Understanding the Differential Drivers of Export Performance in

the Thai Clothing and Textile Sectors:

A Firm-Level Analysis of Distribution Activities and Constraints

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ABSTRACT

This research paper focuses on Thailand's textile and clothing industry since its liberalisation in 1995. The industry used to be the number one generator of export income for Thailand. As exports strongly declined in the late 1990s, the Thai government employed 'industrial policy' to reignite the industry in 2003 and 2007. However, the policies have had little effect on the export pattern. We argue that the way government sees the industry is inappropriate and leads to ineffective industrial policy.

The research findings illustrate that industrial analysis at 'macro' or 'aggregate' level is weak and impractical. These high-level analyses do not give policy makers and government a clear understanding of the industry, structure or drivers of performance. Furthermore, we are unable to identify common factors that differentiate well-performing firms from poorly performing firms. The aggregate level data make it difficult for policy makers or government to see what key success factors to focus on in this complex and dynamic business environment. There is no obvious 'model' that distinguishes those firms or sectors that do well and grow, against those which do not.

So rather than focus on aggregate level, government and policy makers should focus on firm-specific characteristics, strategies or business models that differentiate them from others. Government needs to understand in depth the specific industry structure of the sector and the relationship between key players. This will help it to understand its role and the measures it can use to support the private sector.

This new method may consume more time and require better skills and knowledge from researchers and policy makers. The approach requires committed researchers with strong strategic and analytical skills who can divide or dissect the industry into various sub-groups, and policy makers with better mindsets. But most importantly, problematic policy is a result of a fragmented policymaking process that stems from poor economic governance.

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DECLARATION

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Chapter 1: Introduction to the research

1.1 Research background

The textile and clothing industry has historically been one of the major sources of revenue and employment for the Thai economy. Like many other Asian economies, Thailand's industry developed out of a legacy of state protectionism. This would lead to a pattern of development experienced by many other producing countries. High tariffs introduced in the early 1960s protected the industry from foreign imports. This created conditions for local suppliers to expand. As local supply chains developed the capacity to fill domestic demand, the state then attempted to manage growth through a shift towards export promotion (while still preserving high tariffs on imports). Over the 1970s and particularly the 1980s, the Thai industry flourished, becoming a leading employer in the economy.

Like many other Asian producers, Thailand's economic development was a beneficiary of a system of managed international trade. Protectionism was the common route to developing 'infant industries'. As those industries began to pursue further expansion through exports, particularly to the major developed markets in the US and Europe, the management of international trade in garments and textiles was governed by the Multi-Fibre Agreement. This regulated the amount of exports that developing countries could achieve from the developed economies. This system of management emerged in 1974 and would continue until 2004. In the 1990s, free trade became the dominant doctrine advocated by the leading international organisations. Participation within the World Trade Organization meant developing countries had to start dismantling their systems of protectionism and begin a process of liberalisation. For the Thai textile and clothing industry, this process of liberalisation began in 1995.

These developments have posed a major challenge not only for the Thai industry, but also for Thai policy makers as well. With the move toward liberalisation, Thailand saw its export growth and market share begin to decline. This was matched by declines in the industry's Revealed Comparative Advantage, an important performance indicator used by Thai policy makers. The cause of these declines is often thought to be an inability of firms to 'upgrade' their operations. Given the importance of this industry to the economy, deteriorating industrial performance meant the government would have to embark on a policymaking project in which it had no prior experience, creating an active industrial policy to improve industrial performance not only of this

industry, but of other industries as well[1]. This effort materialised in the first industrial 'master plan' of 2003 and a revision of that plan in 2007.

The 2007 master plan envisaged Thailand as "a center of the textile and clothing industry in ASEAN" by 2012. The ultimate aims of the plan were threefold: a) to sustain the competitiveness of the national textile industry both in domestic and global markets; b) to transform the industry from labour-intensive industry to knowledge-based industry; and c) to target the ASEAN region as a new potential market. The important question for policy makers was how to achieve these things.

A key context of this thesis is the mindset adopted by those who developed the government's master plans. This mindset reflects the organisations behind them. In Thailand, two main organisations oversee industry policy: the National Economic and Social Development Board (NESDB) and Ministry of Industry (MOI). The policy makers that work under/with NESDB and MOI are typically economists who tend to view this industry, like any industry, as a single macro-economic value chain. In the creation of the master plans, the MOI instructed researchers and consultants (such as myself) to employ the 'Diamond model' as a way of generating information on the industry to be used when formulating the master plans. The Diamond model was first introduced to the government in early 2003 by Professor Michael Porter when he was appointed to develop industry policy for five major industries in Thailand. One of the key recommendations to the Thai government to upgrade its industries was to focus on cluster development, i.e. to upgrade the business environment (which comprises components of the Diamond model) to improve industry competitiveness.

Such techniques assume not only that these two 'sectors' operate within a single overarching structure of industrial organisation, but also that the dynamics affecting the industry are the same. For example, the Thai government usually looks at the textile sector as the 'upstream' part of the industry while the clothing sector is 'downstream', using raw material and fabric from the textile sector. It then adopts a framework such as the Diamond model or SWOT analysis to identify strategic strengths and weaknesses of the industry, without a clear understanding of its organisation. Figures 1.1 and 1.2 present government's view on the industry and an analysis of Thailand's textile and clothing cluster.

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[1] In 2003, government proposed industry policy for five major industries: automotive (Detroit of Asia), tourism (Asia Tourism Capital), fashion (Asia Tropical Fashion and Bangkok Fashion City), food (Kitchen of the World) and software (World Graphic Design Centre).

Figure 1.1: Thailand's textile and clothing cluster by NESDB

Government Agencies
- Ministry of Industry, Department of Industrial Works
- Ministry of Commerce, Department of Trade Negotiations
- Ministry of Labor
- Ministry of Education
- Thailand Textile Institute
- The Board of Investment of Thailand

Service Providers
- Designing business
- Exporter business
- Transportation business
- Financial institution
- Packaging business
- Trader business
- Tourism business
- Media and Advertising business

Suppliers
- Raw material importer
- Raw material feeder
- Machine business
- Petrochemical business

Core Activities
- Fibre industry
- Spinning industry
- Weaving and Knitting industry
- Dyeing and Printing industry
- Clothing and Garment industry

Education and Training Institutes
- Thailand Textile Institute
- Universities
- Vocational training institute

Associations
- Thai synthetic fibre manufacturers assoc.
- Thai weaving industry association
- The assoc of Thai bleaching, dyeing, printing and finishing industries
- Thai garment manufacturer association
- Thailand Textile Institute

Figure 1.2: Thailand's textile and clothing Diamond model analysis by NESDB

- Mostly composed of SME with fast adaptation
- In a beginning phrase of cluster development, resulting in a number of consortiums, however no concrete action has been planned
- High competition with price cut strategy
- OEM lacks brands, resulting in low value addition and low product choices
- Export market is highly condensed

Context for Firm Strategy and Rivalry

Factor (Input) Conditions

Demand Conditions

- Constant growth in infrastructural development
- Constant improvement in Labour productivity
- Low R&D
- Lack of technical experts
- High wage rate
- High cost of supplies and raw materials

- Demand in ASEAN market is expanding
- Large domestic market size
- Consumers emphasise product design
- Textile buyers express needs in one stop services from suppliers
- International markets emphasise eco friendly and high technology products
- Growing international demands in customisation and niche products
- Consumers' revenue is low, but growing alongside GDP growth
- Domestic consumers lack of sophisticated demand

Related and Supporting Industries

- Sufficient numbers and types of supporting industries throughout supply chain
- Industries related to technical textile is large eg. Automotive, Tourism, Agro and Chemical industries
- Large firms do not support small sized firms

On the one hand, this approach to industrial policy making allows the government a convenient way of analysing the industry's strengths and weaknesses in the aggregate. On the other hand, it is a mindset that shapes not only how industry data are collected, but how the government sees the organisation of the industry. This is important because it shapes their thinking on how they can influence industrial development. For instance, one implication of the current mindset reflects a disposition of policy makers to pursue a single set of interventions – a 'one-size-fits-all' set of interventions that it is hoped will benefit all firms within the textile and clothing industry. In the present master plans, the main ambition of the government is to increase the industry's export and one of the main ways of achieving this is through attempts to engineer new linkages between firms, particularly through efforts to stimulate cluster formation. The government's belief is that clusters will help to increase productivity of the firms in those clusters.

Another by-product of the current mindset and data collection efforts is the presentation of a picture of industrial activity as a single structure. Policy makers then look at this structure to identify the pattern of linkages, or lack of them, as the 'thing' to be changed by industrial policies. Looking at the industry in this way has led to a perception of the industry's performance problems as a breakdown in the linkage between textile and clothing sectors. Consequently, the role of government is thought to be an effort to 'reconnect' them. In the master plans, government has attempted to do this by promoting local linkages, particularly between textile and garment producers, as well as between local manufacturers and retailers. The hope is that by promoting new kinds of linkage, the industry will work together as a single collective effort to 'upgrade' their processes but also their products, creating higher value Thai-branded garments. The problem is that this assumes the domestic market, as well as the industry itself, will support and act upon these moves, and that by acting upon them, the industry as a whole will eventually improve its export competitiveness.

