coalitions but has also contributed uneven regional development. The disparity in higher wage growth in Bac Ninh compared to the national average illustrates how Samsung's FDI may have increased uneven development by benefitting the local economy of Bac Ninh disproportionally compared to other Vietnamese regions. The recently announced OLED factory to be opened in Bac Ninh has the potential to further exacerbate regional development disparities within Vietnam. While clustering its factories in the region possibly offers Samsung synergies and operational efficiencies, this expansion is likely to drive disproportionate GRDP growth in Bac Ninh, further increasing its economic strength compared to other regions.

Comparing strategic coupling processes in Vietnam and China

As mentioned in the introduction, China held a significant role as an assembler of finished products within Samsung's global manufacturing production network before the company shifted its focus towards the lower-cost country of Vietnam. China's industrial upgrading and transformation have enabled its emergence as a key manufacturer of advanced technology products, including semiconductors and electric vehicles. The transformation was mostly fueled by a unique combination of low labour costs, affordable capital, a large domestic market, robust infrastructure, an educated workforce, and strong political commitment (Nguyen & Boudreau, 2016). The combination of all these decisive factors was something which neither Vietnam nor other competing nations such as Thailand or Indonesia possessed. Therefore, a comparison between Vietnam today and China before 2008 shows key differences in their integration into global electronics production networks. Still, there are some commonalities, such as both countries having had the ability to attract large-scale FDI, offer

low-cost labour and stimulate high annual GDP growth rates. This made them attractive for MNEs to outsource or offshore the assembly of its products.

However, Vietnam has not been able to strategically couple with global production networks as successfully as China has. One significant advantage China has over other countries is its vast domestic market, which has been a major contributor to its economic growth (Nguyen & Boudreau, 2016; Gereffi, 2009). The Chinese government has strategically leveraged this large market to create new trade and investment opportunities for foreign firms (Yusuf, 2004). Additionally, China's substantial pool of low-cost engineers and scientists has been instrumental in attracting foreign investment and fostering the development of high-tech industries.

Finally, China's entry into electronics production networks was facilitated by foreign lead firms. Taiwanese computer companies, for example, played a pioneering role in integrating the country into the global electronics supply chain (Yusuf, 2004).

To summarize the findings in response to the research question, Samsung's rapidly evolving production network in Bac Ninh required ongoing government support, but weak supplier integration limited value capture. The demand for mostly low-skilled labor within Samsung's factories in Bac Ninh persisted over the analysed time frame (2008–2024), limiting value capture. While cooperative initiatives between Samsung and government institutions, such as training initiatives addressing labor demands, they primarily served the lead firm, restricting broader skill development and hindering local firms' advancement in the value chain. Nevertheless, the company has contributed substantially to the region's socio-economic development through increasing wages and significantly increasing value capture by substantially increasing the regional state budget.

7.2 Limitations

This study focuses on a contemporary and dynamic topic, meaning that recent developments may not be fully captured, and certain elements might have been excluded due to time

constraints. Additionally, since interviews with actors relevant to Samsung's global production network in Bac Ninh were not conducted, their perspectives and practical experiences are not directly reflected in the findings. Instead, their views were inferred from document analysis, which is crucial but may introduce biases into the analysis.

To compensate for the lack of interviews, comprehensive information on strategic coupling processes was gathered from various sources, including actors from different countries. However, documents, as the primary form of evidence, have limitations, such as selectivity and reporting biases. These challenges are further exacerbated by Vietnam's repression of fundamental rights, including freedom of expression and association, which limits access to reliable data, particularly on politically sensitive issues. The long-standing control by the Communist Party, restrictions on independent organizations, and media censorship hinder research and the exchange of ideas, with researchers sometimes self-censoring due to the risk of government repercussions. Yet, these challenges also make this a crucial case for gaining new insights. In that context, newspapers were therefore valuable for their topical relevance and critical perspectives, even if they may reflect certain political biases.

7.3 Avenues for further research

Samsung represents a distinctive case of a lead firm within the GPN framework. Analyzing how Samsung's strategic coupling compares to that of other multinational electronics firms operating in Vietnam, such as Foxconn, an electronics lead firm with an investment footprint in Vietnam exceeding USD 3.2 billion since the 2000s (Reuters, 2024b), could provide valuable insights. Such comparisons may explain differences in power asymmetries, value distribution, and dependencies fostered within global production networks, thus further enhancing the understanding of how strategies of different firms shape both global and regional dynamics.

The results reveal a majority of local tier-2 suppliers compared to tier-1 suppliers in Samsung's production network in Bac Ninh. In that context, further research may be warranted to examine the specific factors that facilitate or impede the upgrading of local suppliers from tier-2 to tier-

1 status. As upgrading appears to be a critical factor for local policymakers, understanding the dynamics that facilitate or hinder this process is essential for shaping effective policy interventions. Investigating the economic performance of local suppliers relative to their tier could thud provide valuable insights.[16] For example, it would be important to explore how tier level impacts value notions, particularly in terms of value capture, which remains a crucial yet underexplored dimension of supplier upgrading within global production networks.

Finally, an analysis of Samsung's planned 1.8 billion USD factory in Bac Ninh could reveal if there are potential changes in the strategic partnership between the government and Samsung. It could be valuable to assess whether there are strategies by regional institutions of Bac Ninh to increase value enhancement and capture, as well as how quickly they respond to issues like the lack of local firms, which is a crucial result in this thesis. Understanding these factors could identify whether national and regional governments in Vietnam were able to better adapt its approach in fostering local economic integration compared to its initial strategic coupling in the first years of large-scale Samsung FDI.

8 Conclusion

This thesis aimed to, through document analysis, investigate and understand how strategic coupling processes between the region of Bac Ninh and Samsung unfolded and how these processes influenced notions of value within this, thus revealing developmental effects of Samsung's FDI. Through a case study employing a GPN framework, this thesis examined how this coupling evolved over more than 15 years, during which the lead firm continuously shifted its operations from countries such as China towards Vietnam, specifically Bac Ninh. While Samsung's role in Vietnam and Bac Ninh had been explored previously, this research is the first to analyze the strategic coupling processes between Samsung and Bac Ninh over this extended period.

[16] Blažek & Lypianin (2022) examine the economic performance of Czech electro-engineering companies, focusing on their tier, ownership, size, specialization, and host region, to challenge the assumption that lead firms and higher-tier suppliers capture more value than lower-tier suppliers. It finds significant variations in performance, with ownership and tier being key drivers.

GPN research often underscores the influence of organizational configurations on shaping developmental trajectories. In this case study, Samsung's FDI has been a major contributor to economic growth, increased tax revenues, higher wages, and infrastructure development in Bac Ninh. However, limited supplier integration and weak demand for high-skill labour by Samsung raise concerns about sustainable regional economic development. Bac Ninh's lack of integration into high-value production restricts its ability to capture greater value, raising questions about the broader developmental impact of Samsung's presence. Thus, to some extent, the results thus contradict the traditional understanding of industrial upgrading in emerging and developing economies, which is often seen as a linear shift from low- to high-value production, where economies grow by advancing technology and improving production capabilities (Phillips & Henderson, 2009).[17]

The results of this thesis align with another study of electronics global production networks (Plank & Staritz, 2013) which suggest that a concentrated organizational and geographic supply base, which Samsung has had in Bac Ninh, limits opportunities for local suppliers, regardless of their capabilities. Samsung's production network, such as its established global sourcing relationships and the relocation of many foreign suppliers to Bac Ninh, significantly limited opportunities for local suppliers, irrespective of their capabilities.

The COVID-19 pandemic and Galaxy Note 7 crisis highlight, within the GPN framework, both the risks and opportunities of regional dependence on a single firm. The COVID-19 pandemic underlines both the risks and resilience of Bac Ninh's reliance on Samsung, as workers endured harsh conditions to sustain operations and stabilize the economy. While this dependence exposed vulnerabilities, it also showcased how GPN underscores not only the significance of state-firm coordination in value creation but also how global production networks are highly politically contested (Teixeira, 2024).

[17] The conventional understanding of industrial upgrading typically suggests that emerging and developing economies can advance by moving up the value chain, shifting from low-value to high-value production. This perspective assumes a linear progression where economic growth is driven by increasing technological sophistication and improving production capabilities over time (Phillips & Henderson, 2009).

This thesis' results underline the necessity for a more balanced approach to development by regional institutions in Bac Ninh. In that regard, it also speaks to literature outside of GPN, for example to the concept of regional innovation systems (RIS). According to Blažek and Steen (2022), there is considerable potential for mutual inspiration between the RIS approach and the GPN/GVC framework, especially regarding the concepts of *new path development* and strategic coupling.[18]

Asheim et al. (2020) argue that RIS have had and will continue to have a strategic role in enhancing regional innovativeness and competitiveness in an increasingly interconnected world. Concretely, RIS identifies innovation as a critical growth driver (Asheim et al., 2006; D'Allura et al., 2012). Comparable to the results in this thesis, the RIS approach underscores knowledge transfer between the public and private sectors as a crucial mechanism to promote sustainable development (Gerstlberger, 2004).

Policy recommendations

The policies surrounding the global production network of Samsung in Bac Ninh should prioritize long-term and more diversified strategies.

Bac Ninh's significant dependence on Samsung for achieving the region's goal of sustained economic growth creates potential vulnerabilities, especially if the company decides to disembed. To reduce this risk, the regional government should prioritize diversifying the region's economy by supporting the growth of other industries, in addition to the electronics sector and Samsung's operations. This would decrease the reliance on a single firm. The substantial tax income Samsung contributes to the region's state budget could be reinvested into funding these diversification efforts, enhancing and sustaining the region's economic development.

Further, results indicate the Bac Ninh and Vietnamese government did not go beyond acting as a facilitator of global production networks. The findings thus provide some insight into the limited influence of state institutions in shaping value perceptions when their role is primarily

[18] See Tödtling & Trippl (2018) and Isaksen et al. (2018) for *new path development* typologies.

facilitative rather than regulatory, productive (e.g. via state-owned enterprises), or as a purchaser through public procurement. The facilitator role has been a focal point in economic development and trade policy recommendations by institutions such as the World Bank and the WTO (Horner, 2017). Nevertheless, other state roles may become increasingly relevant. In Bac Ninh, the limited success of strategic coupling underlines the increasing need for the Vietnamese state to take a more active role beyond simply facilitating. Local policymakers should consider this when designing future strategies. Specifically, it is recommended that regulations include mandatory commitments for Samsung, such as requiring participation in joint ventures, to ensure greater value creation and capture for the region.

To conclude, this thesis demonstrates that while Samsung's investment has driven significant economic growth, employment, and exports, the anticipated spillover effects — such as deeper supplier integration and broader industrial upgrading — remain limited. Strategic coupling processes in Bac Ninh have been largely characterized by a facilitative approach, where the provincial government has enabled Samsung's operations but exerted minimal influence in shaping industrial development. As a result, while value is created, its enhancement and capture within the local economy are limited. This raises broader questions about the sustainability of strategic coupling processes within FDI-led development models which prioritize the attraction of lead firms without sufficient mechanisms to integrate local suppliers. Moving forward, a more proactive and strategic role for the state may be necessary to ensure that Samsung's global production network in Bac Ninh, which does not appear to downscale in the near future, maximizes the region's socio-economic potential.

References

Agnew, J. (2021). Immanuel Wallerstein, the “modern world-system,” and radical human geography. *Human Geography, 14*(1), 17–30. https://doi.org/10.1177/1942778620974056

Allen, J. (2003). *Lost geographies of power* (1st ed.). Wiley.

Amin, A., Thrift, N. J., & Thrift, N. (Eds.). (1994). *Globalization, institutions, and regional development in Europe*. Oxford University Press.

Anh, N. T. T., Luu, M. D., & Trinh, D. C. (2016). The evolution of Vietnamese industry. In C. Newman, J. Page, J. Rand, A. Shimeles, M. Söderbom, & F. Tarp (Eds.), *Manufacturing transformation: Comparative studies of industrial development in Africa and emerging Asia* (pp. 235–256). Oxford University Press.

Asheim, B., Coenen, L., & Moss, H. J. (2006). The role of regional innovation systems in a globalizing economy. *The changing economic geography of globalization*, 139.

Asheim, B. T., Isaksen, A., & Trippl, M. (2020). The role of the Regional Innovation System approach in contemporary regional policy: is it still relevant in a globalised world? In *Regions and innovation policies in Europe* (pp. 12–29). Edward Elgar Publishing. https://doi.org/10.4337/9781789904161.00006

ASEAN. (2012). *Protocol for the accession of the Socialist Republic of Vietnam to the agreement on the common effective preferential tariff scheme for the ASEAN Free Trade Area*. ASEAN. https://asean.org/protocol-for-the-accession-of-the-socialist-republic-of-vietnam-to-the-agreement-on-the-common-effective-preferential-tariff-scheme-for-the-asean-free-trade-area/

Assarroudi, A., Nabavi, F. H., Armat, M. R., Ebadi, A., & Vaismoradi, M. (2018). Directed qualitative content analysis: The description and elaboration of its underpinning methods and data analysis process. *Journal of Research in Nursing, 23*(1), 42–55. https://doi.org/10.1177/1744987117741667

Bac Ninh Industrial Zones. (2022, April 25). *Samsung 14 years accompanying the development of Bac Ninh*. Bac Ninh Industrial Zones Authority. http://izabacninh.gov.vn/en/xem-tin-tuc/article-27/samsung-14-years-accompanying-the-development-of-bac-ninh-7368.html

Bac Ninh Portal. (2020). *Bac Ninh overview*. Bac Ninh Portal. https://www.bacninh.gov.vn/web/english/59/-/details/4790216/bac-ninh-overview

Bae, S., & Kang, H.-W. (2023, March 27). Samsung's Lee visits growth driver MLCC China plant. *KED Global*. https://www.kedglobal.com/korean-chipmakers/newsView/ked202303270001

Bair, J. (2005a). Global capitalism and commodity chains: Looking back, going forward. *Competition & Change, 9*(2), 153–180. https://doi.org/10.1179/102452905x45382

Bair, J. (2005b). From commodity chains to value chains and back again?. *New Haven, CT: Yale University*.

Bao Thai Nguyễn. (2021, September 5). Prime Minister visits and works with Samsung Thai Nguyen. *Báo Thái Nguyên*. https://en.baothainguyen.vn/202109/prime-minister-visits-and-works-with-samsung-thai-nguyen-367557B/

Baskaran, G., Hernandez-Roy, C., Ziemer, H., & Murgia, F. (2024). Latin America: The world's copper stronghold. *Center For Strategic & International Studies*. https://features.csis.org/copper-in-latin-america/

Bathelt, H. (2006). Geographies of production: Growth regimes in spatial perspective 3 – Toward a relational view of economic action and policy. *Progress in Human Geography*, *30*(2), 223–236. https://doi.org/10.1191/0309132506ph603pr

Baum, J. A., & Dutton, J. E. (1996). Advances in strategic management: The embeddedness of strategy.

BBC News. (2024, October 23). *Vietnam media guide*. https://www.bbc.com/news/world-asia-pacific-16567840

Blažek, J., & Lypianin, A. (2022). What drives the economic performance of suppliers in global value chains/global production networks–tier, ownership, size, specialization, or region? *Norsk Geografisk Tidsskrift-Norwegian Journal of Geography*, 76(5), 255–269. https://doi.org/10.1080/00291951.2022.2150303

Blažek, J., & Steen, M. (2022). Global production networks and regional innovation systems: contrasting or complementary policy implications? *European Planning Studies*, *30*(10), 2043–2062. https://doi.org/10.1080/09654313.2021.2021145

Bondarenko, P. (2024, October 18). Samsung | History & Facts. *Britannica*. https://www.britannica.com/money/Samsung-Electronics/Samsung-as-a-global-company

Bonelli, R., & Pinheiro, A. C. (2005). New export activities in Brazil: Comparative advantage, policy or self-discovery? *Inter-American Development Bank, Research Department*. https://doi.org/10.18235/0006866

Breul, M., & Diez, J. R. (2018). An intermediate step to resource peripheries: The strategic coupling of gateway cities in the upstream oil and gas GPN. *Geoforum*, *92*, 9-17. https://doi.org/10.1016/j.geoforum.2018.03.022

Bryson, J. R., & Vanchan, V. (2020). COVID-19 and alternative conceptualisations of value and risk in GPN research. *Tijdschrift voor economische en sociale geografie, 111*(3), 530–542. https://doi.org/10.1111/tesg.12425

CafeF. (2016, August 29). Việt Nam trở thành thiên đường giúp Samsung tiết kiệm hàng tỷ đô tiền thuế [Vietnam becomes a "paradise" that helps Samsung save billions of dollars in taxes]. *CafeF*. https://cafef.vn/viet-nam-tro-thanh-thien-duong-giup-samsung-tiet-kiem-hang-ty-do-tien-thue-20160829113717395.chn

Castree, N., Coe, N., Ward, K., & Samers, M. (2003). *Spaces of work: Global capitalism and geographies of labour*. SAGE Publications.

