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Climate Change Strategies in Institutional Perspectives: A Reflection on International Business and the Global Value Chain

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<a> Abstract

The changing roles of the United Nations and national institutions have made addressing climate change a critical concern for survival and growth in global business. This paper discusses how such institutions, which vary in their nature and characteristics, shape firm strategies for climate change adaptation. Exploring different versions of institutional theory, the chapter demonstrates how and why institutional characteristics affect firm climate change strategies for ownership, governance, capabilities, and internationalization. Climate change issues pose challenges to firms in both international business (IB) (HQ-subsidary relations) and the global value chains (GVC) (buyer-supplier relations), but they also provide opportunities to gain a competitive advantage, provided firms can reconfigure and adapt faster than their competitors. However, the IB and GVC literatures have downplayed the importance of climate change strategies and the ways in which coherent or dysfunctional institutions affect the reconfiguration and adaptation strategies of firms in a globally dispersed network of value creation. With this in mind, this paper presents a perspective of the institutional conditions affecting firms' choices on climate change strategies regarding OLI (ownership, location, internalization), and the GVC, with 'investment' and 'emerging forces/standards' playing a significant role. This discussion is illustrated using several examples from the Global South (i.e., Bangladesh) and the Global North (i.e., Denmark, Sweden, Germany) with a special emphasis on the garment industry. The aim is to encourage future research to consider the institutional perspective in examining sustainability and climate change strategies in IB and GVC studies.

Keywords: *Climate Change, Strategy, Institutions, International Business, Global Value Chain*

<a> Introduction:

Issues concerning sustainability, particularly the climate change, have been a critical concern for firms' survival and growth in international business. Studies have explored how climate change issues affect MNE's firm-specific advantages (FSAs), especially the knowledge and capabilities, supporting product differentiation and process reconfiguration to reduce environmental pollution (Kolk & Pinkse 2008). However, significant differences are there in climate change risk profiles in different regions (Romilly, 2007), and they affect the multinational enterprises (MNEs) focus on the challenges they face in overcoming liabilities and filling institutional voids (Pinkse and Kolk 2012). Previous studies have tended to view climate change strategy through a unitary lens of economic and institutional logics, such as if MNEs adopt climate change mitigation strategy this will enhance sales and profit or if MNEs do not adopt climate change mitigation strategy in a certain context, they cannot survive or will lose market (Chakrabarty and Wang, 2013; Kolk and Pinkse, 2008). Failure to address climate change is characterized by institutional failure, presuming that national institutions can neither enforce global agreement nor can they ensure a market morality (Pinkse and Kolk 2012).

Whilst institutions present a dual perspective, i.e. constrains and opportunities, affecting failure and success for MNEs (Rana and Sørensen, 2021), previous studies have demonstrated a partial view of institutions to explain climate change issues that firms address. Thus, there is a need for a theoretical discussion on institutions in relation to climate change issues as to how and why variations in institutional systems shape firm capabilities differently, and how complementarities or lack there-in and path dependency in national institutional system not only constrain firms to mitigate climate change but also enable them to harness opportunities from policies and discourses on climate change.

This perspective paper, in line with Sustainable Development Goal (SDG): Climate Action, therefore, seeks to explain how institutions shape firm strategies for climate change adaptation. It discusses the key questions of how institutions and firms, as powerful actors, interact and evolve socio-politically manifested climate change agendas and priorities, and how this process shapes firms' capabilities, structures, and strategies in a globally interconnected business network. The international business (IB) and global value chain (GVC) literatures have both discussed the dynamics and factors affecting firm strategies across globally dispersed value chains, yet neither examines climate change strategies from a comprehensive perspective of institution. In particular, how climate change strategies and the

ways in which coherent or dysfunctional institutions affect the reconfiguration and adaptation strategies of firms in a globally dispersed network of value creation. With this in mind, this perspective paper explains the institutional conditions that affect firms' choices on climate change strategies regarding OLI (ownership, location, internalization), and the GVC, with 'investment' and 'emerging forces/standards' playing a significant role.

Climate change issues, such as CO₂ emissions, water depletion, sustainable energy, resource conservation, green transportation, and green manufacturing, are among the key discourses and policy debates facing firms and national institutions today, alongside social sustainability (i.e., employee-wellbeing and occupational health and safety (OHS) (Lund-Thomsen and Lindgreen, 2014; Kolk, 2016; Fransen, Kolk, and Rivera-Santos, 2019; Rana and Boje, 2021). To be ecologically sustainable and humanely (i.e., ethically), a society must adopt a new order of things (Dovers 2001). Climate change and sustainability represent profound challenges for both businesses and people, and tackling them involves reevaluating the basic assumptions and structures of societal institutions.

To decarbonize the economy by 2050, the European Union (EU) has introduced Carbon Border Adjustment Mechanism (CBAM) to reduce the risk of carbon leakage and level the field for European industries towards the decarbonization of production processes. In a similar vein, carbon taxes and emissions trading systems have been introduced worldwide, in particular for high-emitting industries such as steel, cement, aluminium, fertilizer/chemical, and energy production (European Commission, 2021). Since not all countries of the world do have or implement similar policies to reduce their carbon footprints, the EU's new rules and policies will create arbitrage in the production and sale of certain goods from certain countries in IB. A higher carbon price (via a carbon tax, tradable certificates, or simply stricter regulation) will make goods relatively more expensive for countries implementing this policy. This will push carbon-intensive production into countries with lesser regulation or lower carbon prices, thereby increasing the emissions in those countries, which mostly have weaker or less-prepared institutional systems.

The new policies and rules on climate change will not affect all industries directly. The apparel industry— for example, will not be subjected to as much direct regulation despite being another heavily polluting industry. Nonetheless, this industry will experience an indirect impact as it uses aluminium, chemicals, and energy across its activities in globally dispersed value chains (e.g., textile manufacturing, dyeing, production of metal accessories, garment manufacturing, washing,

packaging, and transportation). The European Environment Agency (EEA) has estimated that the amount of clothing bought per person in the EU increased by 40% between 1996 and 2012, and that over half of garments are not recycled, resulting in significant water consumption, pollution, greenhouse gas emissions, and landfill use. As a result, in 2021, the European Parliament adopted a resolution on the new Circular Economy Action Plan, instituting additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free, and fully circular economy by 2050. This includes tighter recycling rules and compulsory targets for materials use and consumption by 2030 (News European Parliament, 2021)

The new rules will not only affect apparel brands from the Global North (i.e., advanced economies) but also suppliers from emerging economies with weak institutional settings in the Global South (Rana and Allen, 2021b). Institutional contexts and their variations between countries, therefore, are critical factors for firms when making strategies for climate change issues (Rana, Allen, and Servais, 2021).

In reference to the apparel industry, which I draw on as an example in this paper, recent critical press reports and media stories have highlighted the overproduction and wasteful usage of clothes and textiles, particularly in the Global North, where the fast fashion trend has resulted in short-term usage to such an extent that clothing items may only be used once or twice before being thrown out. As a result, the global textile industry has been in the spotlight due to its negative impact on the climate, particularly through CO₂ emissions related to various aspects of the industry's global value chain. This is relevant in the context of the so-called science-based targets, which help companies by showing how much and how quickly they can reduce their greenhouse gas emissions and prevent the worst effects of climate change. Meanwhile, the industry's impacts on global CO₂ emissions are also highly unequally spread – as are the risks that producer and importer countries face due to climate change. For instance, Bangladesh, the second-largest apparel exporter in the world, contributes very little to global climate change but is likely to be among the countries worst affected by it, with 17% of the country's land projected to be underwater in 2100.

In the context of this globalizing industry and its widespread effect on climate change, a central question arises as to how producer and importer countries can adapt and mitigate their impacts. In this paper, we use an institutional theory lens to address these questions and focus on how studies in IB and the GVC can use an institutional perspective to examine firms' climate change strategies.

The aim of this paper is to provide a theoretical overview of the ways in which institutional theory can help to conceptualize how transnational and national institutions interact with transnational industries and firms in the face of the global climate crisis (Agrawal, McSweeney, and Perrin, 2008).