At first glance, the objective and strategy look quite comprehensive and provocative with a significant amount of government spend to back the master plan. In the case of textiles and garments, this policy has created much hype, excitement and attention to the industry. However, there are many signals that the policy is not working and that the government's mindset needs to change.

One signal of policy problems is that the government's own performance indicators do not demonstrate any clear sign of this performance improvement. The global market share of Thailand's textile and clothing industry declined from 2.2% in 1995 to 1.6% in 2010 with an average growth rate of 1.03% between 2005 and 2010. The growth rate is significantly lower than that of the

1980s at 20.7% and of 1990-1995 at 13.6%. The revealed comparative advantage (RCA) indicators for the industry radically declined from 1.48 in 1997 to 0.97 in 2010[2]. Moreover, for a policy that seeks to 'reconnect' domestic textile and garment firms, the willingness for these firms to 'work together' appears to run contrary to current performance patterns. For instance, the export capabilities of garment producers have been steadily deteriorating since the onset of liberalisation. The contribution of clothing exports to the industry export decreased from around 75% in the early 1990s to 53% in 2010. In contrast, textile producers have perceived greater opportunities by exporting their products directly, rather than linking with domestic garment producers. Between 1990 and 1995, export growth of the textile sector was 15.9%, which is higher than that of the clothing sector in the same period (12.9%) and higher than textile sector growth in the 1980s (9.7%). The comparative advantage of the clothing industry has declined significantly since 1997 from 1.83 to 1.35 in 2005, while that of textiles has more or less remained mediocre from 1.1 in 1997 to 1.18 in 2005. This begs the question of why local textile firms would want to work with local garment firms. It also raises the more general issue of how well government's understanding of industrial organisation reflects the actual organisation of the industry.

The notion that Thai textiles and clothing could act as a single value chain seems to fly in the face of the fact that firms appear to operate within very different value chains and that their perceptions of what it means to upgrade, and how they should go about it, are likely to be very different. It also appears to be the case that the experience of adjusting to a more liberalised international trading environment differs between sectors. With seemingly differing 'winners' and 'losers' there are also likely to be differing challenges to export growth for garment and textile firms, as well as for firms within these respective segments. At present, policy makers do not seem to know why some firms do well and others do not, and why in the aggregate some segments do better than others. The more differentiated the value chains underlying the industry, the more we can only expect there to be differentiated experiences of upgrading and strategies for growth. Such differential dynamics suggest that the effectiveness of master plans is likely to be highly problematic, leaving government unclear as to whether its policies are helping or hurting or indeed whether they have any impact at all. Nonetheless, there is no impact assessment of the master plan to date, the lack of any way of assessing impact being a big problem for improving master plans in the future.

Another signal of ineffective policymaking stems from notable gaps in thinking. The current master plans have taken a largely domestic outlook when designing interventions. The Diamond model in particular focuses government attention on domestic issues, such as factor

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[2] UN Comtrade and author calculations. This will be discussed in chapter 2

input, government regulation, domestic-supporting industry and domestic demand. Yet this is peculiar given the objective of these plans' focus on export growth. Most of the outputs of the textile and clothing sectors are products for export. This overly domestic mindset appears to fly in the face of much conventional policy wisdom about what the upgrading challenge represents in the wake of globalisation and trade liberalisation. Many international organisations have argued that liberalisation will hurt industries that do not adapt to participate in, and benefit from, emerging opportunities posed by increasingly global production systems. This implies that for governments dismantling their protectionist measures, policy makers need to embark on a process of gaining comprehensive knowledge about the global value chains (GVCs) their domestic industries were linked to and concentrate on designing policies that reflect these conditions.

For instance, such 'best practice' notions have appeared regularly in the United Nations Conference on Trade and Development (UNCTAD) world investment report. Since early 2000, UNCTAD has discussed the importance of the Transnational Corporation (TNC) in coordinating and controlling within the global value chain. It argues that TNC takes a key role in coordinating and transferring knowledge and technology, hence increasing competitiveness of firms in host countries that are in a lower division of the global value chain. This implies that governments should actively consider how global value chains provide an opportunity for local industrial development interests. UNCTAD has also studied the role of GVC in upgrading small and medium-sized enterprises (SMEs). It attempts to use GVC as a tool to facilitate SME integration into the global value chain. UNCTAD (2006) examines the role of smaller firms and the different forms of upgrading that can be pursued to meet the evolving requirements of lead firms in global value chains. UNCTAD goes as far as arranging an international event (UNCTAD, 2008) to discuss how global value chains are evolving and how emerging economies could use local business linkages to maximise the return to host countries from Foreign Direct investment (FDI). The meeting was attended by high-level government officials and business leaders from both developed and developing countries. Other organisations such as OECD, ILO, UNIDO and WEF have also focused more on GVC and economic development.

The apparent 'oversight' of these concerns in the development of Thailand's own master plans is all the more glaring when considering that many of the studies that have informed views about the benefits of global value chains have explicitly focused on the textile and clothing industry. For example, the United Nations Industrial Development Organization (UNIDO, 2003) produced a report entitled 'The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries?' while the Asian Development Bank (ADB, 2002) tackled similar concerns in its report on 'The International Competitiveness of Asian Economies in the Apparel Commodity Chain'. In both cases these organisations have drawn heavily on a body of academic research on

the upgrading prospects offered by the global value chain. These frameworks sought to explain how transformations in production, trade and corporate strategies have altered the apparel industry over recent decades and changed the conditions for innovation and learning in the industry.

Many of these accounts are developments of the global value chain framework developed by Gereffi and Korzeniewicz (1994). The GVC framework seeks to offer a comprehensive analysis of the relationship between local industry and the global value chain. Rather than thinking about the industry as a single chain, the framework opens up the importance of thinking about differences in the structural and spatial dimension of industries, clusters and the linkages between them. Two areas of attention have been raised in debates.

Firstly, one particularly important emphasis of these accounts is recognising how global value chains are 'governed' by a variety of lead firms. For instance, in the textile and clothing industry, previous GVC research has found that global buyers (e.g. large retailers, branded manufacturers and branded marketers) can play a significant role in directing the export structure of production networks from developing countries. These firms control access to major resources (such as product design, new technologies, brand names or consumer demand) that generate the most profitable returns in the industry and structure the terms of participation in their value chains. These power relationships can have a significant impact on development opportunities posed by global value chains to domestic industries (DFID, 2004).

Humphrey and Schmitz (2000) have been particularly important in developing the idea that value chain governance is central to the upgrading experiences of firms. How lead firms control value chains can influence the manner in which developing country firms participate in global value chains, and thus the scope for what kinds of upgrading experience firms have to improve their performance. In particular, these authors have argued that there are different types of relationship with producers that we should expect to have different effects upon industrial upgrading experiences. For example, in a 'captive' value chain, they argue that the high degree of monitoring and control by the lead firm tends to mean local producers experience a form of product and process upgrading, but are likely to see little possibility of functional upgrading. It has been argued that other 'types' of governance arrangement exhibit different sets of upgrading experience. This suggests that in the case of Thailand's textile and clothing industry, a domestic mindset may be ignoring the possibility that export performance may be highly differentiated and based upon particular characteristics associated with different channels for accessing international markets.

Secondly, as the characteristics of global value chains influence the kinds of upgrading experiences firms have and the benefits they may or may not reap from participating in them, this also suggests that in order to benefit from GVCs, firms must find the right 'business model'. For instance, Mathews (2006) has argued that for firms to upgrade, they need to find a business model that 'fits' with what the customer wants or identify required resources and capabilities, which can be learnt or acquired by interacting with key international players outside local frontiers. Mathews, like many of the policy thinkers in this industry, tends to think about these business models in terms of different types of manufacturing arrangement. For instance, some manufacturers can employ an 'Original Equipment Manufacturing' or OEM model, while others employ an ODM (Own Design and Manufacture) or OBM (Own Brand Manufacturing) model.

Much of the GVC literature tends to presume that 'upgrading' is about 'moving up' the value chain, from OEM model to ODM and then to the OBM model (Gereffi, 1999; Gereffi and Tam, 1998; OECD, 2007; Yue and Evenett, 2010). This assumes that some manufacturing arrangements are more profitable than others. Indeed, this concept appears to have become widely accepted in policymaking circles and become an explicit goal for many developing countries. For instance, the master plan in Thailand has exhibited a strong focus upon moving textile and garment manufacturers towards an OBM model. Within the introduction of the first master plan in 2003, one of Thailand's mega-projects was called 'Bangkok Fashion City', a project initiated in the hope of creating more Thai clothing brands.

In summary, the current policymaking context is dominated by a mindset primed to see the textile and garment industry in highly general, aggregated terms. The government tends to see the industry as a collection of firms operating within a single value chain that, in their view, should be connected together in different ways. It has opted to develop its master plans using a mindset that is one-sided in its domestic focus and that has led the government into a course of action intent on 're-engineering' relationships between firms in the industry. Such efforts clearly come with assumptions about how the industry is organised and how firms within it operate. The problem comes when this view fails to reflect the real industry structure and organisation, which in turn increases the likelihood that policymakers adopt interventions that are neither targeted to the 'right' firms in the 'right' value chains, or are interventions that run 'against the grain' of what firms are currently trying to do to improve their performance.