Chang, S.-J. (2011). *Sony vs Samsung: The inside story of the electronics giants' battle for global supremacy*. Wiley.

Chaponniere, J.-R., Cling, J.-P., & Zhou, B. (2010). Vietnam following in China's footsteps: The third wave of emerging Asian economies. In *Southern engines of global growth* (pp. 114–134). OUP Oxford. https://doi.org/10.1093/acprof:oso/9780199580606.003.0006

Chi K. (2015, October 16). Public disagrees with MOIT on calling Samsung products 'Vietnamese.' *VietNamNet.* https://vietnamnet.vn/en/public-disagrees-with-moit-on-calling-samsung-products-vietnamese-E143647.html

Chiang, D., & Wu, V. (2024, May 15). Why is Samsung struggling in the Chinese market? *DigiTimes*. https://www.digitimes.com/news/a20240515PD212/samsung-china-mobile-devices-ai-foldable-smartphone.html

Chirot, D., & Hall, T. D. (1982). World-system theory. *Annual Review of sociology*, *8*, 81–106. https://doi.org/10.1146/annurev.so.08.080182.000501

Choi, D. S., Mitchell, P., & Palihawadana, D. (2008). Exploring the components of success for the Korean chaebols. *Journal of Business & Industrial Marketing, 23*(5), 311–322. https://doi.org/10.1108/08858620810881584

Coe, N. M., Hess, M., Yeung, H. W.-C., Dicken, P., & Henderson, J. (2004). 'Globalizing' regional development: A global production networks perspective. *Transactions of the Institute of British Geographers, 29*(4), 468–484. https://doi.org/10.1111/j.0020-2754.2004.00142.x

Coe, N. M., Dicken, P., & Hess, M. (2008). Global production networks: Realizing the potential. *Journal of Economic Geography, 8*(3), 271–295. https://doi.org/10.1093/jeg/lbn002

Coe, N. M., & Yeung, H. W.-C. (2015). *Global production networks: Theorizing economic development in an interconnected world*. Oxford University Press.

Coe, N. M., & Yeung, H. W.-C. (2019). Global production networks: Mapping recent conceptual developments. *Journal of Economic Geography, 19*(4), 775–801.

Companies Market Cap. (2024). *Samsung revenue*. Companies Market Cap. https://companiesmarketcap.com/samsung/revenue/

Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing, 26*(3), 623–630. https://doi.org/10.1046/j.1365-2648.1997.t01-25-00999.x

Curran, L., Nadvi, K., & Campling, L. (2019). The influence of tariff regimes on global production networks (GPNs). *Journal of Economic Geography, 19*(4), 873–895. https://doi.org/10.1093/jeg/lby059

Dallas, M. P., Ponte, S., & Sturgeon, T. (2019). Power in global value chains. *Review of International Political Economy, 26*(4), 666–694.

D'Allura, G., Galvagno, M., & Mocciaro Li Destri, A. (2012). Regional innovation systems: a literature review. *Business Systems Review, 1(1), 139–156.*

Dang, D. T. K., & Lee, C. (n.d.). *Evidence from Samsung Vietnam* [Report]. World Bank. https://thedocs.worldbank.org/en/doc/066f80bf77301b1f5933386d1c234a4c-0360012024/related/20240613-WorldBank-KDIS-DANG-Thi-Kim-Dung.pdf

De Marchi, V., & Alford, M. (2022). State policies and upgrading in global value chains: A systematic literature review. *Journal of International Business Policy, 5(1), 88-111. https://doi.org/10.1057/s42214-021-00107-8*

Delve, Ho, L., & Limpaecher, A. (2023, November 14). The practical guide to qualitative content analysis. *Delve*. https://delvetool.com/blog/guide-qualitative-content-analysis

Derluguian, G., & Harris, K. (2015). *World-Systems Analysis*. Oxford bibliographies. https://www.oxfordbibliographies.com/display/document/obo-9780199756384/obo-9780199756384-0066.xml

Dicken, P. (2015). *Global shift: Mapping the changing contours of the world economy* (7th ed.). Guilford Publications.

Dicken, P., Kelly, P. F., Olds, K., & Yeung, H. W.-C. (2001). Chains and networks, territories and scales: Towards a relational framework for analysing the global economy. *Global Networks, 1*(2), 89-112. https://doi.org/10.1111/1471-0374.00007

Dunne, B., Pettigrew, J., & Robinson, K. (2016). Using historical documentary methods to explore the history of occupational therapy. *British Journal of Occupational Therapy, 79*(6), 376-384. https://doi.org/10.1177/0308022615608639

Duong, M., Holmes, M. J., & Strutt, A. (2021). The impact of free trade agreements on FDI inflows: the case of Vietnam. *Journal of the Asia Pacific Economy*, *26*(3), 483–505. https://doi.org/10.1080/13547860.2020.1765717

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kzngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open, 4*(1), 1–10.

Enright, M. J. (2017). FDI in China: Samsung case study. *Hinrich Foundation*. https://www.hinrichfoundation.com/media/s04iyovs/hinrich-foundation-fdi-in-china-samsung-case-study-9-5-17.pdf

Ernst, D. (2000). *The economics of the electronics industry: Competitive dynamics and industrial organization.* Honolulu East-West Center.

Ernst, D. (2003). *Pathways to innovation in the global network economy: Asian upgrading strategies in the electronics industry*. Honolulu East-West Center.

Fernandez-Stark, K., & Gereffi, G. (2019). Global value chain analysis: A primer. In *Handbook on global value chains* (pp. 54-76). Edward Elgar Publishing. https://doi.org/10.4337/9781788113779.00008

Flick, U. (2018). *An introduction to qualitative research*. Sage.

Foresman, C. (2009, January 30). *iPhone passes 1 percent goal for 2008, looking good for 2009.* Ars Technica. https://arstechnica.com/gadgets/2009/01/iphone-passes-1-percent-goal-for-2008-looking-good-for-2009/#:~:text=According%20to%20data%20recently%20released,Samsung%2C%2016.2%25

Francis, S. (2018). India's electronics manufacturing sector. *Economic and Political Weekly, 53*(34), 112–117.

Freeman, N. J., & Hew, D. (2002). Introductory overview: Rethinking the East Asian development model. *ASEAN Economic Bulletin, 19*(1), 1–5. https://doi.org/10.1355/ae19-1a

Fridell, G., & Walker, C. (2019). Social upgrading as market fantasy: The limits of global value chain integration. *Human geography*, *12*(2), 1-17. https://doi.org/10.1177/194277861901200201

George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences* (BCSIA Studies in International Security). MIT Press.

Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. In *Commodity chains and global capitalism* (pp. 95–122). Praeger. https://doi.org/10.1017/9781108559423.003

Gereffi, G., & Korzeniewicz, M. (Eds.). (1994). *Commodity chains and global capitalism*. Praeger.

Gereffi, G. (1999). A commodity chains framework for analyzing global industries. *Institute of Development Studies, 8*(12), 1–9. https://eco.ieu.edu.tr/wp-content/Gereffi_CommodityChains99.pdf

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy, 12*(1), 78–104. https://doi.org/10.1080/09692290500049805

Gereffi, G. (2009). Development models and industrial upgrading in China and Mexico. *European Sociological Review, 25*(1), 37–51. https://doi.org/10.1093/esr/jcn034

Gereffi, G. (2013). Global value chains in a post-Washington Consensus world. *Review of International Political Economy*, *21*(1), 9–37. https://doi.org/10.1080/09692290.2012.756414

Gerstlberger, W. (2004). Regional innovation systems and sustainability—selected examples of international discussion. *Technovation*, *24*(9), 749-758. https://doi.org/10.1016/s0166-4972(02)00152-9

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology, 91*(3), 481–510. https://doi.org/10.1086/228311

Grozier, B., & Keene, J. (2020). *Vietnamese development policy: Upgrading the domestic private sector through FDI linkages* (Doctoral dissertation, Harvard University).

Harrison, B. (1992). Industrial districts: Old wine in new bottles? *Regional Studies, 26*(5), 469-483. https://doi.org/10.1080/00343409212331347121

Henderson, J. (1989). *Globalisation of high technology production* (1st ed.). Routledge.

Henderson, J., Dicken, P., Hess, M., Coe, N., & Yeung, H. W.-C. (2002). Global production networks and the analysis of economic development. *Review of International Political Economy, 9*(3), 436–464. https://doi.org/10.1080/09692290210150842

Hess, M. (2004). 'Spatial' relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography, 28*(2), 165–186. https://doi.org/10.1191/0309132504ph479oa

Hobday, M. (2001). The electronics industries of the Asia–Pacific: Exploiting international production networks for economic development. *Asia-Pacific Economic Literature, 15*(1), 13–29. https://doi.org/10.1111/1467-8411.00092

Hopkins, T. K., & Wallerstein, I. (1986). Commodity chains in the world-economy prior to 1800. *Review (Fernand Braudel Center)*, *10*(1), 157–170.

Horner, R. (2017). Beyond facilitator? State roles in global value chains and global production networks. *Geography Compass*, *11*(2). https://doi.org/10.1111/gec3.12307

HP Development Company. (2019). HP Product Material Content Information. *HP Development Company*. https://h20195.www2.hp.com/v2/getpdf.aspx/c05117791.pdf

Hsiao, J. (2023, March 20). *Samsung develops closer connection in Vietnam than in India, according to DIGITIMES Research.* DIGITIMES. https://www.digitimes.com/news/a20230316VL207/digitimes-research-india-meet-the-analyst-samsung-southeast-asia-vietnam.html&chid=2

Huang, H. (2023). Samsung's reconstruction of its global production networks: From China to Vietnam, from Vietnam to diversification. *New Zealand Asia Institute Briefing Note*. https://www.auckland.ac.nz/assets/business/nzai-briefing-note-2023.pdf

Hudson, R. (2001). *Producing places*. Guilford Press.

Human Rights Watch. (2024). *Vietnam: False claims on labor rights*. https://www.hrw.org/news/2024/05/08/vietnam-false-claims-labor-rights

Hwang. (2021). "델타 못들어오게"…공장에서 자는 삼성·애플 베트남 직원들 ["Delta can't come in"... Samsung and Apple Vietnamese employees sleeping at the factory]. *MoneyToday.* https://news.mt.co.kr/mtview.php?no=2021070708414414359

IDC. (2024, January 15). *Apple Grabs the Top Spot in the Smartphone Market in 2023 along with Record High Market Share Despite the Overall Market Dropping 3.2%, According to IDC Tracker.* IDC. https://www.idc.com/getdoc.jsp?containerId=prUS51776424

ILO. (2022). *Viet Nam's electronics supply chain: Decent work challenges and opportunities*. International Labour Office.

Isaksen, A., Tödtling, F., & Trippl, M. (2018). Innovation Policies for regional Structural change: combining Actor-Based and System-Based strategies. In *Springer eBooks* (pp. 221–238). https://doi.org/10.1007/978-3-319-71661-9_11

IT Edge News. (2024). Rise of Chinese smartphone vendors: Xiaomi, Vivo, and Oppo shipments jumped by 14% to 180m H1 2024. *IT Edge News*. https://www.itedgenews.africa/rise-of-chinese-smartphone-vendors-xiaomi-vivo-and-oppo-shipments-jumped-by-14-to-180m-h1-2024/

Japan External Trade Organization. (2013). *The 23rd survey of investment related costs in Asia and Oceania.* https://www.jetro.go.jp/ext_images/en/reports/survey/pdf/2013_05_01_biz.pdf

Kano, L. (2018). Global value chain governance: A relational perspective. *Journal of International Business Studies, 49*(5), 659–683.

Kaplinsky, R. (2010). The role of standards in global value chains. *World Bank policy research working paper*, (5396). https://doi.org/10.1057/s41267-017-0086-8

Kelly, P. F. (2013). Production networks, place and development: thinking through global production networks in Cavite, Philippines. *Geoforum*, *44*, 82–92. https://doi.org/10.1016/j.geoforum.2011.10.003

Kikuchi, T., Yanagida, K., & Vo, H. (2018). The effects of mega-regional trade agreements on Vietnam. *Journal of Asian Economics, 55,* 4–19. https://doi.org/10.1016/j.asieco.2017.12.005

Kim, J. (2023). S. Korea relies heavily on Samsung Elec for R&D spending: FKI. *KED Global.* https://www.kedglobal.com/corporate-investment/newsView/ked202307250012

Kim, T. (2021). Attraction of foreign direct investment in agriculture. *Accounting, 7(*6), 1407–1416. https://doi.org/10.5267/j.ac.2021.3.024

Kim, Y.-S. (1997). Technological capabilities and Samsung's international production strategies in East Asia. *Berkeley Roundtable on the International Economy*. https://brie.berkeley.edu/sites/default/files/wp106.pdf

Kogut, B. (1985). Designing global strategies: Comparative and competitive value-added chains. *Sloan Management Review, 27(*1), 27–38.

Koo, Y., & Kim, S. (2022). 'Follow sourcing' and the transplantation and localization of Korean electronics corporations in northern Vietnam. *Area Development and Policy, 7*(4), 380–403. https://doi.org/10.1080/23792949.2022.2058569

Korea IT News. (2022, November 4). Samsung phones, cutting production in Vietnam by 40%. *ETNews*. https://english.etnews.com/20221104200001

Kucera, D., & Barcia de Mattos, F. (2019). Automation, employment, and reshoring: case studies of the apparel and electronics industries. *Comp. Lab. L. & Pol'y J.*, *41*, 235.

Kumar, R., & Beerepoot, N. (2021). Matching global service standards—the role of intermediaries in economic upgrading of support-service firms in global production networks. *Journal of Economic Geography, 21*(6), 899–923. https://doi.org/10.1093/jeg/lbaa039

Latour, B. (1997). On actor-network theory: A few clarifications. *Soziale Welt, 47(*4), 369–381.

Le, L. (2021). Samsung's factory workers kept the world's electronics running during the pandemic. But at what cost? *Rest of World*. https://restofworld.org/2021/samsung-worker-factories-pandemic/

Lee, S. C., Lee, K. B., & Ryu, J. Y. (2003). Technology transfer of foreign direct investment in China. *Geography*, *88*(4), 289-299. https://doi.org/10.1080/20436564.2003.12219892

Lee, K., & He, X. (2009). The capability of the Samsung group in project execution and vertical integration: Created in Korea, replicated in China. *Asian Business & Management*, 8(3), 277-299. https://doi.org/10.1057/abm.2009.9

Lee, K., & Jung, M. (2015). Overseas factories, domestic employment, and technological hollowing out: A case study of Samsung's mobile phone business. *Review of World Economics, 461*, 461–475. https://doi.org/10.1007/s10290-015-0219-8

Lee, K., & Kim, M. (2004). The rise of China and the Korean firms looking for a new division of labour. *KIEP Conference Paper.*

Marshall, A. (1920). *Principles of economics* (8th ed.). Macmillan.

Massey, D. (1995). *Spatial divisions of labour: Social structures and the geography of production*. Bloomsbury Publishing.

Mayring, P. (2014). Qualitative content analysis: Theoretical foundation, basic procedures and software solution. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-395173

Mayring, P., & Fenzl, T. (2016). Qualitative content analysis program QCAMAP—An open access text analysis software. *15th Biennial EARLI Conference for Research on*

Learning and Instruction. https://qualitative-content-analysis.org/wp-content/uploads/EARLI_2013_Paper_QCAmap.pdf

McGrath, S. (2018). Dis/articulations and the interrogation of development in GPN research. *Progress in Human Geography, 42*(4), 509–528. https://doi.org/10.1177/0309132517700981

Meda, P. (2021). How Samsung lost China. *Innovation Copilots.* https://www.icopilots.com/how-samsung-lost-china/

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey Bass.