How national institutions affect climate change mitigation and adaptation agendas and how firms respond to climate change imperatives are subjects of contention that have not yet been comprehensively addressed in IB or GVC studies. These issues have been widespread in recent years, and each has been approached differently by academic fields investigating of globalizing business and sustainability issues. Hence, both literatures have relevance for the analysis of climate change mitigation and adaptation for transnational/multinational enterprises (MNEs).

The Swiss Re Institute reports that climate change could wipe up to 18% of GDP from the worldwide economy by 2050 if global temperatures rise by 3.2°C, resulting in a 10% loss of total economic value. The impact of climate change is forecast to be the hardest for Asian economies, with a 5.5% hit to GDP in the best-case scenario and a 26.5% hit in a severe scenario. Meanwhile, the World Economic Forum's Global Risks Report 2021 has identified that climate action failure is the most impactful and second-most likely long-term risk the world is facing at a time when populations are struggling to mitigate the impact of the COVID-19 pandemic (Marchant 2021).

The remainder of this paper is organized as follows. First, I present a discussion of institutional theory and how it can be applied in relation to climate change strategies. Second, I illustrate the key dimensions of the IB and GVC frameworks to demonstrate the climate change strategies that firms employ and the role played by institutions. I explain how these strategies are relevant and how they are applied with reference to examples from transnational industries, particularly the apparel industry, as one of the most polluting industries. Finally, I present conclusions and argue that the institutional approach is crucial in explaining the dynamics and strategies for climate change issues in IB and the GVC. I hope this chapter will encourage future studies to consider the institutional perspective to enhance analytical rigor in examining sustainability and climate-change strategies in the IB and GVC streams.

<a> Institutional Perspectives and Their Relevance to Climate-Change Adaptation Strategies

In this section, I explore various institutional perspectives, focusing on the national-level institutions at which changes are manifested and applied, and explain how different actors and institutions – including states, firms, and civil society organizations – contribute to the pursuit of climate change mitigation and adaptation in transnational industries such as clothing and textiles. My first entry point into this discussion is early-institutional theory and neo- and new-institutional theory, followed by a national business systems perspective that is built on organizational institutionalism. I also explore how the institutional perspective can be employed in the context of climate change strategies and sustainability.

** Institutional Perspectives**

The concept of institutionalism, particularly early-institutional theory, originates from Max Weber's ideas of 'rationalization' and the 'iron cage' (i.e. structuration) and Émile Durkheim's functional structuralism. Weber and Durkheim explain that rules, norms, values, and beliefs collectively institute 'modes of behaviour' that rationalize the forms of transactions, relationships, and social orders (Fransen, 1974). In the context of this paper, the focus is on the rules, norms, values, and beliefs of dominant actors, such as the state, firms, and civil society actors (e.g., NGOs), regarding climate change mitigation and adaptation. These actors may challenge existing collective representations consisting of shared rules, norms, routines, and belief systems and shift towards new goals, processes, definitions, and logics to ensure development and stability. Individuals and firms in this evolutionary process do not mechanically respond to stimuli; they first interpret them and then determine how they will internalize change in normative processes and definitions. This leads to conformity, to struggles for power between actors or groups of actors, or to identity construction or reconstruction, depending on actors' internal resources, knowledge, and cognitive frames (Parsons 1951; DiMaggio and Powell, 1983). The concern is not about the validity (i.e., rationalization) of the knowledges and definitions (i.e., of routines, rules, norms, logics) that emerge from the tension between various powerful actors but about how they are produced and reproduced as a social reality or a reality within the organizational boundary, which is typically a product of social interactions (Berger and Luckmann, 1967).

Different actors' interpretations of and responses to climate change challenges are thus associated with pressures to conform, power struggles, and identity reconstruction on the basis of their internal

resources, knowledge, and cognitive frames. As a result, the focus of the strategizing process is not on objectively valid knowledge about ‘climate change’ but rather on how knowledge about climate change is produced and reproduced in organizations through their interactions with the state, other businesses, and civil society actors.

The growth of the electric vehicle industry in the USA, Germany, and Japan provides a clear example, as the competitiveness of electric automobile firms has emerged and stabilized differently in each country due to differences in three key institutional features: i) institutional support for the research and development of lithium-ion battery and electric vehicle technologies; ii) rules and tax systems supporting electric vehicle production and consumption; and iii) rules affecting low-cost financing for green product development, production, and consumption (Boje and Rana, 2021).

Based on the theoretical foundations laid by early institutional researchers, new-institutional economics (North 1991; Coase 1998; Williamson, 1975) and neo-institutionalism, and particularly the approaches representing organizational institutionalism and business systems (Scott, 2008; Whitley, 1992b; Morgan 2001), have worked to explain diversity in institutional characteristics and its causal relationships with firm capabilities, transaction costs, and economic growth. This kind of perspective observes that firms may have different capabilities when it comes to addressing climate change mitigation and adaptation challenges, which may have associated transaction costs, which in turn have implications for the economic growth of certain industries.

These different perspectives on institutions have led researchers to design different analytical frameworks and logics on how a study should view not only institutions per se but also the interactions between institutions and firms, resulting in a range of unique operational frameworks through which to examine the specific factors of firms and the rationales influencing climate change strategies (Rana and Morgan 2019).

The existing research broadly finds that examining a single institutional domain is not sufficient to explain corporate governance outcomes (Haxhi and Aguilera 2017). This finding is relevant here because corporate governance plays a critical role in determining climate change mitigation and adaptation strategies. For instance, the nature of owners’ relationships and the associated conflicts (e.g. majority vs. minority owners, large block-holders) determines how and whether a decision on huge investment for green transformation would be approved in the board. Block-holders may ease conflicts of interest between managers and investors in such decision making while there may be

conflict of interest between the large shareholder and small shareholders affecting strategic decision on climate change mitigation, product and process reconfiguration. Such characteristics of firms are conditioned by the institutional characteristics (Kristensen & Morgan, 2018).

I, therefore, argue that the choice of institutional theory framework is an important consideration for any analysis of a firm's climate change strategies, as it determines the scope and magnitude of the analytical rigour that a study can have. A particular approach presents a specific definition and framework that allows researchers to consistently capture the complexity of institutions and organizational dynamics.

North (1991) defined institutions as "humanly devised constraints that structure political, economic and social interactions". Constraints include both formal rules (constitutions, laws, property rights) and informal norms (sanctions, taboos, customs, traditions, codes of conduct) which perpetuate order and safety within a market or society. In the context of climate change challenges, formal rules and regulations place limits on the ability of firms (and other actors) to pollute the environment, particularly through CO₂ emissions and water consumption. However, informal norms clearly have significant implications as well, particularly for the question of whether climate change can be addressed as a priority issue and how a society (or a firm in the case of an organisational boundary) would like to address specific issue of climate change. The comparative value placed on economic growth and/or environmental protection by key actors in a given society thus becomes a significant question for research. For instance, a critical issue is whether actors – in terms of their norms and values – accept that climate change is 'real' and thus prioritize it; this is subsequently manifested by the actions of the state, firms, and civil society actors across the country.

The degree to which institutions are effective in setting constraints can be reduced by factors such as a government's limited coercive force, the lack of an organized state, or the presence of strong religious precepts. In the case of addressing climate change challenges, we should expect that governments' willingness and ability to act to reduce CO₂ emissions within their borders will differ substantially.

North (1991) argues that the way institutions are organized in a country shapes the extent of property rights, information asymmetry, agency (control), and transaction costs experienced by a firm operating in that country. North further theorizes that transaction costs are rooted in information asymmetries between the parties to an exchange. The information asymmetry in conducting a

transaction includes the risk of fraud, agreement violation, and uncertainty and the level of control (i.e., agency) one party exercises over the transfer of goods or services; high asymmetry makes transactions difficult to enforce efficiently. Information symmetry on emission is particularly important in the context of domestic and export-oriented industries, where private sector firms may not always be willing or able to share information on how much they curb emissions and may instead evade the enforcement of existing rules and regulations regarding environmental protection and pollution control.