This thesis engages with these policymaking challenges and is inspired by the belief that much of the current policy mindset is problematic. This mindset focuses upon reorganising domestic producers that are likely to lack significant knowledge or insights about the consumer market, particularly those in international markets. Restructuring local linkages is likely not to be

sufficient to enable Thai producers the chance to improve their performance in the current global competitive landscape. If much policy advice on global value chains is to be believed, the government's lack of understanding of the power relationships and governance structures that leading international firms exhibit is a glaring omission that needs to be considered more carefully. Indeed, there is evidence to suggest that there may be more variety in the structure of value chains, variety in the upgrading experiences of firms and variety in the ways firms pursue export growth than is currently recognised by government. Without a clearer understanding of these differences in industry structure and governance, and the differences in upgrading experiences that are likely to be generated, the effectiveness of policies that pursue blanket measures of industrial support and questionable measures of industry re-engineering is likely to limited. Given this context, this DBA thesis aspires to contribute to a clearer understanding of the organisation of value chains in the garment and textile industry in Thailand. This project seeks to generate a greater empirical appreciation of the degree of variability in export pursuits and upgrading experiences that exist, as well as an estimation of how effective key notions employed by theories of upgrading within global value chains would be in better capturing the experiences of Thai firms.

1.2 Research questions and strategy

The heart of this thesis is concerned with understanding the effectiveness of government policy for the textile and clothing industry and the challenges of addressing GVC dynamics when tackling industrial development domestically. Currently, there is not yet any attempt to evaluate and examine the effectiveness of the 2003 and 2007 industry master plans. However, in the globalisation and trade liberalisation era, the government or policy makers' view on the textile industry as a single value chain does not take into account the importance of international intermediaries and merely focuses on the domestic chain, which could have implications for industrial policy. The global value chain framework offers the prospect of improving government policies, but that possibility needs further investigation in the Thai context. GVC theory suggests that governance structure and authority and power relationships within the value chain determine the performance and upgrading ability of an industry. Therefore, if each sector is organised independently with different dynamics and performance, this means that firms in each value chain face different phases of development pressure and require different types of industrial upgrading, hence a different industrial policy.

Figure 1.3: Research problem and hypothesis
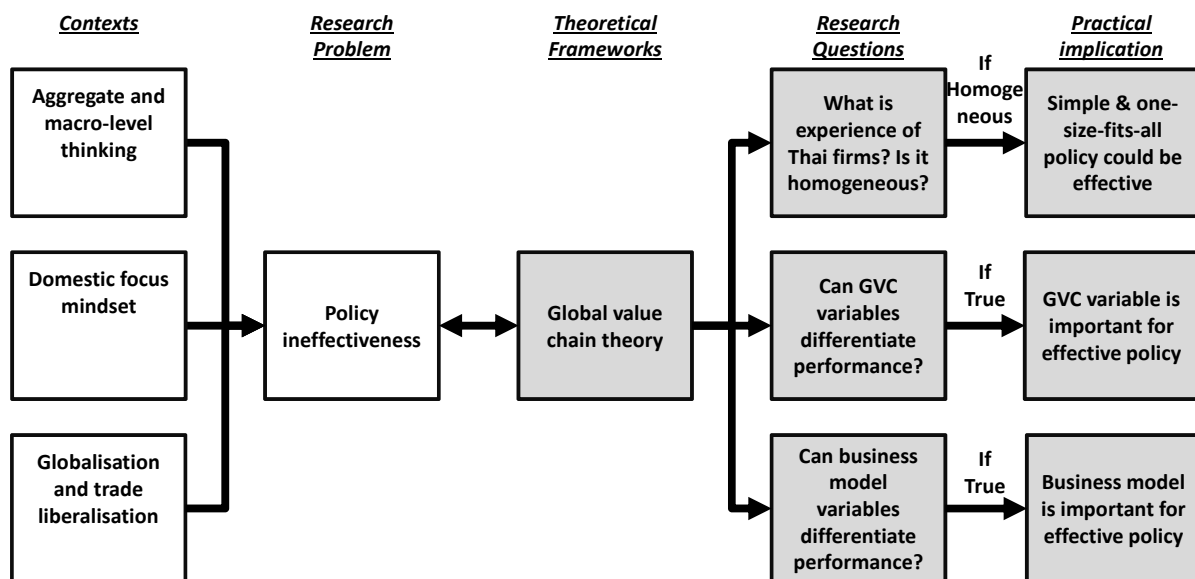
In principle, for a theoretical framework to be considered a valid instrument that leads to effective policy, it should first help government and policy makers to better understand the industry's operation. The tool should reflect firm structure and operation within the industry and be able to capture the experience of firms within the sector and provide government with important information that reflects real needs to develop government policy. In addition, the framework used in policy making should be relevant to the real world, i.e. it should be able to influence behaviour or performance of the majority in a group of firms that the government and policy makers target. This principle leads us to three research questions that revolve around this thesis.

First, government agencies, which usually wear their aggregate- or macro-level hats, do not normally have an in-depth understanding of how firms in the industry operate and of their experiences. This lack of understanding would probably lead to ineffective industrial policy. The GVC framework proposes that firms in GVC have different governance, upgrading experience and international lead firms. And those differences will have an effect on firm performance. To be effective, this framework should be applied to the Thai context. However, no research that adopts the GVC concept exists in Thailand, hence we need to examine and test its relevance, particularly the international linkage that is neglected in current research. We want to see whether the findings illustrate the industry structure comparable to the GVC theory. If they do, this will imply that the current one-size-fits-all government policy might not be effective and we need a different approach to tackle such variability of firms in the industry. This concern therefore leads to our first research question about reviewing the industry and its current situation:

An empirical question:

'What are the differences in experience of firms in the textile and clothing segment with regard to export growth and how are these experiences distributed?'

Secondly, in terms of upgrading experience of firms in the industry that has an impact on effectiveness of government policy, the outcome of these policies is the most explicit and should be examined. For government policies to be effective, they should have an effect at the aggregate level, i.e. a policy that wants aggregate growth will be effective if it can influence experience or behaviour that has a positive impact on the majority of firms in the industry. If a policy cannot influence this behaviour and have a positive impact on a high proportion or distribution of those firms, the policy is not able to claim that it is effective. The challenge of policy effectiveness in reaching its own aggregate growth goals thus depends upon the kinds of experience in the industry, the distribution of those experiences, and the extent to which policy makers target interventions to impact those experiences in a manner that firms will actually use and not just ignore. So for GVC to be an effective policy, we need to examine whether the theoretical framework is relevant in the real world and whether it can have an impact on the greater proportion of firms in the industry. In addition, we would like to examine which variables are key to different growth patterns between the textile and clothing sectors. This therefore leads to the second question that will test the GVC theoretical framework:

A policy ideas effectiveness question:

'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to patterns in the governance of the networks they are linked to?'

Finally, the scope of the business model implied by GVC is too simple and different from business models proposed by business literature. The related business literature suggests that even firms in the same industry have different ways of defining their business model, which implies that there are differences in the components and ingredients adopted by each firm. A more in-depth understanding of local firms in adopting various business models and their impact on firm performance is therefore important for effectiveness of the policy. This gives us the third main research question:

A policy ideas effectiveness question:
'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to differences in business models of firms in this industry?'

The objectives of this research are to examine Thailand's textile and clothing industry structure and operation; in particular it will try to examine the role of distribution activities and provide a comparative analysis between the textile and clothing value chains of Thailand. It will then try to test and confirm the aforementioned hypotheses.

My main motivation behind this thesis is to investigate and fill in current gaps in Thailand's understanding and policy recommendations for the industry. The thesis intends to incorporate the missing international dimension that is likely to help policies be more effective. To develop better and more effective government policy requires better and clearer understanding of industrial policy. In addition, trading intermediaries and distribution channels are very important routes to the overseas market for Thai firms; Thailand still lacks a true understanding of the roles of the distribution channel and its impact on export performance and industrial upgrading. The results of the research will be used to complement the existing set of policies for the industry. The prospect of upgrading for Thailand's textile and clothing companies will be identified and recommended later in the paper.

Figure 1.4: Research strategy

Research Objective   <‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑ *Research Strategy* ‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑>

| To test whether GVC drives performance in global context | → | Literature review | → | Firm and industry expert interview | → | Firm survey | → | Theoretical testing and analysis |

- To understand development experience of the industry
- To understand past government policy and its implications
- To understand the implications of trade liberalisation for the industry
- To understand in depth GVC framework and its development

- Construct industry structure and organisation
- Develop better understanding of firms in the industry
- Review perception gap between policy makers and real world

- Confirm the structure and organisation found from firm interview phase
- Collect variables associated with GVC for testing

- Test whether variables associated with GVC drive performance of the industry according to the theoretical framework

To be able to reach the conclusion of the research question, we will first conduct a literature review of the industry's structure and economic development policy. This will help us understand industry development experiences and factors that drive growth in a protected and liberalised environment. Liberalisation will also be reviewed to identify and understand how it affects the situation. Government policy, particularly the 2003 and 2007 master plans, will be discussed to evaluate gaps in thinking about competitiveness intervention.

We will then conduct interviews with firms from both textile and clothing value chains and trading firms to draw a picture of the industry structure and understand how it operates. Several government officers will also be interviewed to identify key government issues and their perspective on the industry. The aim is to understand the roles and activities that each organisation performs. Furthermore, this will help us understand strategy and how the private sector views its industry. Industry expert and policymaker interviews will help us identify and understand their views on the industry and the rationale behind their industry policies; it will also help us identify gaps between government perception and industry structure and how it actually operates in practice. The results of the interview will be 'triangulated' with the literature review and survey to derive an industrial organisational structure for Thailand's textile and clothing industry.