Minh, T. (2016). RoK becomes the largest foreign investor in Vietnam. *Hanoi Times.* https://hanoitimes.vn/rok-becomes-the-largest-foreign-investor-in-vietnam-13286.html

Ministry of Natural Resources and Environment. (2023, July 30). Thủ tướng mong Samsung có thêm lãnh đạo, quản lý người Việt Nam [The Prime Minister hopes that Samsung will have more Vietnamese leaders and managers]. *Natural Resources and Environment Newspaper*. https://baotainguyenmoitruong.vn/thu-tuong-mong-samsung-co-them-lanh-dao-quan-ly-nguoi-viet-nam-361443.html

Ministry of Labour Vietnam. (2012). An toàn vệ sinh lao động ở Công ty TNHH Samsung Electronics Việt Nam [Occupational safety and health at Samsung Electronics Vietnam Co., Ltd]. *Ministry of Labour.* https://molisa.gov.vn/baiviet/16927?tintucID=16927

Mogalakwe, M. (2009). The documentary research method–using documentary sources in social research. *Eastern Africa social science research review*, *25*(1), 43-58. https://doi.org/10.1353/eas.0.0006

Morgan, H. (2022). Conducting a qualitative document analysis. *The Qualitative Report*, *27*(1), 64-77. https://doi.org/10.46743/2160-3715/2022.5044

Mu-Hyun, C. H. (2022). Samsung records highest revenue in 2021 with chip business leading profitability. *Z*DNET. https://www.zdnet.com/article/samsung-records-highest-revenue-in-2021-with-chip-business-leading-profitability/

Nadvi, K. (2008). Global standards, global governance and the organization of global value chains. *Journal of economic geography*, *8*(3), 323-343. https://doi.org/10.1093/jeg/lbn003

Neilson, J., Pritchard, B., & Yeung, H. W. C. (2014). Global value chains and global production networks in the changing international political economy: An introduction. *Review of International Political Economy, 21*(1), 1–8. https://doi.org/10.1080/09692290.2013.873369

Neilson, J., Pritchard, B., Fold, N., & Dwiartama, A. (2018). Lead firms in the cocoa–chocolate global production network: An assessment of the deductive capabilities of GPN 2.0. *Economic Geography, 94(*4), 400–424. https://doi.org/10.1080/00130095.2018.1426989

Newone. (2008). *Map of Bac Ninh*. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Map_of_Bac_Ninh.jpg

Nguyen, A. N., & Nguyen, T. (2007). Foreign direct investment in Vietnam: An overview and analysis of the determinants of spatial distribution across provinces. *Development and Policies Research Center*, MPRA Paper No. 192.

Nguyen, D. T. U., & Boudreau, J. (2016). Samsung makes Vietnam's farmers bigger earners than bankers. *Bloomberg*. https://www.bloomberg.com/news/articles/2016-10-05/samsung-turns-vietnam-s-farmers-into-bigger-earners-than-bankers

Nguyen, D. (2023). Samsung Vietnam: Where dreams come true. Vietnam *Investment Review.* https://vir.com.vn/samsung-vietnam-where-dreams-come-true-102739.html

Nguyen, D., Le, H.-L., & Bui, T. (2021). A multi-criteria assessment of industrial zones' attractiveness scores in Viet Nam. *Operations and Supply Chain Management, 14*(3), 387-398. https://doi.org/10.31387/oscm0460310

Nguyen, L. P. (2006). *Foreign direct investment in Vietnam: Impact on economic growth and domestic investment.* Centre for Regulation and Market Analysis.

Nguyen, M. (2011). Thăm nhà máy sản xuất điện thoại Samsung tại VN [Visiting Samsung phone factory in Vietnam]. *Mai Nguyen*. https://www.mainguyen.vn/tin-tuc/tin-tong-hop/tham-nha-may-san-xuat-dien-thoai-samsung-tai-vn

Nohria, N., & Ghoshal, S. (1997). *The differentiated network: Organizing multinational corporations for value creation*. Jossey-Bass.

Ock, K.-W., Kim, W., & Lee, J.-Y. (2019). Samsung has come under fire worldwide for its union-busting tactics. *Hankyoreh.* https://english.hani.co.kr/arti/english_edition/e_international/899427.html

OECD (2023, November 21). Multinational enterprises report low-taxed profit even in jurisdictions with high corporate tax rates, underlining need for global tax reform. *OECD*. https://www.oecd.org/en/about/news/press-releases/2023/11/multinational-enterprises-report-low-taxed-profit-even-in-jurisdictions-with-high-corporate-tax-rates-underlining-need-for-global-tax-reform.html

Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(5 Pt 2), 1189–1208.

Payne G., & Payne, J. (2004). *Key concepts in social research.* Sage.

Peck, J., & Theodore, N. (2007). Variegated capitalism. *Progress in human geography*, *31*(6), 731–772. https://doi.org/10.1177/0309132507083505

Phillips, R., & Henderson, J. (2009). Global production networks and industrial upgrading: Negative lessons from Malaysian electronics. *Austrian Journal for Development Studies, 25(*2), 38–61. https://doi.org/10.20446/jep-2414-3197-25-2-38

Pickren, G. (2015). Making connections between global production networks for used goods and the realm of production: A case study on e-waste governance. *Global Networks, 15(*4), 403–423. https://doi.org/10.1111/glob.12071

Pike, A., Lagendijk, A., & Vale, M. (2016). Critical Reflections on ‘Embeddedness' in Economic Geography: The Case of Labour Market Governance and Training in the Automotive Industry in the North-East Region of England. In *Restructuring industry and territory* (pp. 59–82). Routledge.

Pieterse, J. N. (1988). A critique of world system theory. *International Sociology*, *3*(3), 251–266. https://doi.org/10.1177/026858088003003004

Plank, L., & Staritz, C. (2013). 'Precarious upgrading' in electronics global production networks in Central and Eastern Europe: the cases of Hungary and Romania. *SSRN Electronic Journal*, 1–28. https://doi.org/10.2139/ssrn.2259671

Polanyi, K. (1957). *The great transformation: The political and economic origins of our time.* Beacon Press.

Ponte, S., & Sturgeon, T. (2014). Explaining governance in global value chains: A modular theory-building effort. *Review of International Political Economy, 21(*1), 195–223. https://doi.org/10.1080/09692290.2013.809596

Ponte, S., Sturgeon, T. J., & Dallas, M. P. (2019). Governance and power in global value chains. In *Handbook on global value chains* (pp. 120–137). Edward Elgar Publishing.

QDA City. (n.d.). What is data triangulation? *QDA City.* https://qdacity.com/data-triangulation/

Quang Hoan, T. (2022). Vietnam's Participation in Global Value Chains: Achievements, Challenges and Policy Implications. In N. Truong & T. Vu (Eds.), *The Dragon's Underbelly: Dynamics and Dilemmas in Vietnam's Economy and Politics* (pp. 108–138). Chapter, ISEAS–Yusof Ishak Institute.

Ragin, C., & Chirot, D. (1984). The world system of Immanuel Wallerstein: Sociology and politics as history. In T. Skocpol (Ed.), *Vision and method in historical sociology* (pp. 276–312). University of Cambridge.

Raikes, P., Jensen, M. F., & Ponte, S. (2000). Global commodity chain analysis and the French filière approach: Comparison and critique. *Economy and Society, 29(*3), 390–417. https://doi.org/10.1080/03085140050084589

Raj-Reichert, G. (2011). The electronic industry code of conduct: Private governance in a competitive and contested global production network. *Competition & Change*, *15*(3), 221–238. https://doi.org/10.1179/102452911x13046725211292

Ravenhill, J. (2014). Global value chains and development. *Review of International Political Economy*, *21*(1), 264-274. https://doi.org/10.1080/09692290.2013.858366

Reuters. (2024a, September 23). Samsung invests $1.8 billion more in Vietnam OLED manufacturing plant. *Reuters*. https://www.reuters.com/technology/samsung-invests-18-billion-more-vietnam-oled-manufacturing-plant-2024-09-23/

Reuters. (2024b, July 19). Foxconn gets licence to invest $551 mln more in Vietnam, media reports. *Reuters.* https://www.reuters.com/technology/foxconn-gets-licence-invest-551-mln-more-vietnam-media-reports-2024-07-04/

Saigoneer. (2016, October 7). *Bac Ninh flush with Samsung Cash, but is it sustainable?* https://saigoneer.com/saigon-culture/154-saigon-society/development/8201-bac-ninh-flush-with-samsung-cash,-but-is-it-sustainable

Samsung Electronics. (2008). *Samsung Electronics 2008 Sustainability Report*. https://images.samsung.com/is/content/samsung/assets/global/ir/docs/2008EnvironmentalnsocialreportpdfSamsung Electronics. (2009a). *Samsung Electronics Sustainability Report 2009.* https://images.samsung.com/is/content/samsung/p5/global/ir/docs/2009EnvironmentalnsocialreportpdfSamsung Electronics. (2009b). *2008 Samsung Electronics Annual Report.* https://images.samsung.com/is/content/samsung/p5/global/ir/docs/SE2008_eng_final.pdf

Samsung Electronics. (2015). *Samsung Electronics Sustainability Report 2015.* https://images.samsung.com/is/content/samsung/assets/global/our-values/resource/about-us-sustainability-report-and-policy-sustainability-report-2015-en.pdf

Samsung Electronics. (2023). *Samsung Electronics Sustainability Report 2023.* https://www.samsung.com/global/sustainability/media/pdf/Samsung_Electronics_Sustainability_Report_2023_ENG.pdf

Samsung Electronics. (2024). *Samsung Electronics 2023 business report*. https://images.samsung.com/is/content/samsung/assets/global/ir/docs/2023_4Q_Interim_Report.pdf

Samsung Newsroom. (2012a, May 23). History of Samsung (6): Entering the global marketplace 1981–1983. *Samsung Newsroom.* https://news.samsung.com/global/history-of-samsung-6-entering-the-global-marketplace-19811983

Samsung Newsroom. (2012b, June 20). *History of Samsung (10): The world's first dual deck VCR completed and massive Chinese production begins: 1988-1992*. https://news.samsung.com/global/the-worlds-first-dual-deck-vcr-completed-and-massive-chinese-production-begins-1988-1992/1000

Samsung Newsroom Vietnam. (2020). Samsung Việt Nam thăm và đánh giá kết quả tư vấn cải tiến doanh nghiệp tại tỉnh Bắc Ninh và khu vực phía Nam [Samsung Vietnam visits and evaluates the results of business improvement consulting in Bac Ninh province and the Southern region]. *Samsung Newsroom Vietnam*. https://news.samsung.com/vn/samsung-viet-nam-tham-va-danh-gia-ket-qua-tu-van-cai-tien-doanh-nghiep-tai-tinh-bac-ninh-va-khu-vuc-phia-nam

Seric, A., & Tong, Y. S. (2019, September 1). *'East Asian Miracle' through industrial production and trade lenses*. Industrial Analytics Platform. https://iap.unido.org/articles/east-asian-miracle-through-industrial-production-and-trade-lenses

Shafaeddin, M., & Pizarro, J. (2010). The evolution of value added in assembly operations: the case of China and Mexico. *Journal of Chinese Economic and Business Studies*, *8*(4), 373-397. https://doi.org/10.1080/14765284.2010.513176

Shaik, A. I. (2024, February 19). *Samsung has been world's biggest TV maker for 18 years in a row*. SamMobile. https://www.sammobile.com/news/samsung-world-biggest-tv-brand-18-years/

Sheldon, P., & Kwon, S. H. (2023). Samsung in Vietnam: FDI, Business–Government Relations, Industrial Parks, and Skills Shortages. *The Economic and Labour Relations Review*, *34*(1), 66–85. https://doi.org/10.1017/elr.2022.3

Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations: Volume One. London: printed for W. Strahan; and T. Cadell, 1776.

Sunley, P. (2008). Relational economic geography: a partial understanding or a new paradigm? *Economic geography*, *84*(1), 1–26. https://doi.org/10.1111/j.1944-8287.2008.tb00389.x

Storper, M. (1997). *The regional world: territorial development in a global economy*. Guilford press.

Sturgeon, T. J., & Zylberberg, E. (2016). *The global information and communications technology industry: Where Vietnam fits in global value chains* (Policy Research Working Paper No. 7916). World Bank Group. https://doi.org/10.1596/1813-9450-7916

Tarasov, K. (2023, June 12). *How Samsung became the world's No. 2 advanced chipmaker and set the stage for a U.S. manufacturing boom*. CNBC. https://www.cnbc.com/2023/06/09/samsungs-plans-to-catch-tsmc-in-semiconductor-manufacturing.html

Teixeira, T. (2024). Variegated forms of corporate capture: The state, MNCs, and the dark side of strategic coupling. *Global Networks, 24*(1). https://doi.org/10.1111/glob.12433

The World and Vietnam Report. (2024, June 26). *Conference was held to review MOU on tripartite cooperation to support enterprises in Bac Ninh*. https://en.baoquocte.vn/conference-was-held-to-review-mou-on-tripartite-cooperation-to-support-enterprises-in-bac-ninh-276469.html

Thrift, NJ., & Amin, A. (1992). Neo-marshallian nodes in global networks. *International Journal of Urban and Regional Research*, *16*, 571–587. https://doi.org/10.1111/j.1468-2427.1992.tb00197.x

Thuong, T. M. (2023). Analyzing and comparing distribution policies of Samsung and Huawei in Vietnam. *International Journal of Advanced Multidisciplinary Research and Studies*, *3*(1), 240-248.

Tibken, S. (2015, July 22). Schooling Vietnam: How tech companies are training the next wave of workers. *CNET*. https://www.cnet.com/tech/tech-industry/schooling-vietnam-how-tech-companies-are-training-the-next-wave-of-workers/

Tödtling, F., & Trippl, M. (2018). Regional innovation policies for new path development–beyond neo-liberal and traditional systemic views. *European Planning Studies*, *26*(9), 1779-1795. https://doi.org/10.1080/09654313.2018.1457140

Tomiyama, A. (2016, November 22). Uneasy quiet falls over Vietnam's Samsung town. *Nikkei Asia*. https://asia.nikkei.com/Business/Uneasy-quiet-falls-over-Vietnam-s-Samsung-town

Tong, Y.-S., Kokko, A., & Seric, A. (2019). Linking FDI and local firms for global value chain upgrading: Policy lessons from Samsung mobile phone production in Vietnam. *Inclusive and Sustainable Industrial Development Working Paper Series.* https://downloads.unido.org/ot/15/78/15784588/WP5.pdf

Trendforce. (2023, December 20). Samsung's and SK Hynix's potential expansion plans raise concerns – Major investments anticipated next year. *TrendForce*. https://www.trendforce.com/news/2023/12/20/news-samsungs-and-sk-hynixs-potential-expansion-plans-raise-concerns-major-investments-anticipated-next-year/

Trinh, N. H., & Nguyen, Q. A. (2015). The impact of foreign direct investment on economic growth: Evidence from Vietnam. *Developing Country Studies, 5(*20), 1–9.