Given these conditions, institutions are likely to change and become more efficient over time to reduce the transaction costs firms face in meeting a sustainability agenda. For instance, because of the difficulty in monitoring the degree to which suppliers in weak institutional contexts carry out climate change mitigation strategies in the GVC, several private regulators and self-reporting-based indexes have emerged (Rana, Hoque & Allen, 2019). Such private institutions fill the institutional void and reduce transaction costs in GVC governance. Examples of such institutions are ‘Accord’ and the ‘Alliance’ – initiatives established by European and American firms purchasing garments from Bangladesh that have created private regulations that suppliers to global brands are obliged to follow (Kazi, and Rahman, 2021). Specifically, they have set new rules regarding fire and safety issues for garment factories.

Unlike neo-institutional economics, organizational institutionalism and business systems perspective have focused on dual perspectives of institutions, encompassing both constraints and opportunities. This framework also takes a co-evolutionary perspective to understand how institutional conditions not only affecting but also co-creating firm capabilities, structures, strategies, identities, agency, and legitimacy in market and society (Meyer and Rowan. 1977; Whitley 1991; Drori, et al. 2006; Scott 2008; Greenwood, et al 2012; Rana and Sørensen 2021).

Scott (2001:48, 2008) synthesizes various perspectives on institutions emerging from economics, sociology, political science, organization, and cognitive psychology into an overarching framework based on the principle that ‘institutions are social structures that have attained a high degree of resilience’. Institutions are thus composed of cultural-cognitive, normative, and regulative elements which, together with associated activities and resources, provide stability and meaning to social life. For instance, tackling climate change requires supportive regulations and social norms to which firms should conform in formulating strategies. However, in a country where the majority of firms are

family-owned and not listed in capital markets, owners tend to have higher influence in corporate decision making because they tend to sit on company boards; this is the case in Bangladesh. Therefore, if business owners do not have a positive mindset towards addressing climate change developed in line with institutional norms and rules, firms will see climate change as an extra cost or an opportunity for instant economic benefit, instead of responding to climate change issues for the long-term outcomes.

Most institutionalist analysis focuses on institutions per se, i.e. how they emerge and how they constrain firms (Hotho & Pedersen, 2012). However, these approaches pay little attention to the national level as a coherent institutional system or to any specific sector or region in which institutions perform differently from the national norm; therefore, they experience difficulty in offering a framework for in-depth and comparative analysis.

A national business systems approach building on organizational institutionalism provides a comprehensive operational framework for studying institutions (Whitley, 1987, 1992, Morgan et al 2010). The characteristics that make this framework distinct are first, the degree to which this theory focuses on institutions at the national level and the idea of a coherent and relatively systematic national institutional framework that impacts firms; and second, the degree of agency that each firm is assumed to possess, and therefore the degree of importance given to the strategies and organizational structures of firms and the variety of ways in which they respond to institutional and market pressures in a global context (Rana and Morgan 2019; Rana and Allen 2018). This approach posits that institutions are constructed and re-constructed through their continuous interactions with firms, leading to a coherent system that shapes firms' structures, strategies, motivations, and capabilities to adapt to and compete in changing conditions (Rana, 2015).

For example, the UN's climate change agenda is contributing to change in many national markets. Variations in readiness and ability to create enabling-capacity among national institutions will make the national market and firms either more competitive or less competitive. For instance, in a collaborative-network business system (e.g., Denmark) where state institutions are dynamic and highly efficient, firms are likely to be more efficient in responding to the climate change agenda in terms of product development, process reconfiguration, and marketing as compared to firms from incoherent and fragmented business systems such as that in Bangladesh, where local firms do not

receive support from institutions of similar quality. Thus, the former will have a competitive advantage over the latter. For example, Danish energy firms have a higher competitive advantage in renewable and green energy production because national institutions, over the last forty years, have undertaken supportive policies and incentives to boost research, education, and incentives for firms to catch up with the cutting edge of renewable and green energy technologies.

The business systems approach emphasizes how globalization and internationalization may change firms and institutions. Thus, it considers how firms which exist in both national contexts and global networks are influenced by international phenomena, and collectively implement creative responses to changing markets and institutions (Rana and Morgan 2019). This approach categorises institutions into two forms: ‘proximate’ institutions, which have a formal structure to formulate rules and exert power (such as state, financial, labour and education institutions), and ‘background’ institutions, which are historically rooted but informally constructed (such as social norms, values, and cognitive frames that underpin trust, authority hierarchy, reciprocity, and social capital) (Whitley 1992, Redding, 2005). The latter may evolve into the former, and over time, each influences the other in collaboration with other powerful actors.

In the Global North (e.g. Europe, USA), background institutions emerged first to take action on climate change issues, and were later supplemented by powerful civil society actors that created awareness and cognitive frames in society concerning the impact of climate change. Proximate institutions, particularly regulations and complementary institutions, were thus the result of background institutions that led political discourses and knowledge institutions to frame new rules relating to climate change. However, in the Global South, where the UN and multilateral institutions have a larger role in driving policies and rules in national contexts and have enforced new political discourses in the Global South, resulting in new rules and norms on climate change. The former pathway represents a bottom-up process while the latter represents a top-down one in the Global South; it is because of this top-down implementation that Global South firms, which often do not have consistent mind-sets relating to climate change, nonetheless follow the rules and policies that come from the top. Often, rules are not developed at all by state institutions in the Global South, while firms are encouraged to apply climate change adaptation strategies driven by buyers from the Global North. This eventually influences states to form new rules due to pressures from global actors and local suppliers to international brands. Thus, local firms, in support of their western business partners

and multilateral institutions, including donor agencies, are the initiators of climate change adaptation. This is the case for the practice of the circular economy in the Bangladeshi garment industry, which was initiated by the P4G (Pioneering green partnership) and Global Fashion Agenda, with the government not having designed the policies and regulations as of the time of writing.

In the table below, we present an account of the proximate/formal and background/informal institutions and illustrate the business system characteristics of firms that future studies on sustainability and climate change can consider in their analyses (Table:1) (See, Whitely 1992; Rana 2015).

Table.1 Institutional Features Affecting Firm Characteristics on Climate Change and Sustainability Strategies

Institutional Features	Description
Norms governing trust and authority relationships	<ul style="list-style-type: none"> • Trust in formal institutions and interaction-based relationships to support climate change strategy adoption • Importance of social capital in accessing resources, information, and justice for achieving sustainability goals • Authority hierarchy governing the degree of autonomy and power given to subordinates for independent decision making
Rationales and logics affecting decisions and justifications	<ul style="list-style-type: none"> • Both material and ideational logics affecting decisions over costs, technology features, production and operation features, interaction features and sustainability/climate change features.
State structures and policies	<ul style="list-style-type: none"> • Degree of dominance and directive role of the state in response to adapting and mitigating climate change issues across industries • Degree of complementarity and collaboration between state organs and between firms/business groups and state organs/policies. • State encouragement of intermediary organizations in developing and implementing economic policies on sustainability and climate change related initiatives and research.
Financial system	<ul style="list-style-type: none"> • Size, liquidity, and significance of capital markets and their roles in reconfiguring and adopting long-term technological capacities and science-based targets on climate change mitigation. • Dominance and support of bank-based financing vs capital market-based financing (e.g., the presence of a large pension fund can make a difference in facilitating long-term investment for sustainability-focused transformation by firms).
Labour system	<ul style="list-style-type: none"> • Effectiveness of the public skills development and certification system on sustainability and climate change knowledge and skills • Quality of education and research system. • Strength of employer and labour federations and their role in coordinating bargaining power and employee rights in the context of green transformation and re-skilling.
Firm Characteristics	