After the firm interviews, we will collect data by conducting a firm survey. The survey method will be used to verify and confirm the findings obtained from the early research stage. This is also an attempt to capture information that cannot be explored during the interview stage. Again, the survey attempts to capture variables associated with the GVC and business model concept. The data will be used to confirm the industry structure and organisation found from firm interviews. The

results of the survey will be 'triangulated' with the literature review and firm interviews and analysed to derive an organisational structure of Thailand's textile and clothing industry. The data will also be used to test and confirm the relationship between variables associated with GVC and firm performance. In order to conclude which variables in each test have a strong association with the GVC framework, they should fulfil some criteria to illustrate their unique properties. If variables pass the test, this will imply that the theory could be relevant to the real world and government can focus on tackling these variables to upgrade its industry.

1.3 Thesis structure

Figure 1.5: Research outline

Chapter 1 Introduction to the Research	Chapter 2 Industry and Literature Reviews	Chapter 3 Research Methodology	Chapter 4 Research Findings	Chapter 5 Theoretical Test and Performance Analysis	Chapter 6 Research Conclusion and Discussion
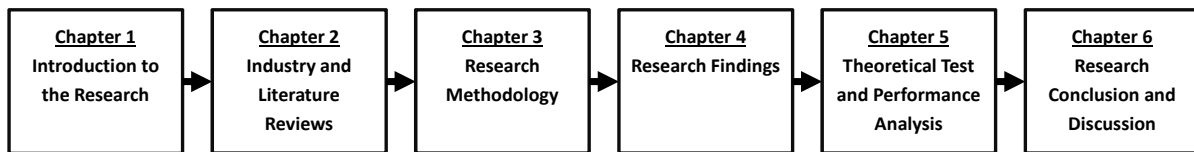
From the research strategy above, each step in this thesis paper is organised as follows. **Chapter 1** describes the background of the research, its problems, significance, methodology and limitations. It proposes that in the globalisation and trade liberalisation era, the government or policy makers' view on the textile industry as a single value chain does not take into account the importance of international intermediaries and merely focusing on the domestic chain could have implications for an effective industrial policy. The thesis will focus on a mixed qualitative and quantitative research method to develop the conclusion.

Chapter 2 reviews Thailand's textile and clothing industry and policy from literature review and expert interviews. It will explain various government policies to support the industry in different phases of development, from export promotion to liberalisation. It will illustrate that export performance of the industry has declined significantly and this could attribute to gaps in government policy. The evolution of Global value chain and its predecessor concepts such as commodity chain and global commodity chain will be reviewed and discussed. Global value chain (GVC) and upgrading concepts will be reviewed and examined closely. In addition, components of the business model concept will be discussed in detail, along with its definition and implications. From this review, we will derive the research questions for the thesis, from which we will test whether variables associated with GVC and business models differentiate sector performance.

Chapter 3 discusses the research methodologies and their rationales in analysing and examining the proposed research questions. Research methods are conducted to examine the structure of the industry and test variables associated with GVC and business models and their relationship with sector performance. The thesis requires a mix of qualitative and quantitative research methods to derive an appropriate conclusion. The qualitative method employed herein consists of literature review, expert interview and firm interview, while the quantitative method consists of firm surveys to collect related data. After data has been collected, it is then analysed using triangulation and statistical methods to derive the findings.

The analysis and findings are presented in chapters 4 and 5. **Chapter 4** provides findings and analysis of the structure and organisation of Thailand's textile and clothing industry as a result of firm interviews and survey data. This chapter attempts to argue that, in contrast to a single value

chain viewed by government and policy makers, the textile and clothing industry is far more complex and we need to look at different perspectives to be able to segregate the information. By examining industry information and data in various ways, including research review, data analysis, expert interview, firm interview and survey, we can deduce that Thailand's textile and clothing industry has at least four value chains which have different characteristics, export markets, distribution channels and business models. The following table summarises the features of the four chains.

Chapter 5 will focus on statistical testing of the variables associated with the GVC and business model concept. In this chapter, we attempt to answer the thesis question 'what variables differentiate export performance of textile and clothing sectors?'. The results illustrate that, at aggregate level, we are unable to see variables associated with GVC or business models that have a distinct relationship with performance. The results we found are quite scattered and illustrate that there is weakness in 'macro-' or 'aggregate-' level analysis. We are unable to find a strong relationship and connection between variables and performance, no matter how we reclassify or recategorise variables according to various theoretical frameworks.

Chapter 6 presents the conclusion and a discussion on the practicality and limitations of the GVC and business model concept and particularly its implications for policy and the policymaking process. It argues that the findings of the thesis raise the question as to the validity of certain government policies, their formulation process, and the application of global value chain and business model literature in practice. It also argues that, though GVC or business models do not have a distinct relationship with performance, these frameworks are still useful in helping policy makers understand the industry better if they use them appropriately. For example, GVC should be used to help segment the industry and as a means to identify variables that differentiate performance, while the business model should be used to analyse at firm level. It also shows that government policy on Thailand's textile and clothing industry is ineffective, which is a result of the policymaking process. At the end of the chapter, a new approach to policy making is then proposed with a discussion on institutional issues that may constrain the implementation of the new policymaking approach.

1.4 Research findings and main arguments

The key thesis findings can be summarised as follows:

1) **The policymaking process is problematic and needs fixing to incorporate variations in experience and segmentation of firms into various groups**

    The way the Thai government views the industry at aggregate or macro-level from a top-down approach rather than from a bottom-up or business point of view leads to existing research seeing it as a single value chain. This aggregate view has led to a one-size-fits-all policy for the textile and clothing industry. However, the thesis findings illustrate that the textile and clothing industry in Thailand is far more complex and consists of a number of value chains. By examining and reclassifying the industry information and data in various ways and from different perspectives, including research reviews, data analysis, expert interview, firm interview and survey, we are able to deduce that Thailand's textile and clothing industry has at least four value chains, instead of one. These value chains have different characteristics, export markets, distribution channels and business models.

    The findings imply that government policy might not be appropriate for upgrading the industry; they also question the policymaking process and the way government adopts a value chain framework in Thailand. There could be flaws in policy making in Thailand that are unable to detect the different characteristics and organisation of various chains in the industry. Furthermore, policy makers and government seem to adopt an analytical framework without having a strong understanding of its applications and limitations.

    This means policy makers or government need to focus on a better policymaking process which allows them to better understand the industry structure, how firms operate and particularly when and how to intervene to support the industry. Better knowledge and skill sets are also required from policy makers. In addition, more effective tools or methodologies are required to help policy makers better analyse and examine strategic issues of the industry.

2) **There is no distinct relationship between variables associated with GVC and business models with firm performance**

    The results of the research illustrate that many theories, such as GVC and a simplified business model, that generalise the relationship between key variables and firms' performance, do not hold true in the empirical test. The conclusion of the statistical

examination rules out that all the factors associated with the GVC framework and business model have any strong or distinct relationship with export performance. The results show the huge variability and complexity of how firms, their relationships, strategies, performance and perceptions are composed. They imply that if these factors are so heterogeneously distributed across firms in different categories, they cannot be key factors that explain the growth/decline/constraint patterns.

The results mean that any attempts to theoretically explain what determines growth and decline must recognise the fact that it is not a simple categorical generalisation. These theories should not be used or applied to determine performance of the industry, however they still are applicable and valuable in industry analysis and in practice. Furthermore, this research has strong implications for industrial policy making. Many policy makers bluntly adopt analytical frameworks they believe will have an impact on industry performance to identify strategic issues of the industry in which they are interested without having a good understanding of industry structure and operation. This means that government needs to understand the application and weaknesses of analytical tools before adopting them to develop policy.

3) **Change in policymaking processes and applications of GVC and business models**
The findings of this research illustrate there are misperceptions of industry structure, lack of in-depth understanding of how firms operate in the industry and lack of awareness of the limitations of theoretical frameworks. These problems lead to ineffective government policy.

To have effective and appropriate industrial policy, government and policy makers need a better policymaking process that helps researchers to clearly distinguish different segmentations or business models within the industry. The new approach provides a two-step approach, which uses top-down and bottom-up methods to collect information to map the industry structure and help to better understand business models of firms in each value chain.

The new approach begins with the top-down method which utilises a value-chain and business model framework to help segment and identify various chains within the industry. This will help in understanding the industry structure and identify key variables that differentiate firm performance in each value chain. The bottom-up method is then used by analysing business models, operation and strategy of firms in well- and poorly performing groups, to identify specific things that these better performing firms

do or achieve at firm level. This will provide an understanding of the experience that firms face and the models they use in different situations. The policy should be evaluated and concluded from analysis and examination of many case studies.

In summary, the findings of this research confirm our concerns and the problem that there are misperceptions of industry structure, lack of in-depth understanding of how firms operate in the industry and lack of awareness of the limitations of theoretical frameworks. These problems lead to ineffective government policy.