Tuan, H. A. (2009). Doi Moi and the remaking of Vietnam. *Global Asia.* https://www.globalasia.org/v4no3/cover/doi-moi-and-the-remaking-of-vietnam_hong-anh-tuan

Truong, H. Q. (2022). Vietnam’s global value chains participation and policy implications for South Korea-Vietnam economic cooperation. *KIEP Research Paper, World Economy Brief*, 22-37. https://doi.org/10.2139/ssrn.4272026

Tung, N. (2023). Coupling investment attraction with IZ development. *Chamber of Commerce and Industry of Vietnam - VCCI.* https://en.vcci.com.vn/coupling-investment-attraction-with-iz-development

UNIDO. (2018). *Global value chains and industrial development: Lessons from China, South-East and South Asia.* https://www.unido.org/sites/default/files/files/2018-06/EBOOK_GVC.pdf

United Press International. (1996). Samsung opens Vietnam TV plant. *United Press International*. https://www.upi.com/Archives/1996/09/13/Samsung-opens-Vietnam-TV-plant/1609842587200/

Vietnam Chamber of Commerce and Industry. (2023). *Samsung Vietnam: Where dreams come true*. https://en.vcci.com.vn/samsung-vietnam-where-dreams-come-true

Vietnam Investment Review. (2017, July 26). Samsung Sourcing Fair 2017: more opportunities for local firms. *Vietnam Investment Review - VIR*. https://vir.com.vn/samsung-sourcing-fair-2017-more-opportunities-for-local-firms-50914.html

Vietnam Investment Review. (2020, September 22). Samsung Vietnam commits to supporting local suppliers. *Vietnam Investment Review - VIR*. https://vir.com.vn/samsung-vietnam-commits-to-supporting-local-suppliers-79434.html

Vietnam Investment Review. (2021, August 28). Samsung Vietnam helps local firms join global supply chain. *Vietnam Investment Review - VIR*. https://vir.com.vn/samsung-vietnam-helps-local-firms-join-global-supply-chain-87113.html

Vietnam Investment Review. (2022, August 26). Vietnam spent $50 billion importing computers, electronic products, and components. *Vietnam Investment Review.* https://vir.com.vn/vietnam-spent-50-billion-importing-computers-electronic-products-and-components-95925.html

Vietnam Investment Review. (2023, June 19). Samsung Vietnam: Where dreams come true. *Vietnam Investment Review.* https://vir.com.vn/samsung-vietnam-where-dreams-come-true-102739.html

Vietnam Law & Legal Forum. (2017, April 26). Current local administration system in Vietnam. *Vietnam Law & Legal Forum.* https://vietnamlawmagazine.vn/current-local-administration-system-in-vietnam-2244.html

Viet Nam News. (2019, June 20). Vietnamese firms join Samsung consultation programme. *Viet Nam News.* https://vietnamnews.vn/economy/521591/vietnamese-firms-join-samsung-consultation-programme.html

Viet Nam News. (2023, June 23). Industry Ministry, Samsung jointly train moulding technicians. *Viet Nam News*. https://vietnamnews.vn/economy/1550367/industry-ministry-samsung-jointly-train-moulding-technicians.html

Vietnamese Ministry of Planning and Investment. (2017). Báo cáo tổng kết hoạt động các mô hình Khu công nghiệp, Khu kinh tế [Summary report on models of industrial parks and economic zones].

VietnamPlus. (n.d.). Vietnamese supporting enterprises “growing up” with Samsung’s billion-dollar projects.*VietnamPlus*. https://www.vietnamplus.vn/special/samsung/vietnamese-supporting-enterprises-growing-up-with-samsung-s-billion-dollar-projects.html

VietnamPlus. (2012, September 25). *Samsung enjoys new tax incentives.* https://en.vietnamplus.vn/samsung-enjoys-new-tax-incentives-post39097.vnp

VietnamPlus. (2018, October 30). *PM asks Samsung to turn Vietnam into its biggest hub.* https://en.vietnamplus.vn/pm-asks-samsung-to-turn-vietnam-into-its-biggest-hub-post141011.vnp

VnEconomy. (2024, September 23). PM attended a conference to announce Bac Ninh province’s master plan for 2021-2030 period. *VnEconomy*. https://en.vneconomy.vn/pm-attended-a-conference-to-announce-bac-ninh-provinces-master-plan-for-2021-2030-period.htm

VnExpress. (2020, June 25). Cuộc tuyển dụng căng hơn thi đại học vào Samsung Việt Nam [The recruitment for Samsung Vietnam is 'more stressful than the university entrance exam']. *VnExpress*. https://vnexpress.net/cuoc-tuyen-dung-cang-hon-thi-dai-hoc-vao-samsung-viet-nam-4120397.html

Wallerstein, I. (1974). The Modern World-System I Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century, With a New Prologue.

Webb, H. (2022, November 16). *The global supply chain of a mobile phone*. Ethical Consumer. https://www.ethicalconsumer.org/technology/global-supply-chain-mobile-phone

White, K. P., Trybula, W. J., & Athay, R. N. (1997). Design for semiconductor manufacturing. Perspective. *IEEE Transactions on Components, Packaging, and Manufacturing Technology: Part C*, *20*(1), 58–72. https://doi.org/10.1109/3476.585145

Womack, J. P., & Jones, D. T. (1997). Lean thinking—banish waste and create wealth in your corporation. *Journal of the operational research society*, *48*(11), 1148-1148. https://doi.org/10.2307/3010314

Wong, C.-Y., Yeung, H. W.-c., Huang, S., Seung, J., & Lee, K. (2024). Geopolitics and the changing landscape of global value chains and competition in the global semiconductor industry: Rivalry and catch-up in chip manufacturing in East Asia. *Technological Forecasting and Social Change, 209*. https://doi.org/10.1016/j.techfore.2024.123749

Wong, M. (2006). Samsungisation or becoming China? The making of the labor relations of Samsung Electronics in China. In *Labour in Globalising Asian Corporations: A Portrait of Struggle* (pp. 65–105). Asia Monitor Resource Centre. http://www.socialcompas.com/wp-content/files/FULL%20PDF%20-Labour%20in%20Globalising%20Asian%20Corps.pdf#page=74

Xinhua. (2022, January 27). *Samsung Electronics' revenue hits record high in 2021.* https://english.news.cn/asiapacific/20220127/f4f4633041054e8689bb6c98be84c22e/c.html

Yang, C., & He, C. (2017). Transformation of China's ‘world factory’: Production relocation and export evolution of the electronics firms. *Tijdschrift voor economische en sociale geografie, 108*(5), 571–591. https://doi.org/10.1111/tesg.12222

Yang, D. Y.-r., & Coe, N. M. (2009). The governance of global production networks and regional development: A case study of Taiwanese PC production networks. *Growth and Change, 40*(1), 30–53. https://doi.org/10.1111/j.1468-2257.2008.00460.x

Yeung, H. W.-C. (1998). The Social-Spatial Constitution of Business Organizations: A Geographical Perspective. *Organization, 5*(1), 101–128. https://doi.org/10.1177/135050849851006

Yeung, H. W.-C. (2015). Regional development in the global economy: A dynamic perspective of strategic coupling in global production networks. *Regional Science Policy & Practice, 7*(1), 1–23. https://doi.org/10.1111/rsp3.12055

Yeung, H. W.-C. (2022). *Interconnected Worlds: Global Electronics and Production Networks in East Asia.* Stanford University Press.

Yin, R. K. (1994). *Case study research: design and methods (2nd ed.).* Thousand Oaks: Sage.

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6 ed.). SAGE Publications.

Yoo, S., & Lee, S. M. (1987). Management style and practice of Korean chaebols. *California Management Review, 29*(4), 95–110. https://doi.org/10.2307/41162133

Yusuf, S., Altaf, M. A., & Nabeshima, K. (Eds.). (2004). *Global production networking and technological change in East Asia* (Vol. 476). World Bank Publications.

Zhang, Y., & Wildemuth, B. M. (2016). Qualitative analysis of content. In B. M. Wildemuth, *Applications of social research methods to questions in information and library science.* Bloomsbury Publishing.

Zheng, Z. (2024). Rethinking the dynamic of global production networks: Integrate the influence of suppliers and towards a flexible strategy making causal mechanism. *Global Networks*, *24*(2). https://doi.org/10.1111/glob.12465

Appendix A. Coding guideline

Name	Definition	Anchor Example	Coding Rules
Value creation	Value creation refers to the generation of economic benefits through the labour process, as well as through technological rents gained via access to specific product or process technologies, and relational rents derived from inter-organizational links that enhance know-how transfer and collective learning. Additional forms of rent may arise from organizational attributes, trade policy advantages, and branding (Coe et al., 2004, p. 473; Kaplinsky, 1998).	"Samsungs operations also had a significant impact on employment. The majority of Samsung employees in Viet Nam were categorized as semi-skilled workers based on their education attainment levels: 89 per cent were high school graduates, 7 per cent had post-secondary or vocational qualifications and 4 per cent had undergraduate degrees and above." (Tong et al., 2019)	Within Samsungs production network in Bac Ninh: • Code any instance where the process of turning labour power into productive labour is described, including training, task allocation, or changes in labour practices. • Code any reference to worker competencies, skill levels, or qualifications related to the value creation process. • Code references to working conditions, wages, safety, and general labour conditions that influence productivity. • Code any discussion of the role of production technologies in improving productivity or transforming labour processes. • Code any reference to the generation of technological rent through (asymmetric) access to key production or process technologies • Code any reference to the generation of relational rent through inter-organizational linkages improving know-how transfer and collective learning.
Value enhancement	"Value enhancement essentially involves knowledge and technology transfer and industrial upgrading (from design and final production of commodities)" (Coe et al. 2004, p.474).	"At the inaugural Samsung Sourcing Fair in 2014, Samsung declared that it was prepared to source 91 parts locally for the Samsung Galaxy S4 mobile phone and 53 parts for its various tablet models (including batteries,	Within Samsungs production network in Bac Ninh: • Code if there is any evidence of collaboration between Samsung and suppliers aimed at transferring knowledge, enhancing product quality, increasing technology levels or evidence of organizational improvements.

		earphones, USB storage devices and data transmission cables). Over 200 domestic suppliers attending the event expressed their interest in supplying to Samsung, but upon assessment, none of them met Samsung's standards and requirements" (Tong et al., 2019).	• Code if labour processes require higher skills or if the demand for labour skills increases as a result of technological upgrades • Code if there is a direct or indirect influence of supranational or national institutions (ASEAN, government agencies, trade unions, employer associations) on value enhancement processes within Samsung´s production network. • Code evidence of regional institutions investing in developing the infrastructure and human resources required for value enhancement (e.g. highly stable power supply and skilled engineers for electronics production). • Code if adherence to standards (e.g., ISO, environmental, labour, or industry-specific standards) has demonstrably facilitated value enhancement (e.g., by improving market access, product quality, or operational efficiency). • Code if adjustments of local standards to those of Samsung or international organizations (e.g. on carbon-emission footprints) has demonstrably facilitated value enhancement (e.g. by improving market access, product quality, or operational efficiency). • Code if implementation of new standards (environmental, labour, or industry-specific standards) has demonstrably facilitated value enhancement (e.g. by improving market access, product quality, or operational efficiency).
Value capture	"Value capture refers to the ability of a region to retain and harness the economic benefits generated through value creation for its own development and prosperity" (Coe et al. 2004, p. 475)	"Samsung Electronics Co. and its affiliates have built a factory town with 45,000 young workers and hundreds of foreign component suppliers -- a miniature version of	Within Samsungs production network in Bac Ninh: • Code if local institutions or non-firm actors are observed to actively retain and channel resources gained through ties to Samsung´s GPN into investments that support long-

		the family-run chaebol conglomerates that dominate business back in Korea. The investment has been a windfall for businesses in Bac Ninh -- almost 2,000 new hotels and restaurants opened between 2011 and 2015 according to the provincial statistics office -- helping raise the province's per capita GDP to three times the national average" Nguyen & Boudreau (2016).	term regional development (e.g., infrastructure projects, schools, , or other critical services). • Code any mention of national or Bac Ninh provincial government policies, laws or negotiations with Samsung that affect property rights, ownership structures, fiscal incentives such as exemptions from corporate income tax, or the ability of Samsung to repatriate profits. • Code any mention of local actors or institutions asserting control over value generated in the production process • Code instances where the ownership structure of Samsung and local firms in Samsung's production network (foreign owned, domestically owned, or joint ventures) is discussed in relation to value capture within Bac Ninh. • Code if earnings of Samsung are reinvested in localized subsidiaries critical to a specific function in the global production network, such as new process technologies.

Appendix B. Coded passages

Reference Number and Source	Category Title	Coded passage
Reference 1 Source: Tong et al. (2019)	Value Creation	Samsungs operations also had a significant impact on employment. As of late 2017, the three Samsung subsidiaries SEV, SEVT and SEHC reported a total of 109,000 employees in Viet Nam, making the conglomerate one of the country's largest employers. The majority of Samsung employees in Viet Nam were categorized as semi-skilled workers based on their education attainment levels: 89 per cent were high school graduates, 7 per cent had post-secondary or vocational qualifications and 4 per cent had undergraduate degrees and above. An overwhelming 75 per cent of Samsung employees were female. Fourteen of Viet Nam's 54 recognised ethnic groups were represented in Samsungs workforce. About half of Samsungs 500 managerial staff members in Viet Nam (from the ranks of supervisors to heads of department) were Vietnamese. Samsung indicated that it planned to increase the share of Vietnamese managerial staff to 90 per cent of the total.
Reference 2 Source: Tong et al. (2019)	Value Creation	While Samsung did not reveal its wage data for Viet Nam, data at the national industry level suggest that wages increased substantially after the electronics giant's entry. The average annual wage of an employee in the office machinery, communication equipment and precision instruments industries was USD 1,280 in 2008, which was notably lower than the USD 1,650 recorded for the manufacturing sector as a whole. Wages in all industries have increased over the years, but the office machinery, communication equipment and precision instruments industries have seen faster wage increases than the manufacturing sector in general (Figure 4). In 2015, the average wage of an employee in the office machinery, communication equipment and precision instruments industries reached USD 3,830 (a 200 per cent increase from 2008), well above the USD 3,390 of an average employee in the manufacturing sector on the whole.
Reference 3 Source: Tong et al. (2019)	Value Creation	Beyond higher wages, Samsung also influenced working conditions in Viet Nam by implementing its internal guidelines on labour conditions, including freely chosen employment; prohibition of child labour; protection of underage workers; work hour management; occupational safety; and food, sanitation and housing. The guidelines were enforced by monitoring Samsung's own working environment as well as that of its suppliers. While no specific data were made available for Viet Nam, Samsung reported that it conducted an undisclosed number of on-site inspections and 290 third-party audits of all critical suppliers globally in 2016, with supplier compliance ranging from 83 per cent to 100 per cent for the labour condition factors evaluated.
Reference 4 Source: Tong et al. (2019)	Value Creation	In addition to the direct employment effects of the company's own operations in Viet Nam, Samsung has also had an indirect effect on Viet Nam through other foreign investors. This is because Samsung served as a catalyst for further FDI in Viet Nam, with its location decision attracting several of its regional and global suppliers (who were already part of its supply chains elsewhere) to Viet Nam to supply parts to Samsungs operations. Such patterns fit the behaviour of MNEs, which either rely on imported inputs from established suppliers abroad for their production plants or use a co-location strategy that requires established foreign input suppliers to follow them in investing abroad. Co-location reduces the costs and complexity of import sourcing. Both import sourcing and co-location render the entrance of domestic suppliers more difficult, but it at least boosts investment and local employment (Paus & Gallagher, 2008)