<p>Nature of ownership and governance of firms</p>	<ul style="list-style-type: none"> • The degree to which family-owned, state-owned, foundation-owned, or public-limited companies are dominant and how they integrate sustainability agendas in their corporate strategies (i.e., both environmental, social, and economic agenda). • The degree to which private managerial hierarchies (salaried managers) coordinate economic activities as opposed to owners, and how the degree of autonomy delegated to managers allows them to take risks to undertake innovative and long-term strategies for meeting the climate-change agenda. • The degree to which firms are networked with foreign firms (e.g., HQ-subsidiary relationships, joint ventures, licencing, arm's length relationships in the GVC), and how the agency (power) and nature of control by the lead firms/HQ in the network plays a role in adopting the climate change agenda in the management and operation of firms. • The degree to which the specialization of managerial capabilities and activities within authority hierarchies contributes to resource and operation reconfiguration towards the sustainability agenda. • The degree to which risks are managed through mutual dependence with business partners, complementary institutions/intermediaries, and employees in transforming the operation and structure of firms towards achieving sustainability goals. • The degree to which large conglomerates (domestic and foreign) are dominant and proactive in bringing new knowledge and resources for achieving sustainability capability, and how their agency co-develops new policies to mitigate the challenges of climate change.
<p>Nature of the networks and relationships between firms</p>	<ul style="list-style-type: none"> • The extent of long-term cooperative relations between firms within and between sectors/industries, providing resource dependency opportunities and complementarity in achieving sustainability goals. • The significance of intermediaries/supporting firms and institutions in the coordination of market transactions and efficiency in the business model reconfiguration. • Stability, integration and efficiency of business groups/associations in formulating coherent and indiscriminate policies for all types of firms to gain sustainability capabilities. • Dependence of cooperative relations on personal ties and trust; and/or the degree of dependency on social capital for accessing compatible resources for achieving sustainability goals.
<p>The internal management dynamics (i.e. The nature of management in organizations)</p>	<ul style="list-style-type: none"> • The degree to which the formalization of authority and subordination relationships in firms contributes to the implementation of new routines and strategies for achieving sustainability goals. • Task, skill, and role specialization and individualization suitable for promoting adaptation to climate change • The degree to which the differentiation of authority roles and the decentralization of operational control contribute to the development and implementation of innovative strategies for adapting to climate change and social sustainability agenda. • The degree to which the distance and superiority of managers affect the voices, new ideas, and decisions from the bottom level of operations (supervisors, workers) in developing new strategies on environmental and social sustainability. • The extent to which employer-employee commitment (i.e., long-term/short-term or the nature of the incentive structure) contributes to transforming the organizational structure to achieve sustainability goals.

Our rationale for adopting a business systems perspective is its focus on how firms are shaped by national-level institutions, as the institutions at this level tend to be strongest and have the most significant effect on the overall economic outcomes of society. Nevertheless, this perspective also recognizes that there can be regional or sectoral differences, depending on the state's policies and structures (see Whitley 2005). For instance, in a unitary state system (e.g., Denmark), rules and incentive structures apply equally for all firms in the country. However, countries with a federal state system, like China, may have different incentive structures for different industries in different provinces. This can encourage some industries to reconfigure more quickly than others by taking an advantage of the differentiated rules and incentive structures at the regional/provincial level. The circular economy districts established in various regions in China are good examples of regional institutional differences that affect climate change strategies; these include Guangzhou Huadu in Guangdong Province in Southern China and Suzhou New District in Jiangsu Province of Eastern China.

While business systems perspective argues that the interactions between firms and institutions give rise to a particular business system, it is considered as a set of systemic logics or rationales influences firms to follow similar characteristics to legitimize themselves in the business system (see Figure 1) (Whitley 1992, 1999, 2010; Redding, 2005).

Climate change issues primarily affect the following three characteristics of firms seeking to gain competitive advantage in a business system (Rana, 2015, 2014) (see, firm characteristics in table 1):

- i) *the nature of ownership structure and governance,*
- ii) *the nature of inter-firm collaborations and relationships, and*
- iii) *the nature of management in organizations, including the vision, aim and commitment for change.*

Gaining a competitive advantage or improving sustainability will, therefore, depend on how coherent the state policy and regulatory supports are for adaptation and reconfiguration; how complementary the financial institutions are for the reconfiguration of R&D, production, technology, and marketing; and how efficient and supportive the labour institutions (including the education system) are in renewing and restructuring the skill development and employment systems.

Climate change issues present challenges for firms, which need to address these challenges to remain competitive in IB; otherwise, for example, exporters from Western countries may choose not to buy

products from suppliers in developing countries that have failed to maintain climate standards. So, climate change perspective can also be a source of competitive advantage if companies can obtain knowledge and technology, and reconfigure their organizational structures in pursuit of climate change issues faster than their competitors. This ability of the firm will reflect how it can implement green production processes to make more environment-friendly products, have an efficient cost structure and supply chain, and develop differentiation strategies on sustainability (Ivang and Rana 2019).

** Institutionalism in Practice**

There are four key conditions in an institutional system that, when present, can make firms incapable of responding efficiently to climate change agendas: i) when state agencies cannot develop consistent policies and regulations with the same speed with which the global rules are framed and enacted; ii) when the state cannot enforce policies and regulations efficiently or cannot create or reform complementary institutions (such as financial and labour institutions); iii) when state institutions fail to adequately collaborate with firms and support them to reconfigure themselves for climate change mitigation and adaptation; and iv) when there is a lack of socially and environmentally conscious consumers.

The final condition requires a high-quality education system and background cultural institutions that encourage such a cognitive frame in society. Through these institutions, the state influences consumers to develop the conscious cognition to consume and legitimize sustainable products. Unless consumers' minds are ready to consume environmentally sustainable products, and they have the ability and intent to pay for them, firms cannot gain leverage in sustainable product development and process reconfiguration within their home markets. In such a context, gaining a competitive advantage in the global market would be difficult as reconfiguring product design (i.e., R&D), technology, manufacturing, and supply chain would be too expensive and cumbersome. For example, environmental policy in Denmark provides tax waivers to house owners to renovate the energy efficiency of their houses by changing roofs and windows. As this policy encourages house owners to buy energy-efficient products, it creates a national market for companies working in renewable energy and sustainable roofs and windows, helping Danish companies to compete in the global market.

A strong and coherent institutional system provides innovation opportunities for firms through research budgets, strong collaboration with firms to tackle the climate change challenges they face, a high-level of trust in collaboration between organizations, universities, and state institutions, and high-level managerial and scientific knowledge produced at universities (Whitley, 2007). Trust and commitment in organizations regarding change and adaptation are, therefore, created through institutional policies, incentives, and a credible education and research system. For example, Bangladeshi apparel companies do not tend to collaborate with universities for product, process, and capacity development and innovation due to low trust, with the sole exception of task-specific consultancy works. This hampers firms innovation capability in relation to climate change mitigation.

Such collaboration is unlikely to improve unless state policy stipulates research grants focusing on companies' problems, encouraging firms and universities to collaborate for reciprocal benefits. Collaboration between industry and academia also requires that universities have high-class research and innovation capabilities that industries acknowledge. Firms in a context where such collaboration is lacking have difficulty in reconfiguring for quick adaptation to climate change as they cannot develop local solutions using local knowledge (Witt & Redding, 2014).

A business systems perspective looks for multiple logics and rationalities in the relationships between institutional conditions and firm behaviour. Studies focusing on IB and GVC with interest in climate change strategies can consider this perspective to understand organizations' strategies and structures. In comparison, the transaction cost economics approach based on North's (1991) work primarily focuses on the 'constraint' dimension of institutions and overlooks how firms can actively change or complement institutional void (Jackson and Deeg, 2008; Whitley, 2010; Rana and Allen 2021b).

Future Studies on climate change can identify certain key institutions and their characteristics that shape resources for firms and the opportunities and constraints under which firms operate – e.g. the state, the financial system, the skills and training system, and labour market regulations and trade union formation (e.g., monopolies or oligopolies, restrictions on labour supply, or weak trade unions that are politically motivated and fragmented). The background cultural system (i.e. norms, authority, identity, rationale) is also highly significant (see Table 1).

For example, it is important to consider whether cultural relations are predominantly individualistic, based on opportunism and economic incentives, or collective, relying on shared notions of community, trust, and social capital. Where non-market relations are predominant, studies can ask what roles the three main actors – the state, employers, and labour – play in shaping institutions and

how they affect climate change strategies at the national and firm levels. Where the state, employers, and labour and, in some cases, NGOs or trade unions which may act on behalf of labour) cooperate (e.g., in Northern European economies), the outcome is a form of corporatist capitalism. This may be inclusive and network-based (i.e., aiming to treat all workers and firms in the economy in the same way), as in Denmark, which resembles a collaborative network-based business system, or more exclusive/segmented, as in Germany, which resembles a collaborative and inclusive corporatist business system (where the key employees of the export sector are the best paid and enjoy the best work conditions and where large conglomerates have a significant influence on policy outcomes) (Rana and Morgan, 2019). Where labour institutions are dominant, climate change strategies tend to include labour perspectives, (e.g., health and safety, skill development), and technological adaptation and research, at educational institutions (Morgan, Whitley, & Moen, 2005).