The findings of the thesis show that there are many value chains within an industry and theory that cannot be generalised. This implies flaws in the validity of certain government policy, industry analysis and policy-formulation process, and the application of global value chain and business model literature in practice. The typical industry research methodology and the approach we adopt gives us an inaccurate picture of industry structure, dynamics and competitiveness, leading to ineffective industrial policy. It is therefore important for government and industry researchers to recognise such shortfalls in the method and attempt to develop better tools to analyse and understand the industry structure and its dynamics in more detail. To have better policy, policy makers require better methods or a different perspective on the industry.

Though this thesis is unable to derive recommendations for various value chains in the textile and clothing industry, we propose that industry analysis requires a better approach to understanding industry structure and organisation. It will argue that a change in the policymaking process will ultimately require a change in the role and responsibilities of various government agents that revolve around industrial policy making.

1.5 Main contribution of the DBA

This research contributes to knowledge of the Thai textile and clothing industry empirically through case study and theoretically through evaluation of the benefits and limitations of theoretical frameworks associated with global value chain and business model frameworks. The results should help us understand why the government's current policymaking process is ineffective and ultimately provide a better methodology to improve it.

Currently much attention is paid to domestic and local linkage in Thailand's textile and clothing industry. However, international bodies like the World Trade Organization and World Bank argue that trade liberalisation encourages firms to pursue export opportunities through international production networks, which would have a significant impact on developing countries like Thailand. Global value chain research has established that there is a linkage between governance, upgrading and firm performance. However, from my experience policy makers – who usually approach analysis from a macro-economic point of view – use limited analytical tools to identify strategic issues without having a good understanding of industry structure and operation. By building a more accurate picture of the industry's organisation, relationships and performance dynamics, and of its position in the world market, this thesis will help Thai policy makers to develop and formulate a better upgrading policy for the industry in the future. If the results of our research confirm that variables related to the GVC concept have a strong relationship with performance, we are then able to simply develop public policy by improving those variables with confidence. In addition to contributing to the policymaking process, the thesis will help us look beyond current policy to focus on global linkage and examine how the textile and clothing sectors can work together to improve the performance of the whole industry.

Chapter 2: Industry and literature reviews

This chapter aims to review and have better understanding of the situation of Thailand's textile and clothing industry from the protection era until the liberalisation era. We will examine the industry and its economic development policy to help us understand industry development experiences and factors that drive growth in the protected and liberalisation environment. The implication of trade liberalisation and government policy will also be analysed to identify and understand the effect of the situation. We will look at the global value chain framework so that we know and understand development of the theory and have a better understanding of the subject. During our review of GVC, we also discovered an alternative theory for firm upgrading, i.e. the business model framework. This model will be introduced and explained in detail.

The first part of this chapter will review the situation of Thailand's textile and clothing industry as well as its industrial policies from the early 1970s to the present day. The impact and implications of such policies on the growth of the industry will also be examined, particularly in relation to the 2003 and 2007 policies. The second part of the chapter will then focus on a review of the global value chain and industrial upgrading framework. This framework will provide us with a better understanding of the dynamics of the industry and the interactions as well as relationships between players in the globally competitive landscape. Furthermore, it will help policy makers find an effective way to support industry firms in moving up the value chain, thereafter designing a more adequate set of policies. The business model framework will also be introduced as an alternative theory for firm upgrading. By and large, the reviews of industry policies and the theoretical framework will help establish the appropriate key research questions for this thesis at the end of the chapter.

2.1 Review of Thailand's textile and clothing industry situation

Table 2.1: Contribution of textile and clothing industry to Thailand's GDP (at 1988 prices)

(Million US$)

	1992	1995	2000	2005	2009	2010
GDP (1988 prices)	2,282,572	2,933,168	3,008,401	3,858,019	4,263,139	4,596,112
GDP of Manufacturing	672,636	909,316	1,096,168	1,499,882	1,645,015	1,873,170
GDP of Textile Industry	65,592	70,350	75,322	80,770	70,157	n.a.
GDP of Clothing Industry	68,225	75,341	70,901	78,844	74,437	n.a.
GDP of Textile and Clothing Industry	133,817	145,691	146,223	159,514	144,594	n.a.
% of GDP	5.9	5.0	4.9	4.1	3.4	n.a.
% of GDP of Manufacturing	19.9	16.0	13.3	10.6	8.8	n.a.
% of GDP Growth	8.1	8.8	4.8	4.6	-2.3	7.8
Total Export	824,644	1,406,311	2,768,065	4,438,691	5,197,121	6,176,424
Growth Rate	13.6%	23.6%	25.0%	14.6%	-11.2%	18.8%
Textile & Clothing Exports (Mil Baht)	119,081	162,935	223,512	266,696	217,341	238,663
% of Total Export	14.4	11.6	8.1	4.7	4.2	3.9
Exchange Rate Baht/US$	25.40	24.92	40.17	40.22	34.29	31.69
No. of Employees in Textile Industry ('000s)	224.5	266.9	241	238	234	232
No. of Employees in Clothing Industry ('000s)	813.4	877.0	843	826	811	809
No. of Employment in Textile & Clothing Industry ('000s)	1,070.6	1,143.9	1,084	1,064	1,045	1,041
% Employment in Real Sector	29.7%	26.1%	24.4%	19.0%	19.4%	19.5%

Source: The National Economic and Social Development Board (NESDB), National Statistical Office (NSO)
and Thailand Textile Institute

The textile[1] and clothing[2] industry has historically been well established and played a very important role in the Thai economy. Prior to 1995, it was a major source of income and employment for the country. In 1992, the industry produced a total output worth 133.8 billion Baht (US$ 4.5 billion) (table 1), which accounted for 5.9% of Thailand's GDP, the highest contribution to the national GDP, and 19.9% of the GDP of the manufacturing industry. In addition, the industry was a major source of income for the Thai economy. In 1992, it produced an export value of 119.1 billion Baht (US$ 4.0 billion), accounting for 14.4% of total exports and ranking it as Thailand's number one export. Moreover, the industry provided jobs for 1.08 million people in 1992, of which 77.3% were employed in clothing and 22.7% in textiles. This accounted for 29.7% and 3.3% of the real sector and the nation's total employment respectively. Statistically, these figures show that the textile and clothing industry was a major source of income and employment for Thailand's labour force, hence any changes to the business environment of the industry would be expected to have a major impact on their standard of living.

However, over time, the evolution of the sector has demonstrated declining importance in the national economy and employment. The industry's share of the national GDP has, by and large,

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[1] Textile (SITC 65: TEXTILE YARN, FABRIC, ETC.) includes textile yarn, fabrics, made-up articles, not elsewhere specified., and related products
[2] Clothing (SITC 84: CLOTHING AND ACCESSORIES) includes articles of apparel and clothing accessories

continually decreased over the last decade, from 4.9% in 2000 to 3.4% in 2009. Additionally, its share of the Thai export sector has demonstrated a constant declining trend over the same period, from 8.1% in 2000 to 3.9% in 2010. Similarly, employment in the sector also slowly decreased from 1.08 million employees in 2000 to 1.04 million in 2010.

Table 2.2: Major exporters in the world textile and clothing industry

	2010 Export Value US$	1995 Export Value US$	2010 Share	1995 Share	2010 Ranking	1995 Ranking	CAGR 1995-2010
China	206,691,783,855	37,967,072,254	40.1%	12.0%	1	1	12.0%
Hong Kong	35,356,280,957	35,111,958,779	6.9%	11.1%	2	2	0.0%
Italy	32,906,256,776	26,938,338,304	6.4%	8.5%	3	3	1.3%
Germany	30,215,386,174	21,871,826,944	5.9%	6.9%	4	4	2.2%
Turkey	21,723,914,467	8,645,300,736	4.2%	2.7%	5	10	6.3%
Thailand	**8,061,048,684**	**6,945,788,672**	**1.6%**	**2.2%**	**12**	**13**	**1.0%**
World	**515,728,302,813**	**316,226,536,123**					**3.3%**

Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

In terms of the world market, the Thai textile and clothing industry's share has drastically declined. Compared to other countries (table 2.2), Thailand's export growth is in the lower tier. From 1995 to 2010, the compound annual growth rate (CAGR) of world textile and clothing industry exports reached 3.3%, while that of Thailand only reached 1.0%. Moreover, the export value of Thailand's textile and clothing industry demonstrated unimpressive increases during the same periods, even with considerably cheaper products, mainly due to a significant depreciation of the Thai currency (Thai Baht) of nearly 50% during the 1997 Asian crisis. Consequently, the share of Thai's textile and clothing and textile industry in the world market notably shrank from 2.2% in 1995 to just 1.6% in 2010, with a slight fall in ranking from 13th to 12th.

Figure 2.1: Revealed Comparative Advantage indicators of Thailand's textile and clothing industry
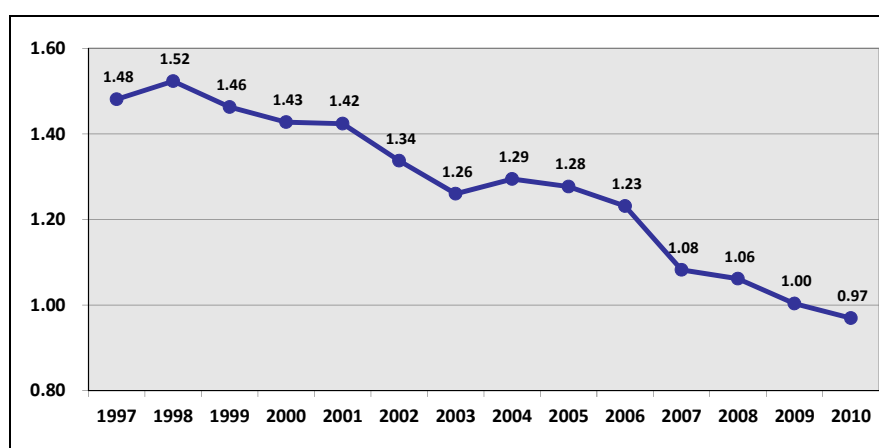
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

The considerably unimpressive export performance of Thailand's textile and clothing industry is deemed to have caused the level of comparative advantage to decrease significantly. As demonstrated in figure 2.1, the Revealed Comparative Advantage (RCA)[3] indicators for the industry radically decreased from 1.48 in 1997 to 0.97 in 2010.