Reference 5 Source: Tong et al. (2019)	Value Creation	There are no data on aggregate employment in Samsungs FDI cluster, but one indication of the resulting indirect employment effects is the fact that the total number of employees in Viet Nams manufacturing sector rose by 55 per cent over the 2008-2015 period, reaching over 6 million workers. The office machinery, communication equipment and precision instruments industries accounted for 8 per cent of the manufacturing workforce by the end of 2015, compared to 3 per cent in 2008.
Reference 6 Source: Tong et al. (2019)	Value Capture	Despite Samsungs strong impact on Vietnamese employment and exports, its effect fell short of expectations in other areas. Specifically, the growth of local value added and the integration of local enterprises into Samsungs supply chain have been slow. Disaggregating Viet Nams gross exports of computers, electronics and optical equipment into value added content by national origin, data from the OECDs Trade in Value Added (TiVA) showed that the Vietnamese share of value added remained low during the first years following the establishment of SEV, despite rapidly increasing production and exports.
Reference 7 Source: Tong et al. (2019)	Value Creation	Foreign value added, i.e. the value of imported intermediate goods and services, accounted for 70 per cent of the export values of computers, electronics and optical equipment in 2008 as well as in 2011 (Figure 5). Although the value added generated in the country's electronics industry has increased in absolute terms, a continuously large share of the value-added accruing to foreign economies is problematic from the Vietnamese perspective. Vietnamese government officials estimated in 2017 that the value of goods and services procured locally by Samsung as a proportion of the value of goods produced by Samsung in Viet Nam was around 30 per cent. Samsungs own estimate of local content in 2017 was 40 per cent.6 In 2017, Samsung employed only five Vietnamese tier-1 suppliers of parts and components: all five were producing relatively low value-added packaging materials (in principle, cardboard boxes) for Samsungs mobile phones.
Reference 8 Source: Tong et al. (2019)	Value Enhancement	Although these firms benefitted from increased sales volumes as well as possibly some knowledge spillovers from Samsung, the overall impact on the domestic industry was limited.
Reference 9 Source: Tong et al. (2019)	Value Capture	In 2017, Samsung also reported a localization ratio of 57 per cent, but this measure represented the percentage of value added generated from its own production in Viet Nam that was retained locally (including reinvested profits).
Reference 10 Source: Tong et al. (2019)	Value Capture	Furthermore, the bulk of the so-called "domestic" value added was derived from direct domestic value added generated by the exporters, and indirect domestic value added supplied by upstream industries in Viet Nam. The bulk of this domestic value added was very likely accrued by local affiliates of foreign MNEs such as Samsung and the global suppliers that had followed Samsung to Viet Nam the value added from their production in Viet Nam was only considered domestic because their local affiliates were resident units from the national accounts perspective.
Reference 11 Source: Tong et al. (2019)	Value Enhancement	The lack of backward supply linkages (local sourcing) in Samsungs mobile phone production offers a useful glimpse at the micro level to understand some of the challenges related to Viet Nam s participation in GVCs. Attracting MNEs in high-tech industries does not suffice to generate the positive spillovers and demand multipliers necessary to create sustainable industrial development. Without strong supply linkages, there are few direct contacts between foreign MNEs and local firms, less learning and fewer spillover benefits and weaker prospects for upgrading and development of competitive local firms.
Reference 12 Source: Tong et al. (2019)	Value Capture	In 2014, Viet Nam News, the English language daily newspaper published by the government's news service, reported that Samsung had 67 tier-1 suppliers based in Viet Nam, most of which were local affiliates of foreign firms established to supply intermediate inputs to Samsung as part of a co-location strategy. The foreign firms were predominantly Korean (53), with Japanese at a distant second (7), and one firm each from Malaysia, Singapore and the UK (Viet Nam News, 18 December 2014). The report contrasted Samsungs figure of four tier-1 Vietnamese suppliers of paper packaging products (generally considered low-technology in nature compared with parts and components), alongside six other lower-tier Vietnamese suppliers. It was the first clear sign that low participation by local firms in Samsungs production was beginning to worry some Vietnamese policymakers and government officials, at a time of growing anxiety about overdependence of the economy s exports on a single company. Government officials sought assurance that Samsung was delivering value to the economy because its subsidiaries (SEV and SEVT) had been given the most generous incentives accorded to any FDI project in Viet Nam thus far. The two subsidiaries were given four years of corporate tax exemptions, followed by nine years with tax reductions, which meant that SEV only started paying corporate taxes at reduced rates in 2013 while SEVT was expected to do the same from 2018. When Samsung established an R&D centre in Hanoi, it demanded further incentives (including exemptions from land lease fees and import tariffs on R&D equipment, customs clearance between its manufacturing facilities and the R&D centre, and lower personal income tax for employees at the centre) (Thang et al., 2016).

Reference 13 Source: Tong et al. (2019)	Value Capture	Prior to this, the main objective of the governments FDI policies was to attract foreign investment in high-technology activities. When it introduced the Law on High Technology in 2008, the government offered high-technology enterprises temporary tax holidays, followed by preferential corporate income tax rates that were as low as 10 per cent (half of the established corporate income tax rate of 20 per cent in 2016). Viet Nam also abolished its dual pricing policy for basic infrastructure, which had previously allowed Vietnamese users to pay lower tariffs for services such as telephone installation, water, telecommunications and freight charges than foreign users. To facilitate investment flows, foreign exchange controls and regulations on transfers of capital and profits were relaxed, and investors were allowed to transfer capital and profits abroad without paying additional taxes after meeting their financial obligations to Viet Nam.
Reference 14 Source: Tong et al. (2019)	Value Enhancement	While the establishment of supply linkages between domestic and foreign firms featured in policy discussions, no specific legislation and policy framework was introduced at that time. Government officials report a discernible change after 2015, however, with the introduction of government decrees and national legislation providing policy support for domestic firms in supplying industries. The turning point was growing pressure from Vietnamese firms, which were subject to growing competition as a result of FDI entry in product as well as in factor markets, but still unable to benefit from the opportunities expected to follow with inflows of FDI. At the same time, it was believed that the economy should have the capacity to supply foreign MNEs. At that point, Viet Nam had an estimated 1,800 local firms in domestic upstream industries manufacturing three main types of intermediate goods: metal components (770 firms), plastic and rubber and components (420) and electrical-electronic components (610) (SIDEC, 2017).
Reference 15 Source: Tong et al. (2019)	Value Capture	Nonetheless, authorities had no immediate answers on the type of policy leverage they could use to effectively increase local firms' integration into Samsungs value chain. Some measures had already been introduced in previous years for example, the creation of a directory of Vietnamese firms supplying industries, online platforms to match buyers with potential domestic suppliers, and trade fairs where local firms could approach foreign MNEs but these were deemed inadequate (albeit useful).
Reference 16 Source: Tong et al. (2019)	Value Capture	Historically, Viet Nam has pursued a less aggressive local content policy than its neighbours in South East Asia. Since the launch of the Doi Moi reforms in the late 1980s, which aimed to combine planning with elements of a market economy akin to Chinas market socialism project, the government regularly updated its framework for FDI attraction. Its efforts gathered pace with Viet Nams accession to the WTO in 2007 and trade promotion initiatives through a series of subsequent plurilateral and bilateral trade agreements (16 signed and 4 under negotiation).7 In some sectors, domestic reforms even expanded market access for foreign firms beyond what was required by Viet Nams WTO commitments (Eurocham, 2016). A new unified Law on Investment was introduced in 2005 (to replace the Law on Foreign Investment and the Law on Domestic Investment Promotion) streamlining rules and procedures related to investment promotion and facilitation, with explicit guarantees against local content policy and other forms of foreign investor discrimination:
Reference 17 Source: Tong et al. (2019)	Value Creation	Given the limited possibilities to use formal regulation and performance requirements to guide Samsungs behaviour, the government opted for a more informal approach. Over the years, government leaders at both national and local level had been conducting regular high-level meetings with specific key foreign firms. The meetings served as a channel for foreign firms to provide feedback so officials could better facilitate their business and operations. Samsung was one of these key firms, and the Vietnamese had developed a good relationship with the company over time, having gone out their way on several occasions to accommodate Samsungs business and production needs. For example, when a Samsung factory's operations were affected by a fire, the provincial government quickly deployed its staff to help Samsung with loading so it did not miss its shipment schedule. The same provincial government also timed the planned shutdowns of its electricity supply facilities in a way that did not disrupt Samsungs production schedule. In 2016, the higher tariffs introduced by the Vietnamese government on steel imports from China (to protect local producers) raised the prices for specific steel plates that Samsung bought from the Korean steelmaker Poscos affiliates in China. Samsung appealed to the central government for a tariff revision, which subsequently translated into a waiver for steel plates
Reference 18 Source: Tong et al. (2019)	Value Enhancement	The authorities decided that these regular meetings could be also used to persuade Samsung and other foreign firms to opt for changes in areas deemed important by the government, including expectations for more local sourcing. With behind-the-scene meetings and open media statements as the primary channels—"moral suasion" using appeals and persuasion as opposed to the use of outright policy and threats—the government hoped to achieve its policy objectives without discouraging future inflows of FDI from incumbent investors. In retrospect, it seems that this approach succeeded in nudging foreign investors into playing a somewhat more active role in increasing the participation of local firms in their value chains.

Reference 19 Source: Tong et al. (2019)	Value Enhancement	Shortly after a key meeting with local officials in 2014, Samsung announced that it would collaborate with the Vietnamese government in holding an annual workshop, the Samsung Sourcing Fair, to which Vietnamese firms would be invited to showcase their product offerings. At these events, which have continued since 2014, Samsung has presented its sourcing policy and identified specific components that could be potentially outsourced, held meetings with interested domestic suppliers and provided guidance on the application process and requirements for becoming a Samsung supplier.
Reference 20 Source: Tong et al. (2019)	Value Enhancement	In September 2015, Samsung also introduced a new three-month technical consultation programme for existing and potential Vietnamese suppliers. Under the programme, Samsung deployed internal experts from the Republic of Korea to Vietnamese firms to help them improve their manufacturing processes. This typically involved initial technical assessments of the firms, followed by interviews and hands-on collaboration with key personnel on production floors to improve the firms manufacturing processes in a way that would meet Samsungs product and process standards. As of the end of 2017, Samsung had enrolled 26 firms in the consultation programme. Productivity at the participating firms improved as a result of the consultation programme. By Samsungs own estimates, productivity improved by 80 per cent while defects were reduced by nearly 50 per cent for the Vietnamese firms. Feedback from participating firm seven those that were already supplying to Samsung was similarly positive. Several stated that Samsung had not only carefully reviewed their production process but had also provided specific recommendations ranging from ways to create a clean production environment to controls of temperature and humidity in specific processes to remove any detected shortcomings
Reference 21 Source: Tong et al. (2019)	Value Enhancement	By mid-2017, the list of Vietnamese suppliers to Samsung had increased to 215, of which 25 were first-tier suppliers while the other 190 were second-tier suppliers. Of the 25 domestic tier-1 suppliers, 20 were providing services ranging from meal catering, recreational travel, cleaning and sanitation to security. As in the years before, the domestic tier-1 suppliers (with one additional firm compared to 2014) were supplying packaging products, while no local firms produced parts and components for Samsungs final products. At the time, Samsung declared its intention to increase the number of domestic tier-1 suppliers to 50 by 2020. However, the number of domestic tier-2 supplier domestic firms supplying to Samsungs foreign-owned tier-1 suppliers in Viet Nam had increased notably compared with 2014. The majority of local firms interviewed for this study were tier-2 suppliers.
Reference 22 Source: Tong et al. (2019)	Value Capture	Despite these encouraging results, Samsung insisted that it could not only rely on the efforts of foreign MNEs as a long-term solution for increasing local firms' participation in MNE's value chains. As stated by a senior Samsung executive: "Our technical consultation [for domestic firms in Viet Nam] is an exception. Samsung does not do that for other countries and the government keeps asking us to do more. But multinationals are here to make profits, we have to compete with many companies out there"
Reference 23 Source: Tong et al. (2019)	Value Enhancement	Samsung pointed to two fundamental issues in relation to the integration of local firms into their GVCs. First and foremost, they highlighted local firms weak productive and absorptive capabilities, which is a particularly acute problem in Viet Nam where most of the domestic private enterprises are relatively small and young due to historical reasons. To supply to Samsung, it is not sufficient to possess the technical capability to manufacture specific components and parts. The suppliers must also be able to produce inputs in large quantities and at competitive prices to consistently meet Samsung's quality standards and to have a short lead time from production to delivery, in line with Samsung's just-in-time (JIT) management routines. At the inaugural Samsung Sourcing Fair in 2014, Samsung declared that it was prepared to source 91 parts locally for the Samsung Galaxy S4 mobile phone and 53 parts for its various tablet models (including batteries, earphones, USB storage devices and data transmission cables). Over 200 domestic suppliers attending the event expressed their interest in supplying to Samsung, but upon assessment, none of them met Samsungs standards and requirements.
Reference 24 Source: Tong et al. (2019)	Value Enhancement	The second issue was related to Samsung's global production and sourcing strategy, which is common to many large MNEs. While Samsung generally prefers to have more than one supplier for any single input to reduce supply chain risk, there is a limit to what constitutes an optimal number of vendors: working with too many adds costs to supplier partnership and quality control management ("It is simply not possible for us to work with 100 vendors for one item", according to a Samsung executive). This is one reason why Samsung felt that it would be more feasible to increase the number of local tier-2 suppliers producing for the Korean tier-1 suppliers operating in Viet Nam. Four such foreign tier-1 intermediaries interviewed for this article confirmed that they had been encouraged by Samsung to use local suppliers, although without specific targets.
Reference 25 Source: Tong et al. (2019)	Value Enhancement	In their subsequent engagement with the government, Samsung and other foreign firms stressed that weak local firm capabilities should be addressed by domestic policy actions, focusing in particular on relevant vocational education programmes and science and technology

Reference 26 Source: Tong et al. (2019)	Value Enhancement	Moreover, foreign investors argued that the government should try to attract more FDI into the supplying industries to increase the likelihood of local firms integrating into GVCs as tier-2 suppliers. In November 2015, the government issued its single most important policy to date for domestic firms in the supplying industries, known as the Decree on Development of Supporting Industry (Decree of Government on Development of Supporting Industry 2015). The decree serves as the overarching framework that regulates policies and incentives in relation to domestic firms in supplying industries. It clearly identified product groups that were entitled to policy incentives and assistance to facilitate research and development, technology application and transfer, human resource development and marketing capabilities of domestic firms (Annex 2). Moreover, it highlighted the importance of linkages, with the stated objective to promote international cooperation in the supporting industry, especially among nations, territories, entities, multinationals and foreign groups with advanced science and technology, to attract investors and to create bond among organisations and individuals operating in the supporting industry both in Vietnam and overseas
Reference 27 Source: Tong et al. (2019)	Value Enhancement	It also explicitly mentioned the need for a Supporting Industry Development Programme (SIDP) which would, among others, foster firm competence in "supplying products to multinationals as well as domestic and foreign suppliers". The SIDP was officially introduced in early 2017, and involved key entities such as the Ministry of Trade and Industry, the Ministry of Finance, the State Bank of Vietnam and the Ministry of Planning and Investment. The programme's goal is to have supplier firms "serve domestic production and export, participate in global value chains, and connect supporting industry enterprises to become product suppliers for domestic and foreign customers" (Prime Minister's Decision Approving the Programme on Development of Supporting Industries 2017). Various targets have been set for supporting industries. Specifically, by 2020, domestic firms should account for 35 per cent of domestic demand (by domestic and foreign manufacturers operating in Viet Nam) for metal, plastic, rubber and electrical-electronic parts and components; this share shall increase to 65 per cent by 2025 (Annex 3). Once certified under the programme, domestic suppliers in priority industries (including electronics and other high-technology industries) would be eligible for various forms of subsidies and incentives. One of the key work streams under SIDP specifically mentions the need to target FDI in supplying industries in order to create more backward supply linkages for local firms. The government also established a Supporting Industry Enterprise Development Centre (SIDEC) under the Ministry of Industry and Trade to manage and coordinate policies for supporting industry firms. The local firms interviewed for this article had reservations about the implementation of the SIDP (none of them had been a recipient of past major government initiatives) but in principle welcomed the new policy initiatives. The firms argued that the SIDP should not only assist local firms in establishing new linkages with MNEs but should also help local firms with existing linkages in their further upgrading endeavours. The firms reported that while they had experienced initial spurts in technology and scale shortly after establishing indirect supply linkages with Samsung, productivity gains were one-off and not necessarily dynamic and continuous because technology constraints soon resurfaced. As the product cycle in the electronics industry is becoming shorter, the need for recalibration of technology and production workflows to meet specialized customer needs is increasing, pointing to a need for greater technical assistance and consultancy.
Reference 28 Source: Tong et al. (2019)	Value Enhancement	There are two reasons why seeking FDI by tier-1 suppliers still is a good bet for creating linkages. Tier-1 suppliers typically provide inputs in the form of specialized parts, which in turn consist of generic and specialized components. While local firms may not possess the skills to process and produce the specialized parts, a useful entry point for them is to focus on the manufacturing of more generic components (in line with the logic of fragmented production) before proceeding to the production of more complex products (in line with the logic of upgrading). The increase in Vietnamese tier-2 suppliers to Samsung between 2014 and 2017 exemplifies at least the first part of this process.
Reference 29 Source: Sturgeon & Zylberberg (2016)	Value Enhancement	But aside from significant job creation, much of the growth in hardware exports has been hollow from a technological learning and industrial upgrading point of view. Specifically, spillovers based on backward linkages between foreign investors and domestic supporting industry firms remain weak or non-existent.
Reference 30 Source: Sturgeon & Zylberberg (2016)	Value Capture	Samsung relies heavily on Korean suppliers that have co-located in Vietnam to produce intermediate inputs. Of the companys 67 suppliers in the country, only four are Vietnamese. They include Goldsun Packaging and Printing JSC (corrugated paper packaging materials), the Thang Long Packaging Production Export Import JSC (thin-film packaging), Viet Hung Packaging Company Ltd (corrugated paper packaging) and Nam A Company Ltd (packaging). The main reason has been the lack of clear understanding of most of the domestic firms of the conditions and requirements set by Samsung.