Where labour is absent from the dominant coalition, there are three possibilities. The first is where the state is dominant and encourages particular forms of business to emerge, often based on the exchange of political favour (e.g., South Korea). The second is where the state and businesses tend to be equally powerful and negotiate cooperation amongst themselves (e.g., Japan) (Rana and Morgan 2019). In the former context, climate change policies from the state dominate firms' work to reconfigure themselves and adapt to climate change; in the latter, firms and the state co-evolve climate change policies and strategies. The labour perspective is reflected in climate change policies, while the education system focuses on high-level research and development on climate change issues, from which firms can benefit.

The third possibility is the one currently seen in Bangladesh. Here, institutional systems become incoherent and fragmentary and the country fails to develop a coherent and effective business system. In such a context, skill certification is weak and poorly organized, and thus the wages for specific skills are not well defined or consistent. Labour unions are politically oriented with low bargaining power in areas like labour welfare and development, and thus NGOs step in to push for improved labour welfare. Workers and bottom-tier managers do not have a voice in strategic decisions, leading to poor labour management and top-down decision making on social sustainability and climate change strategies. Although specific policies on tax incentives and low-cost capital are offered for climate change adaptation, access to these opportunities depends on social capital and affiliation with political executives. In such a situation, accessing resources and benefits requires employers to have strong ties with political elites, which means that firms' growth and ability to reconfigure for climate change adaptation is dependent upon these relationships. Educational institutions rarely offer high-

level market-oriented skills and research knowledge for catching up with the cutting-edge technology required for climate change adaptation (Rana and Allen 2021b). Therefore, firms in such business systems view climate change strategies from the cost and legitimacy perspectives, instead of as an opportunity to develop long-term sustainable competitive advantage.

In fragmented business systems, firms' responses to climate change in IB and GVC depend on how companies build their strategies in line with national and global institutional systems and how they act as institutional entrepreneurs to change or complement the institutional gaps to grow and sustain in business. However, firms need to fulfil the requirements of Scope-3 emissions stemmed from UN global compact – a currently predominant phenomenon – to adapt to climate change issues. Scope 3 emissions are the result of activities from assets that are not owned or controlled by the reporting organization, but that those activities of organization indirectly impact on emissions in its value chain. Scope 3 emissions include all sources not within an organization's scope 1 and 2 boundary.

Scope-3 in climate change illustrates the different scenarios in relation to a variety of institutional contexts and strategies regarding IB and the GVC.

While Scope-1 and Scope-2 are limited to greenhouse gas (GHG) emissions by fuel-combusting company vehicles, fugitive emissions, purchased electricity, and heat and steam, Scope-3 covers a wide range of operations along globally dispersed upstream and downstream value chains. This includes purchased goods and services, such as manufacturing, business travels, employee commuting, waste disposal, the use of sold products, transportation/distribution, and investments, including leased assets (both up- and downstream). As a result, companies now need to track their GHG footprints across globally dispersed value chains to locate the points along those value chains where the largest amounts of GHGs are being produced.

Hence, there are two critical issues that firms should consider when addressing their climate change impact.

- First, a firm needs to look at the GVC to map out the critical value-generating points that emit the most CO₂ and take the necessary steps to reduce or eliminate these emissions. Global firms that have internalized their value chains (Dunning 1998) can implement such efforts more quickly by adopting new technology and reconfiguring the process of value creation, value delivery, and value proposition across the GVC. This may be relatively easy and less time consuming because although the value chain for such a firm is internationally dispersed,

it is contained within the firm's organizational boundaries. However, some value-creating activities, such as travel, transportation, and distribution, may not be possible to internalize.

On the other hand, firms that tend to outsource production and supply will find it more difficult to reduce their environmental impacts because all suppliers across borders may not have equal capabilities and resources. They are, furthermore, embedded in institutional contexts that may lack the necessary complementarity to reconfigure operations in pursuit of GHG emissions reduction.

- Second, firms should prioritize a circular economy that builds on regenerative and restorative mechanisms using sold products and/or waste as the input for the further production of new products. This can significantly reduce CO₂/GHG emissions, water consumption, and ‘fugitive emissions’ such as unintentional and undesirable emission, leakage, or discharge of toxic gases (Ivang and Rana 2019). As a comprehensive strategy, firms can also develop their own methods or collaborate with relevant firms for carbon capture and storage using a set of technologies in power plants, transportation, and production systems. The stored carbon can be then traded in an emissions trading scheme, which can offset firms’ CO₂ emission balance in the GVC and provide a competitive advantage by creating a new source of revenue, provided firms have the requisite knowledge, technology, and managerial capability.

For example, taking the advantage of institutional supports and incentives, Power2X, in collaboration with researchers from Aalborg University, Denmark, and local industries, built a complete industrial-scale electricity-to-methanol plant in Aalborg. The plant makes eMethanol from CO₂ (which is emitted by various industries in the area) and hydrogen using renewable electricity. This technology can make heavy transport greener because transport in general (ships, lorries, trains, and aircraft) accounts for more than half of CO₂ emissions from the transport sector. At the same time, it provides a complementary advantage to other firms in reusing captured and stored CO₂, which contributes to green transportation that the possibility for this kind of strategy emerges from an institutional system with high complementarity (i.e., effective complementarity and collaboration between a technology company, research institution, and local firms (AAU News 2021). This sort of complementarity is insufficient or absent in a fragmented institutional system like that found in Bangladesh.

Both strategies require institutional complementarity and path-dependency to accomplish the corporate goal regarding climate change. The opportunities for firms in terms of how they use capital, labour, and technology for climate change adaptation are fundamentally shaped by their institutional

settings. The business systems and institutionalist research imply that there is a limited number of ways in which institutions can effectively collaborate to produce ‘national business systems’. This can be explained in many ways, but generally relies on two key concepts.

The first is the idea of institutional complementarity (Deeg, 2005; Whitley, 2005; Morgan, 2007). It is not possible to have a labour system that is based on long-term employment in a context where financial markets are highly volatile and management is subjected to multiple short-term pressures. The ability to expand or contract the labour force is a major way in which managers can respond to short-term pressures and affect their share prices. Therefore, it is impossible to promise lifetime employment if financial markets exert pressure for short-term performance goals. Long-term employment policies and investment for sustainable product and process development require long-term commitment and finance.

Similarly, in an institutional system where there is a lack of trust between managers and workers, it is difficult to sustain long-term employment policies. Firms will, as a result, look for ways in which institutions fit together and produce positive returns for society in relation to climate change.

The following case goes some way towards explaining the concept of institutional complementarity in firms’ strategy on climate change and sustainability.

When the extent of the climate crisis first became apparent, Denmark undertook consistent policies to support firms in reconfiguring their production processes, energy usage, and products to adapt to climate change challenges. In 2014, it developed long-term policies and strategies, such as the “Danish Nature Policy” (Naturplan Danmark) and “Global Climate Action Strategy: a green and sustainable world (klimastrategi)”, aiming to reduce emissions by 70% by 2030 and achieve climate neutrality by 2050. To strengthen the focus on adaptation and sustainable development, state institutions cooperated with the private sector on green solutions. This was complemented by two subsequent policies, “Green Growth in Denmark” and “Green Future Fund”, aiming to generate up to EUR 15 billion for financing green companies and projects for climate change adaptation and reconfiguration (State of Green,2021). Such a highly ambitious set of goals and policies could never be achieved without a skilled workforce and research outputs; in pursuing this ambition, Danish research grant authorities and universities have prioritized sustainability and the climate change agenda in their education and research to complement firms’ restructuring and adaptation strategies. As a result, Danish firms can now reduce GHG emissions, store and trade CO₂ using local innovative

technology, and use green energy throughout the value chain – practices for which Denmark already has earned a strong reputation.