However, the reasons behind such an expansion and decline of Thailand's textile and clothing sector cannot be simply explained. The sector's performance has been influenced by many factors, including government policy and the global context. The following sections will review past and present policies and examine the detail of various issues that could have influenced and affected the export growth of Thailand's textile and clothing sector.

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[3] Revealed comparative advantage is a measure of comparative advantage of a country's exporters of a particular product or class of goods. In this paper we use Balassa's (1965) measure of relative export performance by country and industry/commodity, defined as a country's share of world exports of a commodity divided by its share of total world exports. Commodity that has a ratio greater than one may be considered indicative of the country's underlying comparative advantage, relative to products with ratios less than one.

2.2 Economic development of Thailand's textile and clothing industry

Dating back to the 1960s, the textile and clothing industry is considered one of the oldest industries in Thailand. Its development can be simplified into three phases: industrialisation (1960-1995), liberalisation (1995-2003) and competitiveness (2003 to present).

Industrialisation, the longest development phase, began in the early 1960s, at the same time that Thailand implemented its first National Economic and Social Development Plan, which aimed to promote industrial development, and lasted until 1995. The government exercised both import substitution and export promotion policies to stimulate the industry's growth, resulting in the highest export growth witnessed in the three development phases.

The second development phase was liberalisation and light-handed government policy between 1995 and early 2000. During these periods of development the quota system was lifted and free-trade agreement was initiated along with the Asian crisis started by Thailand, causing the Thai Baht to devalue. Moreover, as global competition started to intensify Thailand's competitive advantage fell, as it was unable to compete with other low-cost producer countries.

The third development phase was launched in 2003, with industrial policies being altered in order to rejuvenate the industry's declining performance and growth rate. The government initiated and implemented a number of measures to support the industry, including cluster initiatives, brand building and the Bangkok Fashion City project. However, the nation's comparative advantage indicator for the sector did not show any signs of improvement due to the industry's moderate growth during this phase of development.

As can be seen above, both the Thai government policies and global context have affected the export growth and competitive abilities of Thailand's textile and clothing industry in some way. The following section will elaborate on how these factors could have influenced the industry's performance in each development phase.

2.2.1 The industrialisation phase, 1960-1995

This phase marked the beginning of the industry and its strong growth in domestic production and export value. The government policy on textiles and clothing during this period followed a typical economic development process pattern (see table 2.3). It began with import substitution (1960-71) followed by export promotion (1972-81) and between 1982 and 1995 the impact of such policies was manifested. The strong growth and increasing importance of the textile and clothing industry prior to 1995 were believed to be the result of protectionist state policies implemented between 1960 and 1995.

Table 2.3: Chronology of Thailand's textile and clothing policies

Time	Policy Description
Import Substitution Phase (1960-71)	
1955-1957	Import Restriction Act of 1955 on cotton yarn imports, amended in 1957 to include cotton fabrics
1959	Establishment of the Board of Investment (BOI)
1960	BOI issued Promotion of Industrial Investment Act B.E. 2503 (1960), which focused on investment for the domestic market
1961	NESDB issued first National Economic and Social Development Plan (1961-1966) which emphasised promotion of industrial development instead of import. Textile industry was also a targeted industry.
1962	BOI determined textile industry as a high priority, thereby promote investment incentives to attract more foreign investors
1964	BOI suppressed investment promotion for thread spinning and weaving industries
1967	BOI promoted investment for downstream textiles, i.e. ready-to-wear garments
1970	Government raised import tariff to 100% to protect the industry from competitors, especially textiles from Pakistan
1971	Government restricted promotion of the textile (knitting) industry, prohibiting capacity expansion and the establishment of new textile firms Government suppressed promotion of textile manufacturers who produced for the domestic market

Time	Policy Description
Export Promotion Phase (1972-81)	
1972	NESDB issued third National Economic and Social Development Plan (1972-1976) which shifted toward outward-looking policy. Thailand began to export textiles for the first time. Government provided various assistance to producers, e.g. 100% tax rebates on factors of production, subsidies on electricity costs
1973-74	Investment promotion resumed for weaving and spinning firms for export only and allowed other existing firms to expand by no more than 50% Illegal establishment of small textile manufacturers and import of out-dated machinery from Taiwan
1975-76	Thailand applied for membership of the Multi-Fibre Agreement (MFA). The MFA, which began in 1975, oversees a textile quota system for the export of garments and textiles from developing countries to the USA, Canada, European Union (EU) and Norway
1978	Expansion of man-made fibre production, spinning, weaving, printing and dyeing, and clothing firms limited, except those granted privileges by BOI prior to March 1978
1979	Capacity expansion allowed for firms with fewer than 30 sewing machines and exporting to non-quota markets
1980	End of prohibition on investment in the clothing industry
1981	Devaluation of Thai Baht on 12 May and 15 July
Industry Expansion Phase (1982-1995)	
1984	Export-oriented spinning and weaving industries were allowed to establish new firms and expand their capacities. The government suppressed capacity expansion for domestic ready-to-wear clothing but gave incentives to exporters of ready-to-wear clothing Devaluation of Thai Baht on 2 November
1986	BOI provided incentives to large weaving and spinning firms with capital of more than 2 million Baht
1987	Textile capacities expanded and the establishment of new firms producing both for export and the domestic markets and with BOI privileges allowed Cabinet cancelled production capacity control on thread, spinning, weaving and knitting factories
1991	Government liberalised establishment and expansion of the ready-to-wear clothing industry
1994	Multi-Fibre Agreement (MFA) terminated
1995	Free Trade Agreement according to GATT/WTO agreement became effective from 1 January 1995. Government began to reduce import tariff from 60%.

Import substitution policy (1960-71)

Prior to 1960, the role of the Thai government was to provide a stable investment environment for the private sector (Chaloemtiarana, 1979). However, in 1961 the Thai government approved the first National Economic and Social Development Plan (1961-1966) initiated by the Office of the National Economic and Social Development Board. The plan's main focus was on an import substitution policy. The Board of Investment (BOI) was also set up to incentivise investment in selected import-substituting industries, including the textile industry. The BOI Investment Promotion Act was amended in 1962, 1965, 1968 and 1972 to increase incentives for foreign firms to invest in Thailand. Moreover, the Thai government began to engage in a massive campaign to attract

foreign entrepreneurs to Thailand; it even guaranteed and granted licenses to foreign companies. Labour unions were also suppressed by martial law for years. In 1970, the government gave the industry up to 100% protection with the aim of sheltering it from subsidised products imported from Pakistan.

Export promotion policy (1972-81)

The idea of outward-oriented trade policies was widely discussed among Thai technocrats in the Office of the National Economic and Social Development Board (NESDB) in the late 1960s. However, Thai policy makers decided to put greater emphasis on promoting manufactured exports in the third National Economic and Social Development Plan (1972-1976). The objective was to promote manufactured exports that rested heavily on foreign direct investments and multinational corporations. The instruments of import protection existed simultaneously with instruments of export promotion.

The BOI still played a leading role in authorising and granting exemptions and privileges. For example, it introduced tariff exemptions on imported raw materials as an additional privilege for export-oriented promoted firms (i.e. for an export-sales ratio of greater than 30%). This was supplemented by the two existing tariff exemptions: tariff exemptions/drawbacks (Section 19 of the Custom Laws) given by the Department of Customs and tax rebate schemes given by the Fiscal Policy Offices (FPO). This, combined with the low wage rate in Thai manufacturing, made Thailand attractive as a location for export-oriented labour-intensive production bases with East Asian investors.

Industry expansion phase (1982-1995)

Between 1982 and 1995, the export promotion policy was sustained, while the import tariff still remained very high during this period. The government, especially the BOI, still provided investment incentives to export-oriented companies and controlled capacity for domestic producers. However, near the end of the 1980s, the government started to liberalise the sector by starting to cancel the production control of the up-stream producers, i.e. thread, spinning, weaving and knitting factories. The government also lifted prohibition on capacity expansion for domestic ready-to-wear clothing in 1987. In 1995, it started to reduce import tariffs to comply with the Agreement on Textiles and Clothing (ATC). Strong growth of the textile and clothing industry was witnessed, resulting from the effect of the Multi-Fibre Agreement (MFA) and devaluation of the Thai Baht in November 1984. The total export value of the textile and clothing industry was at its peak at nearly US$ 7 billion in 1995.