Reference 31 Source: Sturgeon & Zylberberg (2016)	Value Capture	The prominence of packing companies mentioned here is no accident. Packaging is one of the lowest value added inputs to any manufacturing operation. Fifty-three of Samsungs suppliers are from Korea, seven are from Japan, one is from Malaysia, one is from Singapore and one is from the United Kingdom.13 Thus, while the TiVA data states that 37 percent of the value of production for export is domestic, most of that accrues to global suppliers in Vietnam, with Vietnamese suppliers making up a negligible portion of total local content.
Reference 32 Source: Sturgeon & Zylberberg (2016)	Value Enhancement	Efforts to increase local content by local firms have largely failed. Last year, the Ministry of Industry and Trade announced that Samsung would source 91 parts for the Galaxy S4 and 53 parts for tablets from local suppliers. Targeted components included relatively simple parts: batteries, earphones, USB storage devices, insulation tape and parts of data transmission cables among others. Samsung held a workshop with the Vietnamese government and 200 local firms to see which of these components could be sourced locally. Samsung presented its purchasing policy for different components and had individual meetings with interested potential suppliers. Given that the phones and tablets being produced in Vietnam are in Samsungs high-end range, parts are complex and quality requirements are high (for example, phone cases are now made of precision-machined aluminum, not plastic). None of the 200 local firms was able to meet Samsungs requirements. Samsung next step will be to organize a workshop in which its tier 1 suppliers can meet with local firms to see if they can integrate them at a lower level in the supply chain. Interviews with various firms suggest that government efforts to create a support industry have been ineffective, and that they have been forced to develop the local supply base on their own.
Reference 33 Source: Sturgeon & Zylberberg (2016)	Value Enhancement	According to the Law on High Technologies, at least 5% of the workforce conducting R&D projects must have at least a university degree. Herein lies the laws principal limitation. Vietnam does not have the human capital necessary for firms to embark on large- scale R&D projects. The Samsung Vietnam Mobile R&D Center (SVMC) was established in 2012 and remains the company's largest R&D facility in Southeast Asia. In order to address the talent bottleneck, Samsung has channelled $2.5 million towards grants and scholarships at the Hanoi University of Science and Technology. Furthermore, it has agreed to provide $1.4 million in scholarships and laboratory equipment for students at the Posts and Telecommunications Institute of Technology (PTIT). While Samsung has invested heavily in university-led workforce development programs, one company executive claims that students leave universities unprepared to work at the SVMC. Thus, the company trains its new hires extensively to get them up to speed.
Reference 34 Source: Enright (2017)	Value Creation	The main reason for investments in Vietnam, as opposed to China, was labour costs roughly one-third of what was available in China after several rounds of government-imposed wage increases in China.
Reference 35 Source: Enright (2017)	Value Enhancement	Samsung was also investing aggressively in developing the Vietnamese workforce, making arrangements with local universities, providing study materials, sponsoring libraries, and digitizing content to make it available on Samsung smartphones (Tibken, 2015)
Reference 36 Source: Enright (2017)	Value Creation	Samsung had led the way for other Korean companies, some of which opened facilities in Vietnam to supply Samsung, and others that benefitted from Samsung paving the way in terms of negotiations with government, infrastructure, and business systems.
Reference 37 Source: Truong (2022)	Value Creation	In addition, attracting MNEs from Korea in high-tech industries is not sufficient to generate the positive spillover effects and demand multipliers nec-essary to create sustainable industrial development. If supply linkages are weak, there are few direct contacts between Koreas MNEs and Vietnamese firms, resulting in less learning, fewer spillover benefits, and weaker prospects for upgrading and developing competitive local firms.
Reference 38 Source: Samsung Electronics (2015)	Value Creation	Samsung Electronics mandates all supplier companies to operate with the same high environmental safety standards to which we hold ourselves. Managing productivity and workplace accidents are critical to operating effectively around the globe. Mr. Chulgoo Lee, vice president of HR, emphasized, "For the stable operation of our Vietnam manufacturing complex, partnership with the business partners is essential". Some local suppliers have facilities that meets high standards, but most do not. To this end, we have selected first and second tier suppliers and established improvement plans accordingly. The plan is designed to support the overall inspection of facilities, including firefighting, safety, and health care, on a quarterly basis. In addition, the environment safety managers from HQ visit local suppliers to consult and support them with improving environmental safety management.
Reference 39 Source: Samsung Electronics (2015)	Value Enhancement	Furthermore, Samsung regularly organizes meetings with supplier companies to foster exchange of the best Environment, Health & Safety(EHS) management practices with each other. Samsung also provides technical assistance to supplier companies to maintain a technically advanced, ethical and responsible supply chain.

Reference 40 Source: Samsung Electronics (2015)	Value Enhancement	To achieve our goal, Samsung has established various social contribution programs such as providing vocational training programs and scholarships. Since 2012, the company has implemented the Samsung Talent Program (STP) with Hanoi University of Science and Technology to nuture R&D talents who will lead the future of Vietnam. The students selected for the STP can take computer programming courses on android and java at the Samsung Labs which are equipped with the latest Samsung Electronics IT products. The best performing students are offered the intership at at Samsung Electronics R&D center (SVMC), with a focus on developing mobile software for Vietnam and Southeast Asia, located in Hanoi. Moreover, they will be offered job opportunities at Samsung Electronics upon successful completion of the internship. At present, approximately 1,200 software engineers, including 100 graduates of Post & Telecommunication Institute of Technology are working at SVMC. In 2014, we expanded partnerships with Vietnam National University and Hanoi and Post & Telecommunication Institute of Technology to offer STP program to over 420 university students. We are also planning to set up a scholarship fund with a total of USD 192.
Reference 41 Source: Samsung Electronics (2015)	Value Enhancement	The local employees of Samsung Electronics Vietnam Manufacturing Complex are helping to share the latest technology with the local communities. In 2014, Samsung established the "Vietnam Technical Education Center" (in partnership with Samsung Advanced Technology Training Institute) to offer IT technology instructor tranings to 130 local employees. Besides the training program, IT and software engineers from Korea HQ frequently visit Vietnam operation sites to share information on the latest technology from our products and services. To make it a diverse training program, the center plans to expand educational contents to include non-IT related technologies such as metal processing, automation, etc. About 80 in-house instructors completed the program in 2015, and the center is planning to offer program to 24,000 employees per year.
Reference 42 Source: Dang & Lee (n.d.)	Value Enhancement	Our TWFE and SCM analysis indicate that Samsung s entry had positive TFP spillover effects in the same industry and vertical spillover into upstream-industry firms. The effects are stronger after Samsung start ed a consultation program for local vendors.
Reference 43 Source: Dang & Lee (n.d.)	Value Creation	TFP spillover effects are stronger for new entrants rather than incumbents. Samsungs entry would have facilitated the formation of new enterprises with new techniques and practices
Reference 44 Source: Dang & Lee (n.d.)	Value Creation	However, we do not find a positive regional spillover effect in TFP but a positive effect on wages. This is consistent with our household study results.
Reference 45 Source: Sheldon & Kwon (2023)	Value Creation	Subnational governments in Vietnam and China have also largely failed to provide sufficient investment in local VET institutions to cater for the rising skills demands that their own FDI policies generate.
Reference 46 Source: Sheldon & Kwon (2023)	Value Creation	Reflecting this failure in part, VET schools and colleges in both countries have appeared unwilling or unable to adapt to and keep pace with the technological changes that FIEs bring. These factors generate conditions in which VET graduates are then not able to meet FIEs qualitative requirements produced by their high-level, advanced production systems
Reference 47 Source: Sheldon & Kwon (2023)	Value Creation	For Samsung, a sufficient and certain supply of cheap but sufficiently skilled manufacturing labour is a critical organisational resource on which the success of its vast FDI depends. In learning from its experiences in China, Samsung in Vietnam has therefore sought greater LLM stability and predictability in the industrial parks where it has focused its FDI. In particular, it has worked to minimise risks to its training investment from LLM skill shortages that encourage employee job hopping and employer poaching. If able to achieve this, it could more confidently undertake the substantial and necessary training required for its rapidly growing workforces of electronics assembly workers. To this end, it has therefore worked at reshaping its environment through developing and deepening crucial external relationships here, particularly with governments.
Reference 48 Source: Sheldon & Kwon (2023)	Value Creation	According to Tibken (2015, p. 4), a technology worker in Vietnam typically makes about a third as much as a Chinese employee , when comparing pay rates in Hanoi to those in Beijing. The Vietnamese population has a substantially younger age profile than Chinas and speaks English as the countrys de facto second language. These factors make for a cheaper, more adaptable, and amenable workforce

Reference 49 Source: Sheldon & Kwon (2023)	Value Capture	However, outside Hanoi and Ho Chi Minh City, this workforce has had very little experience in high-tech sectors. In the early decades of Vietnams opening up, the national government largely left responsibility for training these workers to FIEs bringing the new technologies with them. As a result, many of the LLM problems identified for FIEs in China including skills shortages, job hopping, and employer poaching have also emerged as serious challenges for FIEs in Vietnam
Reference 50 Source: Sheldon & Kwon (2023)	Value Creation	The administration of many public VET institutions comes under central as well as provincial government agencies, including other ministries and provincial Peoples Committees. (UNESCO-UNEVOC, 2018). As in China, education in Vietnam including VET has been very theory-based, top-down and lacking in sufficient practical, experiential, and flexible components. Thus, even after they graduate, VET students need additional training. This is where VET institutions run by and for leading global high-tech FIEs, like Samsung, have launched their own programmes to fill the gap in training their Vietnamese workers, a development that the Vietnam national government strongly encourages, including through providing material incentives (Tibken, 2015).
Reference 51 Source: Sheldon & Kwon (2023)	Value Creation	For Vietnam, Samsung is its largest source of FDI and exports and, more broadly speaking, a hugely successful FDI model, including through providing more advanced and generous employment conditions like free air-conditioned dormitory accommodation during a period of severe shortages of factory worker accommodation in industrial parks (Bac Ninh Industrial Zones, 2018
Reference 52 Source: Sheldon & Kwon (2023)	Value Creation	Samsungs dominant presence in Bac Ninh has also created spillover effects: indeed, a "Samsung effect". Its business expansion in northern Vietnam has generated increasing demand for modern, high-quality, integrated industrial parks. As well, it has created demand for high-quality and dependable supporting companies, including some 80 component manufacturers and suppliers (Kennemer, 2018).
Reference 53 Source: Sheldon & Kwon (2023)	Value Capture	Another has been perceptions of increasing difficulties in dealing with China's subnational and national governments (Jang, 2022; Jeong, 2022). In contrast, Samsung has found governments in Vietnam to be more adaptable and collaborative. Furthermore, by aligning its FDI foci with Vietnamese governments' modernisation and export goals, it has benefited greatly from the very favourable terms and conditions they have provided, substantially reducing Samsung's start-up and ongoing costs.
Reference 54 Source: Sheldon & Kwon (2023)	Value Capture	A major change that Samsung has sought in Vietnam in response to its experiences in China has been to influence the sectoral profiles of industrial parks in which it has invested. It wishes to avoid situations where Vietnamese authorities would pursue, for those parks, the sectoral specialisation strategy that had caused Samsungs subsidiary so much frustration in SIP. Instead, Samsung has sought sectoral diversity. For example, in YPIP, SEV and SDV are the only major electronics FIEs with substantial facilities there.
Reference 55 Source: Sheldon & Kwon (2023)	Value Capture	Furthermore, it has implanted alongside its leading subsidiaries, a constellation of their own Tier 1 component suppliers. These include other Samsung subsidiaries plus other Korea-based component suppliers tied to Samsung by relationships of monopsonic dependence
Reference 56 Source: Sheldon & Kwon (2023)	Value Capture	More recently, and in line with Vietnamese government goals, it has also energetically fostered the emergence of domestic Tier 1 suppliers, again tied to it through monopsonic dependence (Jeong, 2022).
Reference 57 Source: Sheldon & Kwon (2023)	Value Creation	Samsung has thus largely engineered out much of the potential LLM competition for skilled assembly workers during a period of serious, pervasive skill shortages across Vietnam. This has allowed it to invest in training its vast mass of assembly workers nearly three times the number it ever employed in China confident that it has greatly diminished damaging opportunities for job hopping and employee poaching.
Reference 58 Source: Sheldon & Kwon (2023)	Value Enhancement	In addition, Samsung has negotiated agreements with universities to advance the education and training of workers by allowing them to take free courses at night within Samsung factories. Courses involve studying languages such as English and Korean, as well as electronic engineering and accounting

Reference 59 Source: Sheldon & Kwon (2023)	Value Enhancement	As it has in China (Enright, 2017), as part of projecting itself as both a central and worthy contributor to Vietnams economic upgrading, Samsung has also provided large-scale practical support for technology transfer plus leadership in upgrading of work-force skills beyond its corporate walls. In this, it has often had active support from Koreas government. For example, in 2020, Samsung entered a 4-year agreement with Vietnams Ministry of Industry and Trade (MoIT) to train 200 moulding technicians. The intention is to support the development of Vietnams fundamental manufacturing industries. The agreement was for Samsung to hold two training courses every year
Reference 60 Source: Sheldon & Kwon (2023)	Value Enhancement	Samsungs upgrading initiatives focus particularly on the industrial parks it operates in and their surrounding provinces. These initiatives strongly support Vietnamese government goals of more rapid industrialisation, modernisation, and export growth. Thus, since 2014, Samsung in Vietnam has worked with MoIT on that ministry's goal to see an increase in the number of Vietnamese businesses join Samsungs production chains. Activities include workshops, exhibitions, and surveys. Indeed, the most senior executives within Samsung Vietnam have repeatedly and publicly committed it to being a leader in developing Vietnamese support industries
Reference 61 Source: Sheldon & Kwon (2023)	Value Enhancement	Since 2015, for example, SEV has organised a consultation programme for local Vietnamese enterprises in Bac Ninh to improve their productivity and ongoing effectiveness. It has also contributed via training and knowledge transfer to help local enterprises become more specialised, increase their labour productivity, reduce their operating expenses, and improve the quality and reliability. This "Samsung influence" has also encouraged the development of local SMEs within its production and support chains. Thus, the number of Samsungs Tier-1 Vietnamese vendors increased from four in 2014 to 29 in 2018. By then, SEV and SEVT localisation rates were at about 57%. Samsungs objective was to reach 50 Tier-1 Vietnamese vendors by 2020 (Communist Party of Viet Nam, 2019).
Reference 62 Source: Sheldon & Kwon (2023)	Value Capture	For Vietnamese governments, their relationship with Samsung clearly offers the prospect of rapid export growth, economic development, and the technological upgrading advantages of advanced-level FDI. However, importantly given the particularly relational nature of Vietnam's policy-making context (Fforde, 2022; Truong & Rowley, 2014), the content of these agreements meets perceived socioeconomic and political expectations of important party-state constituency groups at varying levels. Indeed, the business– government relations model that Samsung has co-developed in Vietnam has also produced important and highly visible (and publicised) Samsung FDI in CSR. These investments, particularly in the areas of education and training, seek to meet party-state constituent groups' expectations that have both material and ideological–ideational elements. The overall picture presented is that Samsung FDI brings not only world-leading knowledge, technology, and employment in advanced production sectors but also societal benefits that go well beyond the specific content, purpose, and locations of its FDI.
Reference 63 Source: Hsiao (2023)	Value Creation	Still, Chou clarified that most Vietnam-based suppliers collaborating with Samsung are engaged in low-level materials, plastic products, or packaging solutions, as there were no influential local EMS giants in Vietnam as in India, such as Dixon Technology, for Samsung to outsource part of its product manufacturing.
Reference 64 Source: ILO (2022)	Value Enhancement	At the provincial level, the authorities promote enterprise development and provide additional incentives to the FDI by implementing a number of measures, including supporting enterprises after investment, removing difficulties and obstacles for enterprises and reforming administrative procedures. For example, in September 2020, the provincial government of Bac Ninh signed a memorandum of understanding with the Samsung Group to support the development of local enterprises to become suppliers to Samsung through an improvement consultancy programme. The government of Bac Ninh has also, since 2015, collaborated with Korean experts to improve production processes of local enterprises and improve product standards. In 2017, some 29 local enterprises became component suppliers to Samsung as a result of this initiative, supplying optical discs, packaging and printing, precision moulds and plastic components (Samsung Newsroom 2017). It was reported that most businesses participating in this initiative improved their ability to compete in the supply chain of Samsung and other businesses. These are examples of initiatives that can improve quality and competitiveness goals and increase skill levels and value-added contribution over time. This can help to ensure that, in the future, the development of a local supplier base results not only on growth in value-added products and services but also higher skills, higher wages and improved working conditions.