In contrast, although Bangladesh has developed some policies and strategies for transforming the energy sector, it currently relies on fossil fuel (i.e., fossil fuel occupies more than two-thirds of the total energy produced, while less than 2% comes from renewable sources, primarily solar energy). Policy implications, however, face difficulties in achieving the goals due to a lack of complementarity and collaboration between several ministries (i.e., those responsible for developing policies and those responsible for implementing them), research institutions, business groups, and financial systems. High-level bureaucratic inefficiency, a lack of green funds and research grants, and the absence of a long-term vision and policy contribute to ineffective institutional efforts in supporting climate change adaptation capacity. Although some initiatives are undertaken, such as policy directions that direct banks to disburse loans to firms for climate change adaptation, they are often applied discriminatorily, depending on who owns the firm and how closely the owners are networked with political elites. Recently, Bangladesh's Infrastructure Development Company Ltd (Idcol) received USD256.5m from the UN's Green Climate Fund to promote private sector investment through the adoption of energy-saving technologies and equipment for the textile and readymade garment sectors (Rahman, 2020). However, large textile firms with adequate knowledge of technology and managerial capability are likely to receive this discounted loan for climate change adaptation, creating a one-sided benefit for big players due to discriminatory practices in the institutional system.

The second key concept is that of path dependency (Deeg, 2005; Morgan, 2007). Once actors invest and follow existing practices and norms in institutions, i.e., in pursuing strategies that take advantage of a particular set of institutions, they are reluctant to change because they may have strong embedded routines. Alternatively, the actors and firms may pursue different interests and motives, and thus become path-dependent. They also tend to adapt to change in an incremental way unless a major crisis occurs or pressure is exerted by institutions or competitors.

Institutional complementarities and path dependencies vary considerably, not just in the degree to which they exist but also in how far are present and in what ways they are present in society. In some incoherent and dysfunctional systems such as Bangladesh, some complementarities can be negative, i.e. they reinforce weak firms and weak economic development, locking institutions and firms into a low-performance equilibrium. Equally, complementarities can be positive for some sectors in society

and less so for others, creating a discriminatory or varied institutional performance (Rana and Allen 2021b).

This explains why some societies in the Global North may specialize in different sectors, depending on the sorts of complementarities that are strongest. For example, the green energy sector and related industries (ventilation, cooling, pumps) are particularly strong in Denmark, where they are supported by long-term finance for sustainable growth due to the presence of a pension fund and foundation-led investments. Germany, in contrast, has specialized in advanced manufacturing of machine tools and automobiles due to its strong technical skill certification and research system, strong banking and long-term family and pension funds, and an inclusive and strong labour system, together with supporting intermediary industries.

These examples illustrate how firms' strategies, capabilities, and structures in an institutional system evolve for endogenous reasons as much as exogenous ones – i.e., the rise of new sectors or new pressures from global and national institutions such as COP26 and the UN Sustainability Goals. These external pressures/incentives can cause the decline and reorganization of mature sectors and pose difficulties in developing supporting institutions that affect the growth and survival of the existing business models followed by firms in a particular industry (Boje and Rana 2022).

<a> Climate Change Strategies in IB and GVC Research:

The IB and GVC literature tends to pay little attention to climate change strategies. Whilst the primary focus of IB is on MNE governance, performance, and competitive advantage in cross-border contexts, GVC studies look into how lead firms in global value networks/global production networks drive value-creating activities and the upgrading of value chain actors (Kostova, Marano, Tallman, 2016; Ponte, Gereffi and Raj-Reichert, 2019). Despite these differences, there is a similarity between IB and GVC research. Both focus on the same boundary structure in which organizations interact (i.e., global and cross-border contexts) and both aim to explain a) how organizations are interlinked with multiple actors in global business operations to create value and b) how actors across countries coordinate economic activities, which are embedded in various national institutional contexts and influence socio-economic development (Gereffi, 2002, 2018). However, the underlying rationales that explain how firms gain and control competitive competencies in value-creating processes across countries make these two approaches different in

their application. Overlooking their differences, which are diminishing, we present a discussion of how climate change strategies from an institutional perspective can be explained in the IB and GVC domains.

** Climate Change Strategies in International Business:**

Despite the increasing attention being paid to the climate change agenda and the institutional perspective, IB studies have overlooked how institutions in home and host contexts affect MNEs' governance and ownership to reconfigure capabilities for climate change adaptation (Doz and Prahalad, 1980; Allen, Rana, & Liu, 2019). Although the 'institutional context' is an important dimension in IB literature (see Peng, Wang, & Jiang, 2008), IB studies have paid little attention to suppliers perspective in GVC in the Global South (Developing countries in Asia) that are linked with foreign subsidiaries (i.e. buyers) from the Global North, and in particular to the GHG emissions of subsidiaries and suppliers that are connected across borders.

Using the OLI (i.e., Ownership, Location, and Internalization) paradigm, IB studies can explain climate change strategies in two types of relationship contexts: i) HQ-subsubsidiary and ii) subsidiary-supplier relationships.

Dunning (2000) argues, using an OLI approach, for the rationality of MNEs' ownership and location advantages and the decision for internalization or externalization in cross-border operations (i.e., either internalizing ownership and taking full control over operations or outsourcing). The OLI model presents that a firm must possess net firm- and/or country-specific ownership advantages over other firms from other countries in serving a particular national market. In the context of a climate change agenda, ownership advantages may be the institutional incentives and/or the complementarity in institutions and industry structure, or the managerial and technology competencies embedded in the local education system, which firms can use to make themselves ready for climate change adaptation. If these advantages do not already exist in the local context, firms may employ strategies to acquire them using internationalization (i.e., through FDI, joint ventures, licensing, or strategic alliances).

There are two scenarios that may negatively affect MNEs' ability to integrate a climate change agenda in ownership and governance:

- First, investors/owners do not have a positive mindset toward addressing climate change issues, and thus firms are not willing to accept risk in reconfiguring their operations for long-term gains.

- Second, management and employees are not motivated or willing to accept the risk arising from the reconfiguration process; this applies to the context where managers and workers view this change as a threat of job loss or as unimportant, or if an MNE's headquarters does not support the change process in subsidiaries or suppliers working in less-advanced institutional systems. This happens when the MNE's policy is not consistently evolved to reconfigure subsidiaries' organizational capabilities in terms of new skills and technology development that requires additional investment in host context.

For example, H&M Foundation, a part of H&M, in consistent with H&M's corporate strategy entered an international strategic partnership with the Hong Kong Research Institute of Textiles and Apparel (HKRITA) and invested millions of dollars in developing a first-of-its-kind textile recycling machine called 'hydrothermal recycling technology'. Hydrothermal treatment is a solution to the recycling of blended textiles and garments that supports a circular approach to manufacturing and recycling. This will help H&M to reduce CO₂ and water consumption in its production operations across GVCs.

The Partnership for Cleaner Textile (PaCT), a programme funded by the global institution with which fashion multinationals are networked, International Finance Corporation (IFC), is assisting Bangladeshi garment suppliers in adopting cleaner production practices. This initiative, which provides a useful example for the global supplier perspective in IB, has helped 338 factories to reduce freshwater consumption by 25 million m³/year and wastewater discharge by 21.08 million m³/year. As a result, these suppliers now can save 2.5 million MWh/year in energy and avoid greenhouse gas emissions of up to 489,796 tons/year of CO₂. PaCT is helping factories to recover chemicals such as salt and caustic soda and is providing low-cost green investment funds to garment suppliers from the USD200 million Green Transformation Fund, which is supported by IFC group and World Bank as part of UN sustainability green fund (PACT 2022). This is supporting suppliers to develop dynamic capability to reconfigure their capabilities and comply with the new requirements that MNE buyers like H&M are emphasizing for suppliers. In this regard, the global climate change initiatives undertaken by global institutions in collaboration with MNEs, suppliers, local institutions, and civil society are complementing the reconfiguration process of suppliers (Rana and Tajuddin, 2021).