Policy implications prior to 1995

The industrialisation policies had a very positive impact on Thailand's textile and clothing industry. The government's model of using an import-substitution policy to foster textiles firms to be domestic raw material provider to support growth in clothing sector. At the same time, the clothing sector was perceived by the government as the key growth driver for the Thai economy by employing the export-promotion policy. The production rates of the textile and clothing industry illustrated in table 2.4 below demonstrate the positive impact of these policies. The production of clothing and man-made textiles increased significantly; clothing production increased approximately five fold between 1969 and 1986, while man-made fabric, yarn and fibre increased by 15, 57 and 131 times respectively.

Table 2.4: Textile and clothing production in Thailand

Year	Clothing	Fabrics		Yarns		Man-made fibre
		Cotton	Man-made	Cotton	Man-made	
Units	Million Pieces	Million Square Yards	Million Square Yards	'000 tons	'000 tons	'000 tons
1969	217	365	96	34	3	1
1970	249	389	108	49	7	1
1975	488	605	523	71	64	39
1980	722	838	983	96	131	113
1981	786	872	1,073	97	131	113
1982	822	936	1,146	101	132	98
1983	883	976	1,227	110	137	114
1984	889	1,032	1,313	118	153	115
1985	946	1,088	1,406	131	161	127
1986	1,035	1,139	1,494	140	170	131
CAGR 1969-80	12%	8%	24%	10%	41%	57%
CAGR 1969-86	10%	7%	18%	9%	27%	35%

Source: Thai Textile Manufacturing Association

Export value was also proof of the positive impact of these industrialisation policies on the industry, with impressive increases in export growth. Total exports increased from US$ 2,168,309 in 1962 to US$ 6,945,788,672 in 1995, a 3,200-fold increase in 30 years or an average of 33.1% p.a. The export of textiles increased from US$ 1,466,373 in 1962 to US$ 1,937,373,440 in 1995, a 1,321-fold increase in 30 years or an average of 30.2% p.a. The export of clothing increased from US$ 701,936 in 1962 to US$ 5,008,415,232 in 1995, a 7,135-fold increase in 30 years or an average of 40.9% p.a. The average export growth rate (table 2.4) was very high at the beginning of the policy implementation. In the 1970s, export growth increased by 58.1% p.a., with the main growth coming from clothing exports of 95.0% p.a., while textile export growth reached 52.4% p.a.

Figure 2.2: Thailand's textile and clothing exports
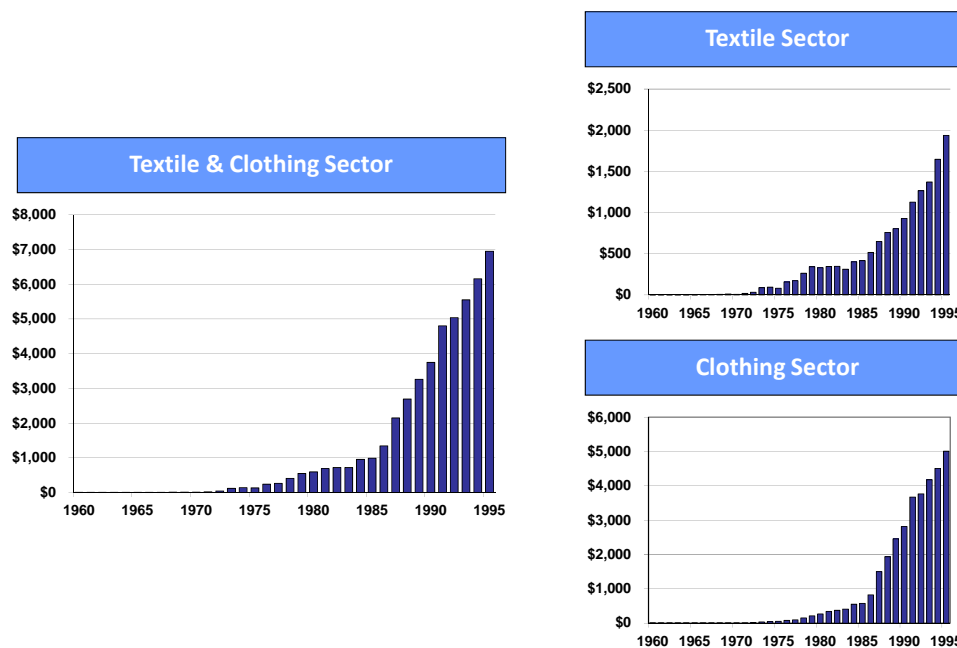
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Table 2.5: Average growth rate of Thailand's textile and clothing exports

	1960s	1970s	1980s	1990-95	1960-95
Textiles	40.1%	52.4%	9.7%	15.9%	30.2%
Clothing	3.8%	95.0%	29.5%	12.9%	40.9%
Total	31.8%	58.1%	20.7%	13.6%	33.1%

Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

The government also succeeded in changing the export structure of the industry. In the 1960s, 77.8% of industry exports were textile exports, while only 22.2% were clothing exports. By the 1980s, the export structure had altered significantly, with 59.7% of exports contributed by clothing products and 40.3% coming from textile products. By 1995, the export of clothing reached as high as 74.5% of the industry's total exports.

Table 2.6: Breakdown of Thailand's textile and clothing exports

	1960s	1970s	1980s	1990-95	1960-95
Textile	77.8%	70.3%	40.3%	25.5%	55.0%
Clothing	22.2%	29.7%	59.7%	74.5%	45.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

The industry's historical data suggests that the government policy implemented to help boost the industry's performance and growth might have been successful in creating 'a vertically organised' relationship between the textile and clothing sectors from 1970 to 1990. It utilised the import substitution policy for the textile sector to increase its output and production in order to

supply locally produced materials for clothing production, which in turn was supported by the export promotion policy. However, the data also suggests that some changes began to emerge in the early 1990s. Between 1990 and 1995, the growth in textile production had outstripped the demands of local garment producers. Moreover, Thai textile producers started to shift their focus towards the export markets and their main drive of growth; hence they did not just concentrate on simply supplying the domestic garment producers. It was in this period that we can also witness the emergence of a pattern that, as we will discuss further below, has continued through to today. In this period, textile production started to manifest a stronger growth than that of clothing production. For instance, while garment products contributed the highest export values for Thailand at the time, the growth of textile exports began to outstrip that of garment exports in the 1990s. Additionally, the average export growth of textiles was 15.9% compared to 12.9% of clothing exports between 1990 and 1995 (see table 2.5).

The beginning of this structural shift appeared to coincide with anticipated changes in the international regulatory environment. From the 1970s to the 1990s, the Thai government's strategy to build a vertically organised industry was enabled by an international system of trade regulation known as the Multi-Fibre Agreement (MFA). The MFA established the quotas and preferential tariffs on textile and clothing items, hence setting up restrictions on exports to major countries such as the United States, Canada and many European countries from the early 1970s. The system was designed to provide some sort of protection to the domestic industries of the United States and European Union (EU) by limiting imports from potential competitors such as China (Thoburn, 2009). This arrangement enabled developed countries to bilaterally negotiate quotas with supplier countries, taking into account their competitiveness and the perceived threat to domestic interests in the importing countries.

Although the MFA was designed to protect firms in developed countries from low-cost imports believed to have posed threats to major domestic industries, the quota restriction tended to drive East Asian countries to constantly search for more labour-cost-effective locations, a strategy which was not prohibited by such a restriction. For instance, Hong Kong took the initiative to have offshore sourcing as early as the late 1950s to avoid quantitative limitations and duties on clothing exports to the developed markets. It sourced in Mauritius for the European market, taking advantage of its associate member status with the EC, while using Commonwealth status with the UK in Singapore (Au and Yeung, 1999; Gereffi, 1999; Jin, 2001). The quota restriction, instead of limiting quantities, resulted in increasing numbers of more labour-cost-effective locations that produced and exported apparel to the US market, therefore automatically forcing firms in the quota-restricted nations to upgrade into higher-end niche markets (Bonacich and Appelbaum, 2000). As a result, the protectionism increased the competitive capabilities of developing countries' manufacturers, who

learned to become more sophisticated with their technology, enabling them to produce more profitable products (Gereffi, 2002).

Thailand also experienced similar trends and effects from the MFA. There was an increase in the number of joint ventures from Japan, Taiwan and Hong Kong in Thailand in the mid-1970s as they were seeking a new location in an attempt to escape from the MFA or from the import controls imposed in the industrial countries. Such a trend continued during the 1980s due to the rise in labour costs in Taiwan and Hong Kong, as well as the appreciation of their currencies (Supachalasai, 1996). The benefits from the MFA therefore helped Thailand by curtailing sales of the three biggest textile exporters, namely Hong Kong, South Korea and Taiwan, in which the strong growth of textile and clothing exports to the USA and EU was witnessed. However, Thailand then reached its quotas by the late 1980s and the agreement has imposed limitations on the industry ever since.

2.2.2 The liberalisation phase, 1995-2003

2.2.2.1 The Agreement on Textiles and Clothing (ATC)

During this phase, the government's export promotion incentive was still in place, and the Thailand Textile Institute was established in late 1996 to develop Thailand's textile and clothing sector. However, the key factor believed to be the most influential to the textile and clothing industry during this phase was the replacement of the MFA by the WTO Agreement on Textiles and Clothing (ATC). The world trade in textiles and garments started to become more liberalised after the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) was finalised. Consequently, the importance of the MFA was being phased out as textiles were being purchased under the auspices of the GATT. The ATC, which replaced MFA, was signed in 1995 and launched a 10-year transition period that was gradually eliminating the quota restrictions on textiles and clothing. A full elimination was seen by the year 2005 and the sector was fully integrated into the GATT principles. In other words, the MFA that had governed approximately half of the world trade in textiles for two decades was finally eliminated. Retailers and other buyers were thus able to source textiles and apparel freely with no restriction on allowed quantity or supplier country and were only subject to the tariff system and the narrow set of transitional safeguards.