Reference 65 Source: ILO (2022)	Value Capture	According to Pham et al. (2022, p. 258), Samsung Electronics Viet Nam uses only seven Vietnamese partners among its 93 suppliers, and these Vietnamese firms only provide low value-added activities such as packaging and printing while suppliers of high value- added are companies from South Korea or other ASEAN countries or foreign firms who have invested in Viet Nam. According to an official at the Department of Industry and Trade in Bac Giang province, a major location for electronics production, domestic suppliers find it difficult to enter the supply chain of large corporations due to insufficient investment capital, responsiveness to technology requirements, development policies, [and the] thinking of business leaders, etc. One of the causes of the limited development of Viet Nams domestic electronics sector is difficulties in the Governments picking winner policies (Pham et al. 2022). State-owned enterprises and multinational enterprises (MNEs) have been given more favourable conditions (land access, tax rates and so on) than domestic private enterprises.
Reference 66 Source: ILO (2022)	Value Creation	Vietnamese engineers are increasingly working for foreign enterprises such as Samsung. It was reported in 2016 that 1,700 Vietnamese high-skilled workers worked at Samsungs largest R&D centre in Southeast Asia, which it opened in Hanoi in 2012 (UNIDO 2018)
Reference 67 Source: ILO (2022)	Value Creation	The quality of education and data on advanced education attainment by the working population in Viet Nam, higher in comparison to neighbouring production countries, does not point necessarily to a lack of skilled workers in the country. Rather, it reiterates the assessment that the low-skilled nature of work in the electronics industry is due to the demands by the foreign electronics enterprises located in Viet Nam to supply global supply chains. As a representative from Bac Giang noted, "Workers in electronics enterprises are usually unskilled workers. Enterprises conduct short training courses in 12 weeks to meet job requirements. Therefore, enterprises do not have a need for workers to participate in vocational training" (interviews 2021).
Reference 68 Source: ILO (2022)	Value Creation	In Viet Nam, wages in the electronics industry are on average higher than the overall manufacturing sector. Data from the GSO Labour Force Survey shows that average monthly wages for wage and salaried workers in the electronics industry increased in the past decade from Vietnamese dongs 4.5 million (around US$197 in 2022) in 2011 to dongs 7.2 million (around US$315 in 2022) in 2021 (see figure 22).
Reference 69 Source: ILO (2022)	Value Creation	There is a gender pay gap in the electronics industry, which appears to have narrowed relatively quickly over the past decade. In 2010, the average wage for women was 51 per cent of that of men, and in 2021 it was 89.6 per cent (see figure 23). The wage gap for female workers in the electronics industry is smaller than for other industries and sectors in the whole economy.
Reference 70 Source: ILO (2022)	Value Capture	The continuing domination of the electronics industry by foreign enterprises also has its challenges in terms of economic development outcomes domestically. Ngoc and Binh (2019, p. 6) reported low local content use of domestically produced parts and components in final products assembled in Viet Nam. In 2016, domestic suppliers were able to meet only 30 to 35 per cent of inputs for electronic appliances and only 5 per cent for high-tech electronic products (Ngoc and Binh 2019). This "localization rate" is also lower than India and China (Can 2022). This means there is very low value-added or value capture by domestic suppliers (Gereffi 2019). The lack of strong supporting domestic industries results in a high dependence on imports of inputs, parts and components for the assembly of final products in the country. In 2019, the share of total value-added in the "computers, electronic and optical products" and " electrical equipment" industries was 2.2 per cent and in "telecommunications" only 1.1 per cent (Can 2022).
Reference 71 Source: ILO (2022)	Value Enhancement	There are few exceptions to the largely middle -skilled workers employed in the industry. Samsung and Intel are two large foreign enterprises that employ Vietnamese engineers in their R&D facilities. These MNEs have also invested resources in developing higher educated and qualified employees. Samsung, for example, has contributed US$2.5 million in grants and scholarships to Hanoi University of Science and Technology and US$1.4 million in scholarships and laboratory equipment to the Posts and Telecommunications Institute of Technology.
Reference 72 Source: The World and Vietnam Report (2024)	Value Capture	As of late 2023, there were 39 out of 340 Vietnamese suppliers joining Samsungs supply chain.

Reference 73 Source: The World and Vietnam Report (2024)	Value Enhancement	Vice Chairman of the provincial People's Committee of Bac Ninh Dao Quang Khai said cooperation programmes have proven effective, helping enterprises in Bac Ninh and domestic firms in general increase development opportunities and deeper integrate into global supply chains, thus promoting socio-economic development.
Reference 74 Source: The World and Vietnam Report (2024)	Value Enhancement	Becoming a vendor of Samsung in particular and large technology corporations in general means a turning point for businesses in Bac Ninh province. Samsung's strict requirements have helped businesses in the province have the basis to change and improve production capacity, labor productivity, and quality management systems to meet time, output, and quality requirements. quantity set by Samsung. From there, businesses in the province have the opportunity to find other big customers, creating conditions to expand production scale," Vice Chairman Dao Quang Khai commented.
Reference 75 Source: Vietnam Investment Review (2017)	Value Enhancement	Samsung Sourcing Fair 2017 has recorded transformation in quality with the participation and exhibitions of 26 enterprises which are expected to act as core agents to promote the development of supporting industries in Vietnam. 15 of the 26 participating enterprises were newcomers with great potential, nominated by the ministries and business associations. Speaking at the event, Samsung Vietnam Complex president Shim Won Hwan said this kind of exhibitions on supporting industries is considered the first official connection between Samsung and Vietnamese enterprises, in a series of activities supporting Vietnamese suppliers. “Enthusiastic participation along with the great determination of potential businesses in this 4th event gave us the impetus to continue implementing practical activities to help them improve their production and enhance their competitiveness. They will play a very important role as the core agents to turn individual gains into the general development of the Vietnamese supporting industries “, said Hwan.
Reference 76 Source: Vietnam Investment Review (2017)	Value Enhancement	After the event, Samsung plans to provide consultancy services to help these enterprises improve their production processes and reach Samsungs standards to supply products and components for Samsung Vietnams plants.
Reference 77 Source: Vietnam Investment Review (2017)	Value Enhancement	In Samsungs continuous efforts to connect Vietnamese enterprises to its global supply chain, besides Samsung Sourcing Fair, the consultancy programme with Korean experts also helps enterprises in their production improvement process and finalises standards in supplying products and components for Samsung factories. Actual results of enterprises reducing average error ratio by 25 per cent and increasing production capacity by 30 per cent prove the effectiveness and practicality of Samsungs business consultancy programmes.
Reference 78 Source: Vietnam Investment Review. (2017)	Value Capture	It is expected that the number of Samsungs Tier-1 vendors will increase to 29 in 2017. In addition, Samsung Vietnam has also recorded a significant breakthrough in raising the localisation rate of products from 35 per cent in 2014 to 57 per cent at present.
Reference 79 Source: Quang Hoan (2022)	Value Capture	Recognizing Samsungs importance, the Vietnamese government has maintained a good relationship with this group at both the national and local level. On several occasions this has gone beyond the governments normal treatment in order to accommodate Samsungs business and production needs. For example, when Samsungs factories were affected by a fire, the provincial government quickly deployed its staff to help with loading so Samsung would not miss its shipment schedule (Tong and Kokko 2019). The same provincial government also timed the planned shutdowns of its electricity supply facilities in a way that would not disrupt Samsungs production schedule. Another example took place in 2016. In order to protect local producers the government had imposed higher tariffs on steel imports from China, which increased the price of specific steel plates that Samsung bought from Korean steelmaker Poscos affiliates in China. Samsung appealed to the central government for a tariff revision, which was subsequently translated into a waiver for steel plates (ibid.).

Reference 80 Source: Quang Hoan (2022)	Value Enhancement	Government officials felt that regular meetings could be a useful channel to convince Samsung and other MNEs to make changes in important areas such as expectations for increasing local sourcing. Using both closed meetings and open media statements in addition to appeals and persuasion, instead of using outright policy and threats, the Vietnamese government aimed to achieve its policy objectives without affecting subsequent inflows of FDI from incumbent investors. Interestingly, the approach seems to have achieved some results in getting foreign companies to help improve the participation of local firms in their GVCs. For example, shortly after a key meeting with local officials in 2014, Samsung announced it would collaborate with the Vietnamese government in holding an annual workshop —namely, the Samsung Sourcing Fair—and the group would invite Vietnamese firms to present their product offerings. Since 2014, through these events, Samsung has announced its sourcing policy and identified specific parts and components with the potential to be outsourced. It has held meetings with interested local suppliers and provided instructions on the application process and requirements for becoming a Samsung supplier (Tong and Kokko 2019). Accordingly, as of 2016, the number of tier-1 Vietnamese suppliers had increased from 4 to 12, and the number of tier-2 Vietnamese suppliers had reached 178, bringing the total number of Vietnamese enterprises participating in Samsungs supply chain to 190 enterprises. The number of Vietnamese enterprises in the supply chain of two Samsung projects in Bac Ninh and Thai Nguyen (SEV and SEVT) reached 6 tier-1 suppliers and 155 tier-2 suppliers. For the projects of Samsung in Ho Chi Minh City (SEHC), there were 6 tier-1 suppliers and 23 tier-2 suppliers (Logistics4vn 2016).
Reference 81 Source: Quang Hoan (2022)	Value Capture	This can be seen clearly in Samsungs operations in Vietnam. Samsungs factories in Vietnam rely heavily on Korean suppliers that have co-located in Vietnam to produce intermediate inputs, or they depend on imports from Korea and third countries. As noted, despite the recent expansion, the number of Vietnamese local suppliers particularly tier-1 suppliers remains very low. In addition, most of these local suppliers provide only the lowest-value-added inputs to any manufacturing operation, such as packaging. Thus, while 38 per cent of the export value of computers, electronics and electric equipment in 2016 was generated domestically, most of that accrues to global suppliers in Vietnam
Reference 82 Tibken (2015)	Value Enhancement	The training program in universities in Vietnam is not suitable for working after graduation, said Pham Dong Phong, plant director of LG's factory in Haiphong, a port city in northeastern Vietnam. "After university, just having general knowledge to make it in an actual job is really difficult. To help close the knowledge gap, a number of global tech giants, including Samsung and LG, have launched their own programs to educate their Vietnamese workers. Their readiness to invest illustrates the country's appeal
Reference 83 Tibken (2015)	Value Creation	When hiring tens of thousands of workers in a developing country, it's difficult to find employees with extensive backgrounds in high-tech. Samsung assumes it will have to train all its workers, Dao said, and the company selects new hires based on their background and basic knowledge.
Reference 84 Vietnam Investment Review (2021)	Value Enhancement	Leaders of the northern province of Bac Ninh and Samsung Vietnam on August 26 made a trip to evaluate the results of the two enterprises including Hanpo Vina Joint Stock Company and Thinh Vuong Manufacturing and Trading Co Ltd participating in the "domestic business improvement consulting programme". This project was implemented by Korean experts of Samsung over about 10 weeks after assessing the actual production capacity of enterprises in Bac Ninh province. The projects' goal is to improve productivity
Reference 85 Vietnam Investment Review (2021)	Value Enhancement	Thinh Vuong Manufacturing and Trading Co Ltd is the first-tier supplier of Samsung Display Vietnams factory providing plastic display tray products. After the improvement, its NG, the mould replacement time and the loss rate incurred during the production process was reduced by 20 and 30 percent respectively. In addition, the company has also built a system of on-time delivery, sufficient quantity, and a quality control system from the production stage.
Reference 86 Source: Saigoneer (2016)	Value Capture	"Our lives have improved dramatically since Samsung came," ex- farmer Nguyen Thi Dung, who expects to earn roughly US$68,000 this year from renting rooms and selling groceries to Samsung workers, told the news outlet. In fact, some area residents are on track to earn more than the average banker in Vietnam.
Reference 87 Source: Saigoneer (2016)	Value Capture	Samsungs investment has created a breakthrough that spurred the economic growth of not only Bac Ninh but the nation & It has quickened the countrys industrialization, Nguyen Phuong Bac, head of a socioeconomic institute based in Bac Ninh, told the news source.

Reference 88 Source: Nguyen & Boudreau (2016)	Value Capture	Samsung Electronics Co. and its affiliates have built a factory town with 45,000 young workers and hundreds of foreign component suppliers -- a miniature version of the family-run chaebol conglomerates that dominate business back in Korea. The investment has been a windfall for businesses in Bac Ninh -- almost 2,000 new hotels and restaurants opened between 2011 and 2015 according to the provincial statistics office -- helping raise the provinces per capita GDP to three times the national average.
Reference 89 Source: Nguyen & Boudreau (2016)	Value Capture	Moving from rice paddy to production line gives farmers higher wages, social security benefits like a pension and sick leave, and job stability, said Brian McCaig, assistant professor of economics at Wilfrid Laurier University in Waterloo, Ontario, Canada. Workers send part of their earnings to their families, with remittances accounting for about 7 per cent of rural income in 2014, said McCaig, who has researched how export agreements lift Vietnamese out of poverty.
Reference 90 Source: Nguyen & Boudreau (2016)	Value Capture	Meanwhile the residents of Bac Ninh are reaping what they can from their South Korean windfall. Lans cousin, a former motorbike taxi driver, now supplies vegetables, eggs and meat to the cafeteria at the Samsung SDI factory, which operates around the clock. "My cousin just bought a piece of land for 1.2 billion dong ($54,000)", Lan said. He plans to build a motel on it.
Reference 91 Source: Huang (2023)	Value Capture	To maximise its production capacity in Vietnam, Samsung participates in the development of local small and medium enterprises. It works closely with Vietnams government to set up skills training and consultation programmes, improving labour productivity and the quality of the products. These actions aim to reduce its dependence on imported materials and to secure its production and supply chains. The new research centre in Hanoi is built to support the production of semiconductor chip grids, diversifying its semiconductor production networks and mitigating the impacts of Americas chip ban on China.
Reference 92 Source: Le (2021)	Value Creation	As shoppers in the West were told their gadgets would probably not arrive in time for Christmas this year, thanks to a global shortage of chips and snarled shipping ports, the Vietnamese government effectively gave factory owners an ultimatum: Shut down or find a safe way to isolate your workers from the rest of the population. Around the end of May, employees at Samsung Display in Vietnams industrial Bac Ninh province were given a similar choice: Stay home without shifts or move into a company-designated space and keep those jobs with a little extra pay, according to some workers, as an added sweetener.
Reference 93 Source: Le (2021)	Value Capture	Workers complained for two days. Then, they were moved onto the factory's premises. The lines between their workplace and home evaporated. For nearly three weeks, Nam slept with a blanket on a mattress in a warehouse alongside around 100 other male colleagues, moving between there, the company canteen and the production line in what felt like a twilight of unending work. His life revolved around screens. As the factory's main product, they gave him his livelihood. Come rest time, his attention would narrow into the device, the only way to connect with family and friends. This was Samsung Display feeling its way through one of the earliest examples of "three- on-site" a Covid-19 containment arrangement where workers work, eat, and sleep in the same area. More broadly, the Vietnamese government was under pressure to prove its zero Covid-19 strategy and assure foreign investors that its supply chain would continue to pump out products at speed, said Le Hong Hiep, senior fellow at the ISEAS-Yusof Shak Institute in Singapore. Samsung Display declined to comment for this article.
Reference 94 Source: Le (2021)	Value Creation	For the workers, the arrangements came at the price of extreme isolation, fatigue, and mind-numbing monotony. Those who spoke to Rest of World described a summer of seemingly endless labor, compounded by little sleep and no privacy. In those conversations, and publicly on TikTok and Facebook, they shared stories of constant queuing and controls, and workdays that ended asleep on mats, cardboard beds or in tents. "Those workers & probably saved the economy of Vietnam", said Julien Brun, managing partner at CEL, a supply chain consultancy based in Ho Chi Minh City. " Without [them], thered be just closed factories, no activity".
Reference 95 Source: Chi (2015)	Value Capture	Quyen went on to say that all the products made and assembled by Samsung and other FIEs in Vietnam are "Vietnamese" , and that the principle is stipulated in Vietnamese laws. Dr. Phuong Ngoc Thach, chair of the HCM City Economics & Management Studies Association, interviewed by Dat Viet, also said: "MOITs statement is not true, that Samsungs products are Vietnamese". When asked to explain his conclusion, he said: "The low localization ratios, low contribution to Vietnams GNP, and low content of technology transfer".