IB studies tend to overlook the role of national and transnational institutions in MNEs' suppliers' adaptation to the effects of climate change. The supply-side actors in manufacturing industries, particularly the component suppliers and manufacturers, are located in emerging economies. They are generally seen as rule takers or rule followers and tend to be less powerful due to their limited organizational capabilities and market influence compared to their counterparts, i.e., brands. This is where the tension appears, as suppliers and MNEs experience unequal institutional conditions that result in different capabilities and strategies to mitigate and adapt to climate change challenges (Okereke, 2006). Below I discuss OLI from the perspective climate change strategies.

❖ *In OLI, the concept of Ownership* has been extended to different dimensions, such as asset advantage ownership (Oa), which signifies the exclusive possession and use of certain kinds of income-generating assets, and transactional advantage ownership (Ot) (Dunning 1977, 1983, 2004), which considers a firm's ability to coordinate separate value-adding activities across national boundaries and to reduce environmental (i.e. climate change and socio-political) and foreign exchange risks (Dunning, 1988a: 25). Ownership can be analysed in several ways, including the cognitive perspective (ability and access to information and knowledge about the assets); the equity vs non-equity perspective (cooperative relations-based); and the tangible vs intangible asset-based perspective (intellectual and relational assets) (Eden and Dai, 2010). Further, the OLI framework also emphasizes *institutional ownership advantages* (Oi), including both formal and informal institutional structures, incentives, and enforcement mechanisms (constraints) that shape firms' choices and performances in relation to climate change impact (Dunning and Lundan, 2008a, 2008b, 2010).

For instance, the Swedish fashion multinational H&M has been a forerunner in adopting climate change strategies in corporate strategies, global sourcing, and marketing. In its downstream operations, H&M has promoted sustainable fashion and consumption in IB and taken measures to reduce CO2 emissions, water consumption, and chemical waste. It ensures that the operations across its upstream (designing, component sourcing, production, and shipment) and downstream (sales and distribution) value networks consistently adopt climate change mitigation strategies. The challenge in this approach lies in reorganizing and governing upstream operations in line with downstream operations, primarily because its upstream operations are externalized (i.e., it sources apparel products from China, Bangladesh, Vietnam, India, Turkey, Indonesia, etc.) (Rana and Allen 2021a).

Since supplier countries have relatively weak institutional settings that tend to undermine efforts to address fire safety, water, and air pollution issues, H&M has developed a restrictive form of governance and collaborates with suppliers to ensure employee wellbeing and climate change adaptation. It has developed a long-term plan to curb climate change challenges in supply and production. H&M has effectively implemented a circular economy model in parallel with a linear business model in global production networks by using advantages conferred by asset ownership, transaction ownership, and institutional ownership in the Swedish institutional system (Rana and Tajuddin, 2021). In the Swedish institutional system, which is a collaborative and networked business system, family-owned firms tend to pursue long-term sustainable strategies to protect their family reputation, while large firms can source long-term finance from financial institutions that access large-volume pension funds with an aim of investing in sustainability-driven projects. H&M, therefore, has been able to invest heavily in recycling technology, developing a mechanism to collect used clothes and produce artificial cellulosic fibres, reduce CO₂ emissions and water consumption. This is incentivizing and encouraging suppliers to transform production processes and use environmentally unsustainable components in garment manufacturing. This strategy consistently contributes to the reduction of CO₂ emissions, water consumption, and waste disposal in the long run. H&M's institutional advantages and corporate-ownership advantages in terms of knowledge, managerial skills, and finance, together with its long-term investment commitment, have allowed the company to reconfigure its internalized activities and externalized manufacturing operations (though partly) in developing countries (i.e., its globally dispersed supplier networks) (Rana and Tajuddin, 2021). In contrast to GVC literature, IB studies have traditionally examined the internalized operations to explore how MNEs' strategies are affected by ownership advantages, location advantages, and internalisation advantages, although they are not necessarily relating climate change strategies across countries.

- ❖ '*L*' (*Location*) *advantages (where to invest?)* present that the net ownership advantages must be profitably exploited in the context of conditions (skills, knowledge, markets, raw materials, technologies etc.) outside the home country and in the host country (Eden and Dai, 2010). Using the firm perspective in international production, John Dunning emphasizes the institutional complementarity in which transactional cost (Williamson 1975) has been the central argument of the OLI eclectic paradigm because differences in institutional contexts produce different kinds of transaction costs. Therefore, location advantages that depend on institutional characteristics and

transaction costs impact how subsidiaries and their supply chain actors can adopt climate change strategies. MNEs are resource-rich, thus they may undertake several strategic options (including FDI, strategic alliances, and franchising) and market transactions when they expand globally. As a result, different factor conditions will apply as to how climate change strategies will be employed in different locations.

For example, following Facebook and Apple, the tech giant Google has invested USD4.5 billion in renewable energy-driven data centres in Fredericia, Denmark. Its reason for internationalizing its data centres is that Denmark has the locational advantage of institutional incentives for renewable energy, state-of-the-art renewable energy infrastructure, and a global reputation as a green energy country, helping tech giants to achieve global legitimacy and net-zero carbon emission goals.

- ❖ *'Internalization' (I) advantages (how to invest?)* are those which present benefits for a firm to use its ownership advantages inside the organizational structure rather than leasing or outsourcing. Building on the resource-based view and transactional cost theory, Dunning points to the motivations (i.e., the willingness of owners and management) and capabilities of MNEs as factors which drive decisions about internalization (I), i.e. what to internalize and what to externalize. Thus, internalization strategies and location choices are closely dependent on the sum of ownership advantages [Oa+Ot+Oi] (Eden and Dai, 2010). In explaining the internalization concept, Buckley and Strange (2011) point to two important issues, namely the cost of governance and the risks of governance within the hierarchy of the firm and the markets (external institutional settings), which are critical to climate change strategies.

MNEs tend to have three kinds of problems when making long-term strategic decisions on climate change issues, namely the information/knowledge problem, the coordination problem, and the motivation problem (from managers', /subsidiaries', or stakeholders' point of view). The way in which these problems are handled depends on the firm's attitude towards risk, capabilities, and visions as well as the institutional contexts in which it is embedded. The choice to either take or avoid risks depends on the comparative costs of external and internal governance, which are necessarily influenced by the internal and external transaction costs within the institutional context (Buckley, 1993).

For instance, Spanish fashion multinational Inditex internalizes 53% of its 8,543 supplying factories worldwide; these are located in proximity to its HQ in Arteixo, A Coruña, Spain. This is done to mitigate the risk inherent to the need for timely supply to meet fast fashion trends and to have the reconfiguration capability needed to respond to changes in the market and regulations, including those related to climate change. As it internalizes such a large amount of production, Inditex can quickly implement climate change strategies in its supply chain and operations based on the ownership advantages it possesses. Thus, it has been able to reduce its energy consumption and GHG emissions more quickly through strong coordination within its internalized network in Spain. Specifically, 81% of Inditex's global energy consumption (HQ production, logistics, and stores) comes from clean sources, and it commits to increasing this to 100% by the end of 2022. Its current focus is on transforming the energy consumption of its suppliers that are externalized in the value chain.

Inditex provides a useful contrast to H&M suppliers outside its ownership structure. This requires H&M to form collaborative relationships with externalized suppliers to support them in transforming their energy consumption practices, which takes more time and strategic effort.

However, certain institutional contexts heavily rely on fossil fuels in their energy mix, such as Bangladesh at 95%, complicating suppliers' adoption of green energy strategies in their operations. They will, therefore, have difficulty in transforming their energy consumption from highly polluting to green energy, unlike firms in Denmark. Climate change adaptation processes that require the reconfiguration of value-creating activities result in tension due to differences in cognition (the mindset that determines which aspect of the climate change agenda to prioritize), institutional conditions, and firm capabilities. It is true that ownership advantages give firms a competitive advantage through certain location advantages, but it may also pose some disadvantages when firms want to reconfigure before the institutional development of proper support for this transition (Cantwell & Mudambi, 2005; Nachum & Zaheer, 2005; Nohria & Ghoshal, 1997).