Reference 96 Source: Chi (2015)	Value Capture	"The lack of fairness in investment incentives is also a reason", he said, meaning that Samsung has been offered a lot of attractive investment incentives since it set foot in Vietnam, which Vietnamese enterprises have not. "Samsung was wise when it registered its investment in Vietnam as a foreign invested enterprise, enabling it to enjoy big investment incentives, but wants its products to be labeled as Vietnamese", he said.
Reference 97 Source: Chi (2015)	Value Capture	Lan warned that the label of "Vietnamese product" would have serious consequences, because Samsungs achievements would be wrongly considered as Vietnamese achievements. Thach agreed, saying it could lead to bad policies on economic development. "Vietnamese people may wrongly think they have achieved the goal of industrialization and modernization, while in fact, the goal is still far away", he said. Vietnam now calls on Vietnamese consumers to "buy Vietnamese". If Samsung products are considered Vietnamese, Vietnamese would be encouraged to use Samsung products. By encouraging Vietnamese to buy Samsungs products, MOIT just helps foreign invested enterprises make bigger profits. "Though MOIT considers Samsung products as "Vietnamese goods", the products must not be what Vietnamese can take pride in. "Samsung is just an enterprise that has its production in Vietnam. It is not a Vietnamese brand", he said.
Reference 98 Source: Tomiyama (2016)	Value Creation	The factory used to be so busy toward the end of the year, and the workers wouldn't come out until night, Nguyen Van Loi says as evening falls and employees shuffle out. He has been selling fruit here for six years, but his sales this month are down 30% from October. Just over a month has passed since Samsung halted production of the Galaxy Note 7 after a number of phones' batteries caught fire. Some workers at the Bac Ninh plant, which employs some 110,000 people, have been told to stay home. Others have seen their pay fall by half owing to a loss of overtime. "My pay has gone down by 40-50%," says Nguyen Thi Kieu Anh, a 19-year-old assembly line worker. She and other workers say they have been going home three hours earlier, at 5 p.m., since production of the Note 7 ended in mid-October. While the factory appears to have been spared layoffs so far, those consigned to waiting at home have had their pay reduced by 70%, employees say. New hiring to ready for the typical year-end rush also appears to have been halted. Nguyen Van Chien, who runs a nearby boarding house, said he now has 30 roomers compared with 50 last year. With his income down by a third, he is finding it hard to make ends meet, he said.
Reference 99 Source: Tomiyama (2016)	Value Capture	This is a worrisome prospect for Samsung's growing family of local suppliers, which totaled 160 as of June. A prolonged lull in production would also threaten the logistics providers that deliver smartphone components made in South Korea and China. "Trouble for Samsung leads directly to trouble for the Vietnamese economy," says Truong Dinh Tuyen, a former minister of commerce and industry.
Reference 100 Source: Tomiyama (2016)	Value Capture	Samsung plans to proceed with $3 billion in investments, including a new display factory, through 2020. But critics say the company's Vietnamese investments were bought with sweetheart deals, notably more than 10 years of tax breaks. The strength of Samsung's relationship with Hanoi may be in for its first real test.
Reference 101 Source: VietnamPlus (n.d.)	Value Enhancement	Meanwhile, the gap between the requirements of multinational corporations and the capacity of domestic manufacturing enterprises is still huge. A number of Vietnamese enterprises have participated in the supply of supporting industry products, but very few have long-term development strategies to make further investments in equipment, technology, management or human resources.
Reference 102 Source: VietnamPlus (n.d.)	Value Enhancement	However, facts show the development of the supporting industry in Vietnam needs a great deal of investment and support from the Government, and the determination of enterprises to produce and develop business strategies. As a Tier-2 vendor of plastic components to Samsung (the world's leading mobile phone manufacturer investing in Vietnam), Man Chi Trung, General Director of An Trung Industries, shared the difficulties of supplying other companies, but for Samsung it is even more challenging as this is global giant with extremely high requirement for product quality. Therefore, in order to join the supply chain, the parent company of An Phat Holdings (APH) which owns An Trung Industries, had to strive 200% to be able to meet all the requirements. According to the contract, An Trung Industries will officially supply components for Elentec starting from March 2019. These components will be used directly for the production of Samsung phones, contributing to bringing quality "Made in Vietnam" products to global customers. In order to do this, besides investing in technology, An Trung Industries also receives direct support from South Korean technical experts who have helped to supervise and share experiences in supplying partner -required products as as well as improving the production and management processes of enterprises in alignment with international standards. Elentec and Samsungs supplier selection criteria are Quality - Price - Time. These are the three most important requirements. once these are fulfilled, the hardships are removed, Man added.

Reference 103 Source: VietnamPlus (n.d.)	Value Enhancement	Additionally, the number of Tier-2 vendors also increased from 157 businesses in 2018 to 170 businesses in 2019. However, in order to become a Samsung supplier, all businesses, including foreign and Vietnamese enterprises, must actively prove their capacity and determination to participate in Samsung global value chain.
Reference 104 Source: VietnamPlus (n.d.)	Value Enhancement	Samsung commits to create equal opportunities with no difference for foreign and Vietnamese businesses when participating in the global supply chain and always strives to help Vietnamese businesses to exploit their potential through training programs for 200 Vietnamese consultants. Mr. Ngo Khai Hoan, Deputy Director of Industry Department (Ministry of Industry and Trade), said the collaborative project to train 200 Vietnamese consultants in 2018-2019 between the Ministry of Industry and Trade and Samsung is a remarkable way to create innovation for businesses participating in the global supply chain. After this program, many businesses have gained positive results, helping to increase their productivity and saving billions of Vietnam Dong. Typically, Rang Dong Plastic and Long An Plastic Joint Stock Company has made 62 improvements, especially reduced rolling machine replacement time from 105 minutes to 48 minutes
Reference 105 Source: VietnamPlus (n.d.)	Value Enhancement	Mr. Le Hong Sinh, General Director of Viet Filter Production Joint Stock Company, one of the enterprises participating in the Vietnamese consultants training program, said their company has been searching for solutions to improve productivity and quality but cannot implement them due to lack of experience. "After being guided by the consultants and figuring out our limitations, the company has implemented numerous improvements to enhance labor productivity, reduce inventories, and improve the working environment", Sinh said.
Reference 106 Source: Viet Nam News (2019)	Value Enhancement	Sixty Vietnamese enterprises have participated in a consultation programme supported by Samsung experts since 2015, helping to reduce their error rates and improve productivity. The information was released during a visit to three enterprises in the northern region conducted by Samsung Việt Nam and the Ministry of Industry and Trade on Tuesday as part of the programme. The companies that received visits were Hà Nội CNC Technology Investment and Development Company Limited (CNC Tech), Việt Chuẩn Joint Stock Company and Thiên Mỹ Vĩnh Phúc Company Limited. These enterprises all work in the field of plastic injection, moulding and plastic plating. After three months of consultations, CNC Tech has been able to achieve remarkable improvement, including a 97 per cent increase in productivity and increased production accuracy (contributing to inventory, delivery and loss analysis management).Through the programme, Việt Chuẩn has increased production output by 96 per cent and improved the customer complaint rate by 67 per cent. Việt Chuẩn has eliminated waste in the production process, stabilising its production line, reducing material costs and raising awareness about warehouse management efficiency.Choi Joo Ho, President of Samsung Việt Nam Complex, said: “This year we have been focusing on consulting and supporting high-tech enterprises and plastic injection moulding manufacturers, especially conducting in-depth consultation on moulds. This is a field that we are continuing to seek potential vendors and enhance consultation for Vietnamese enterprises to improve their capacity for further involvement.”
Reference 107 Source: Viet Nam News (2019)	Value Enhancement	This has been an annual activity since 2015 within the framework of Samsungs 12-week innovation consultation programme. In the programme, South Korean experts survey and evaluate business activities, provide direct consultation and work with the Vietnamese enterprises to improve production processes. They help finalise the standards for supply products and components and aid Vietnamese enterprises in joining Samsung's component supply chain. Since 2015, Samsung has carried out nine consultations for 54 enterprises.
Reference 108 Source: Viet Nam News (2019)	Value Capture	Samsung has a total of 308 suppliers. The number of Vietnamese enterprises supplying Samsung with parts has increased from four in 2014 to 35 by the end of 2018. It is expected to rise to 50 by the end of next year
Reference 109 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	This is a follow-up activity after 10 weeks of Korean experts surveying, evaluating and directly consulting, working with businesses to improve the production process and perfect standards in the supply of products and components to strengthen the capacity for businesses to be able to participate in the supply chain of components and accessories for Samsung.
Reference 110 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Visiting and evaluating the results of improvement consulting is an annual program since 2015, within the framework of Samsung's improvement consulting program. Along with the efforts to accompany the Vietnamese Government to improve the competitiveness of domestic supply enterprises in general across the country, up to now, Samsung has carried out improvement consulting for 260 Vietnamese enterprises.

Reference 111 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Recently, Samsung has implemented a project to support the training of 200 technicians for 4 years (2020 - 2023) in the field of molds to improve production capacity and mold autonomy for Vietnam's basic manufacturing industries. Through many years of searching, connecting and consulting to support Vietnamese businesses, the number of first-class suppliers of Samsung has increased sharply. If compared to only 4 first-class suppliers in 2014, by the end of 2019, there will be 42 businesses, expected to be 50 businesses by the end of 2020.
Reference 112 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Zion Plastic Joint Stock Company, operating in the field of plastic injection molding, is currently providing products not only to domestic FDI enterprises but also for export to foreign countries. After the improvement, the company increased equipment efficiency by 15%, increased labor productivity by 42%, reduced the process error rate by 46%, and reduced mold replacement time by 67%.
Reference 113 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Tran Thanh Co., Ltd, one of the largest carton packaging companies in the North, is currently supplying products to the SEV factory. After the improvement, labor productivity has been increased by 18%, the average error rate of stages has been reduced by 35%, optimization has decreased the distance within production by 50%.
Reference 114 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Smart Tech Vina Company is a first-class vendor of SEV factories, providing jig supplies and precision mechanics. After the improvement, the equipment performance has increased by 30%, the quality management efficiency has increased by 11%, and the optimal area of 37% of the factory.
Reference 115 Source: Samsung Newsroom Vietnam (2020)	Value Enhancement	Autotech Vietnam Machine Manufacturing Joint Stock Company is currently one of the major suppliers of automation machines for SDV factories, after improvement, it has reduced 34% of stage errors, increased 80% of useful usable area, 32% of warehouse area, 30% of electricity usage cost reduction.
Reference 116 Source: VietnamPlus (2012)	Value Capture	They are exempt from paying tax for their first four years of operation, and for the following 15 years they will pay a preferential income tax rate of 10 percent, compared to the normal 25 percent. The expansion project will be granted the same tax incentives that apply to newly-established projects, despite the Law on Enterprises declaring that tax incentives would not be given to expanded investment. The Prime Minister's decision came as a result of a petition from Samsung and the provincial authorities, who said that the company would face difficulties in carrying out its expansion project without the Government's support.
Reference 117 Source: VnExpress (2020)	Value Creation	GSAT is held twice a year in March-April, the time when students are preparing to graduate and September-October, when bachelors have obtained their degrees and are ready to go to work. The first GSAT took place in 2011, becoming a "filter" for this corporation to have high-quality human resources. GSAT 2020 marks a ten-year journey with 190,000 applications, nearly 60,000 exam participants and 14,000 employees recruited. Many of them later took on key positions of Samsung Vietnam.
Reference 118 Source: Hwang (2021)	Value Capture	The Vietnamese authorities are now working hard to protect such economic benefits. In addition to the installation of accommodation in the factory, the Vietnamese government has allocated some of the vaccines to factory workers. 400,000-doses of vaccines for Samsung Electronics employees and other global supplier employees with factories in Park Nin-sung and Park Jang-sung.
Reference 119 Source: Ministry of Natural Resources and Environment (2023)	Value Capture	Over the past 2 years, the Prime Minister has visited 4 times, worked at Samsung's facilities in Vietnam, 5 times met and exchanged with Samsung leaders. This affirms the Government's interest in non-state enterprises, including FDI enterprises
Reference 120 Source: Ministry of Natural Resources and Environment (2023)	Value Capture	The Prime Minister also said that the Vietnamese side is very aggressively directing the issue of housing for workers, people with middle income, including the implementation of a credit package of VND 120,000 billion, asking Samsung to actively participate in the implementation of this credit package. The Vietnamese side also hopes that the National Innovation Center in Hoa Lac will receive active support from Samsung's Research and Development Center in Hanoi, the two sides will closely cooperate for development.
Reference 121	Value Capture	Every year, Samsung contributes more than 10,000 billion VND to the state budget. Up to now, 51 Vietnamese businesses have become Samsung's first-class suppliers.

Source: Ministry of Natural Resources and Environment (2023)		
Reference 122 Source: Ministry of Natural Resources and Environment (2023)	Value Capture	With Bac Ninh, Samsung's investment activities (since 2008) have helped create breakthroughs in socio-economic development, budget revenue, economic restructuring, and employment solutions for the province. Bac Ninh's total domestic revenue in 2021 was 25,458 billion VND, 12.8 times more than in 2008. In the period of 2008-2021, the total revenue from taxes and fees of Bac Ninh province was nearly 136,500 billion VND, of which the revenue from Samsung Group was approximately 35,000 billion VND, accounting for 25% of the revenue of the province.
Reference 123 Source: CafeF (2016)	Value Capture	Some typical organizations and individuals with high tax payment rates, in accordance with regulations and higher than in 2022 such as: Samsung Electronics Vietnam Co., Ltd. paid VND 3,209 billion (up 15%)
Reference 124 Source: CafeF (2016)	Value Capture	Vietnam becomes a "paradise" that helps Samsung save billions of dollars in taxes. Two subsidiaries of Samsung Electronics in Vietnam achieved nearly VND 70,000 billion in profit in 2015. With the usual tax rate, it is true that these 2 companies have to pay about 13,000 billion in income tax. However, the actual amount paid is not equal to the odd part of this number.
Reference 125 Source: CafeF (2016)	Value Capture	According to data from the tax authorities cited by the domestic press, in 2015, Samsung Group's projects in Bac Ninh paid VND 1,684 billion in taxes to the state budget and SEVT company paid 950 billion VND. Meanwhile, in 2015, Samsung Electronics and its subsidiaries around the world paid nearly 5 billion USD in corporate income tax. The fact that Vietnam - the country that brings nearly 20% of Samsung's profits - is only entitled to a small amount of tax on the total amount of tax that Samsung has paid is clearly an inadequacy. Due to tax exemption, in recent years, Samsung has "saved" several billion USD in corporate income tax that must be paid. With a very low tax rate, Vietnam has really become a "tax haven" of this corporation. This is also the reason why Samsung is pouring more and more investment money as well as transferring many production activities to Vietnam.