** Climate Change Strategies in the Global Value Chains:**

The concept of the GVC refers to the full range of activities embedded in a variety of institutional contexts that different economic actors carry out to bring a product or service from conception to end-use and recycling (Ponte et al., 2019). This concept helps map activities that are geographically

dispersed and explains the role of lead firms and formal institutions (such as national and transnational institutions) in the economic and social upgrading of actors in the value chain (Gereffi, Humphrey, and Sturgeon, 2005). These activities include design, production, processing, assembly, distribution, maintenance/repair, marketing, finance, consumer services, and disposal/recycling.

GVC studies tend to pursue an externalization concept in the relationship between lead firms and suppliers in connection with ownership issues (Sako and Zylberberg, 2017). However, this may not be the case always; several Danish apparel SMEs have internalized their supply chains in Italy, Poland, and Romania. Therefore, studies examining the impact of climate change can examine the role of actors in a hierarchical network in the GVC or a network defined by relational governance with an arm's length relationship, which is typically externalized, e.g. H&M.

There is a clear power imbalance in the governance structure between SME brands and their suppliers, as well as between MNEs and their suppliers, due to differences in trade volumes, innovation competency, and suppliers' dependency on lead buyers (Khan, Lew, and Sinkovics, 2015; Lee and Gereffi, 2021). *Process, factors, and power* in the global value network are the key dimensions that climate change strategies should consider when explaining the choices for MNEs or SMEs on different dimensions and the consequences that they can have for suppliers' upgrading and reconfiguration capabilities.

There are two major issues that will affect GVC studies on climate change strategies.

❖ *Investment perspective on climate change strategies in the GVC:*

The reconfiguration of climate change strategies requires firms to have as much support from management and technology as they do from investment. There is a growing community of financial institutions acting and demonstrating leadership on climate change initiatives. Some institutions are allocating capital and driving financial flows towards more low-carbon and climate-resilient activities. Others are taking strategies to change corporate behaviour, influencing policy outcomes by building the data and tools required to embed climate change issues into how the market functions.

For many developing countries, enhancing resilience means not only confronting the severe economic vulnerabilities stemming from a lack of export diversification and a dependence on a few industries in the GVC, but also adapting to increased exposure to environmental shocks, which can only be mitigated through organizational capability and long-term investment (Whitfield and Staritz, 2020). Many large MNEs have been planning to re-shore some activities within their GVCs to enhance

resilience, and this is likely to reduce the existing power asymmetries moderating the effects on climate change mitigation targets in supply-side countries in the global South.

The extent to which suppliers will be able to reconfigure their operations in response to climate change depends on the extent to which the institutions around them can change and support the transition process. Since Bangladesh relies on fossil-fuel-based energy, 152 large garment suppliers have recently constructed green factories and internalized the solar panel-based green energy system, partly financed by global institutions and the national climate fund. They have received LEED (Leadership in Energy and Environmental Design) certification, giving them more bargaining power to receive more orders at higher prices from western buyers in the GVC. However, small and medium-sized factories are under different resource and capability conditions since they have limitations in accessing finance from national and multilateral institutions.

An investment perspective on climate change strategy facilitates the examination of the impact of foreign direct investment in GVCs and what roles national and multilateral institutions play. To stimulate economic transformation through GVCs, policymakers and firms in developing countries need to better understand the business strategies of MNEs, the internationalization pathways for domestic firms, and how climate policies can create a conducive environment for both local and international firms. The UNCTAD (United Nations Conference on Trade and Development) 2020 report reveals that the global sustainability and climate change funds have reached USD1.2-1.3 trillion, including USD260 billion of green bonds, USD105 billion of social bonds, and over USD900 billion of sustainability-themed equity funds (Zhan 2021). The global effort to mobilize investment to achieve the Sustainable Development Goals will change the future patterns of FDI globally, which will impact sources of financing, sectoral development, and geographical locations. However, a long-term national investment plan for technology and infrastructure development in relation to climate change will also impact the degree to which the focal sectors in a country will be able to upgrade and compete in the GVC.

❖ *Emergent forces/standards affecting climate-change adaptation strategies:*

Today's GVCs and the end-to-end processes that underpin activities like raw material extraction and processing, consumer fulfilment, and end-of-life disposal or recycling have been built on a paradigm of localized production nodes and globalized flows. How the Fourth Industrial Revolution and emerging global standards will impact the role of production and restructure the paradigm in connection with climate change in GVCs remains a question to be investigated. The key emergent

forces today are the global institutions, civil society organizations, and technological breakthroughs, each of which continues to develop new standards and policies in relation to climate change, consumption and disposal, artificial intelligence, and 3D production, global ethics, and labour rights. National governments and companies, therefore, need to rethink their policies and institutional ownership to create necessary transformations in GVCs for their industrial development and investment strategies.

Thus, studies should examine the opportunities for multi-stakeholder collaboration in national economies to build readiness and resilience in institutions that can play a role in next-generation sustainability in GVCs.

Global economic policies, especially trade and investment policies, are shifting from multilateral cooperation to regional and bilateral solutions. This is compounded by the shift in national economic policymaking through new industrial policies, including protectionism, digital governance, and standard building (i.e., compliance criteria) in relation to climate change mitigation. The aggravated systemic competition (in trade, investment, technology, etc.) between economic powers impacts firms' relationships in the GVC. For instance, the application of new technologies in global production networks by MNEs will have far-reaching consequences for the configuration of and governance in GVCs. These new technologies include robotics-enabled automation and AI-enhanced systems, supply chain digitalization (including platforms, Internet of Things (IoT), blockchain, additive manufacturing, and mass customization (Brun, Gereffi & Zhan, 2019)).

While robotics-enabled automation can reduce wastage in production and enhance efficiency and productivity, AI-enhanced systems in supply chain management can record and analyse vast quantities of data from upstream and downstream operations and enable real-time analysis on different parameters of climate change issues in relation to a range of value-adding activities across the globe. This technology suggests solutions for optimized supply chain management between buyers and suppliers in relation to resilience and sustainability. It will reduce information asymmetry and ensure data-driven customized governance and compliance in the GVC. However, the extent to which firms can adopt such new technology will depend on their internal resource capability and the institutional contexts within which they are embedded and operating.

The Higg Index is a recently introduced tool supporting the pursuit of digital governance within global apparel and footwear industry. It presents a measure of sustainability for each factory throughout a product's lifecycle, from raw material production to end-of-life, based on detailed information on

climate change and social responsibility parameters provided by suppliers on a voluntary and continuous basis. At present, the metrics created by the Higg Index are limited to the company's internal use for the evaluation and improvement of its environmental performance. However, over time, it has a possibility to share information with buyers and other value chain actors to become a global standard for addressing climate change in the global garment and textile industry, although this would depend on its legitimacy granted by dominant institutional actors.

Despite efforts like this, the differences in approaches and standards between countries and regions on emissions targets, as well as the responsiveness of suppliers, will continue to impact the governance choices for buyers' GVCs and how value chain actors can adapt to institutional changes and standards.

<a> Conclusion

This chapter has illustrated and discussed various dimensions of climate change strategies from institutional perspectives considering international business and global value chain management. While both the IB and GVC literature are able to explain some aspects of climate change strategies and sustainability, this paper has tried to complement the gap between their perspectives.

Reflecting on the internalized global network of multinational enterprises (i.e., MNEs and their subsidiaries) and the externalized global production network of multinational buyers and their suppliers in developing countries, I have illustrated how different dynamics in institutions influence climate change strategies across countries. In so doing, I have presented several examples from the Global North (i.e., Europe, especially Denmark and Sweden) and the Global South (particularly from Bangladesh with reference to the global garment industry) to concretize the insights reflected in the theoretical discussion so that future researchers can follow the theoretical reasoning in reference to OLI and GVC frameworks.

I argue that climate change strategies are being shaped by the changing nature of institutional structures and firms' capabilities. The ways in which firms undertake climate change strategies thus depend on the changing nature of institutions, complementarity and path-dependency in the institutional structure, and the extent to which emerging technologies, investments, standards, and market forces support firms' operations in the GVC. Therefore, I argue that the use of the institutional perspective will help ensure the analytical rigor of the research on climate change strategies in IB and

the GVC. This paper contributes to sustainable strategic management from an institutional perspective in the IB and GVC streams.

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