The liberalisation process was completed over a 10-year period (1995-2005), with MFA-restricted goods returning to normal GATT rules in three phases. At the start of each phase of integration, importing countries had to integrate a specified minimum portion of their textile and apparel imports, based on the total trade volume in 1990. The quota growth rate of products remaining under quota was also specified for each phase. In addition, import tariffs were reduced under this agreement, on both textiles and clothing, as well as on an extensive selection of other goods.

The first phase of the liberalisation process was initiated on 1 January 1995 with a 16% minimum trade integration and an increase in the quota growth rate to 16%. The second phase came at the beginning of 1998 with a specified minimum trade integration rate of 17% and an increase in the quota growth rate to 25% higher than the previous stage rate. The third phase started in 2002, with targets of an 18% integration rate and a 27% quota growth rate. Finally, all remaining products were integrated at the end of the transition period on 1 January 2005.

WTO Agreement on Textiles and Clothing

The completion of the Uruguay Round of negotiations resulted in an agreement to integrate trade in textiles and clothing into the GATT/WTO. In 1995, the Multi Fibre Agreement (MFA) was replaced by the WTO Agreement on Textiles and Clothing (ATC). The ATC is based on a 10-year transitional programme for the removal of all quotas by 1 January 2005. Liberalisation is to proceed along two paths. One concerns integrating textile and clothing trade into the WTO framework and the other is related to the application of accelerating growth factors for MFA quotas. The ATC is binding only for WTO Members and is subject to the same set of rules and a single system of resolving disputes, which is applicable to all WTO Agreements.

The Agreement requires a gradual phase out of the quota restrictions carried over from the MFA regime. Products covered by the Agreement are to be integrated in three stages. The Agreement states the percentage of products that must be brought under GATT rules at each step. If any of these products come under quotas, then the quotas must be removed at the same time. In these three stages the quota growth rates increase progressively from their base levels by increasing annual growth rates at each stage (Article 2.1). The former MFA growth rates will increase by 16, 25 and 27% respectively from their levels and will apply annually as described below. The percentages are applied to the importing country's textiles and clothing trade levels in 1990. Products brought under GATT rules at each of the first three stages must cover the four main types of textiles and clothing: tops and yarns; fabrics; made-up textile products; and clothing.

Percentage of products to be brought under ATC (including removal of any quotas):

In 1994, under MFA	Growth rate was 6%.
Step 1 1 Jan 1995 to 31 Dec 1997	16% of the total volume of each member's 1990 imports of textile and clothing products (minimum, taking 1990 imports as base) is freed from quota restrictions and integrated into WTO trade regime; 6.96% per year [6 + (0.16 X 6)]
Step 2 1 Jan 1998 to 31 Dec 2001	Further 17% of products was integrated in the WTO regime; 8.7% per year [6.96 + (0.25 X 6.96)]
Step 3 1 Jan 2002 to 31 Dec 2004	Additional 18% to be integrated; 11.05% per year [8.7 + (0.27 X 8.7)]
Step 4 1 Jan 2005	Full integration into WTO ATC (and final elimination of quotas) terminates the remaining 49% (maximum)

Source: O. Memedovic et al. (1999), pp. 255-258; 280-285; 279-307; and in WTO, "Trading into the Future: The Introduction to the WTO", www.wto.org.

To comply with the ATC, Thailand slowly reduced its import tariffs, as shown in table 2.7 below. Before 1995, the import tariff rate for textiles and clothing was witnessed to be as high as 100%, however in 1995 it ranged from 20 to 45% and by the end of 2005 from 3.3 to 5% for the textile sector while remaining at 30% for the clothing sector.

Table 2.7: Thailand's import tariff rate for textile and clothing products

	Synthetic Fibre	Yarn	Fabric	Clothing	Manufacturing
1974	20%	20-25%	60%	60%	n.a.
1978	20%	20-25%	80%	100%	32.9%
1982	22%	22-27.5%	66%	66%	32.9%
1984	30%	30%	60%	60%	23.8%
1988	30%	30-40%	80-100%	100%	23.8%
1990	30%	30%	60-80%	60-100%	n.a.
1993	30%	30%	60-80%	60-100%	n.a.
1995	20%	20%	40%	45%	n.a.
1997	10%	10%	20%	30%	16.4%
1999	10%	10%	20%	30%	16.4%
2003	5.9%	10%	18.8%	30%	15.4%
2007	3.3%	5%	5%	30%	9%

Theoretically, the quota system provides some competition restrictions and allows fewer competitive exporters to export more than their competitive share. As a result, these less competitive exporters would face market share losses. The export countries previously limited by the MFA would then gain from increased market access. However, at the same time, they would also face lower product prices because of increased competition. The concern of many small developing countries that relied heavily on clothing exports, including Thailand, would be the increasingly intense global market competition from much larger, lower-cost rivals, such as China, India and Bangladesh.

2.2.2.2 Impact of the Agreement on Textiles and Clothing (ATC)

The end of the MFA had a strong negative impact on Thailand's textile and clothing exports. The value of textile and clothing exports decreased significantly from US$ 6.9 billion in 1995 to US$ 5.6 billion in 1996, a decrease of 19.1%. However, the magnitude of such action on the clothing sector was more severe than on the textile sector, with clothing exports decreasing by 25.5% in 1996, from US$ 5.0 billion in 1995 to US$ 3.7 billion in 1996. Consequently, Thailand's clothing export value has become rather stagnant ever since, with an average growth rate of 0.19% p.a. In 2010, the export value of the clothing industry remained at US$ 4.3 billion, 14.2% less than the 1995 export value.

While Thailand's clothing sector has been losing its competitiveness, the textile sector has been doing reasonably well, with its ability to 'uncouple' itself from Thai clothing producers and establish itself as its own distinct value chain able to grow exports by itself. Textile exports decreased only by 2.4% in 1996, from US$ 1.9 billion in 1995 to US$ 1.8 billion in 1996. However, with their ability to adapt to changes in global competition from textile producers, in 2010 textile exports reached US$ 3.8 billion, nearly double the figure of 1995.

Figure 2.3: Thailand's textile and clothing exports
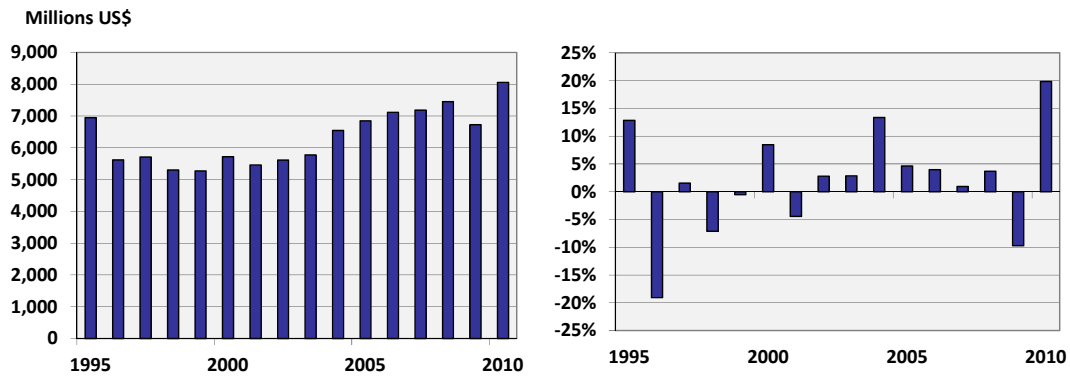
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Figure 2.4: Thailand's clothing exports
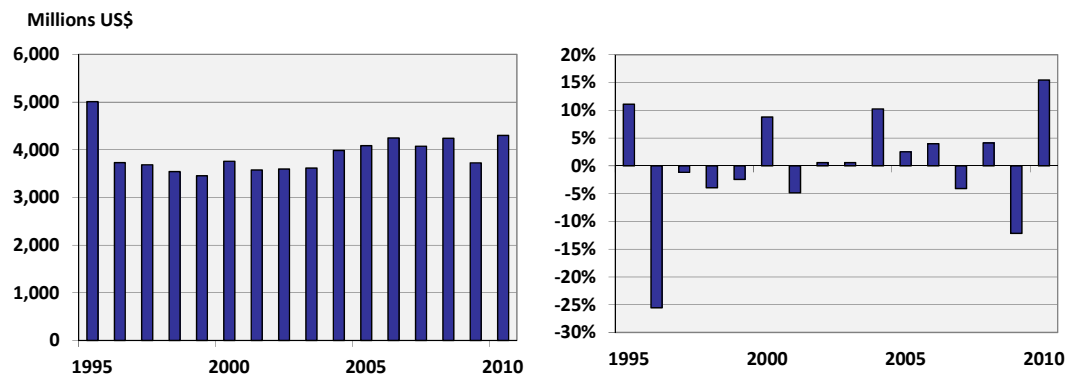
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Figure 2.5: Thailand's textile exports
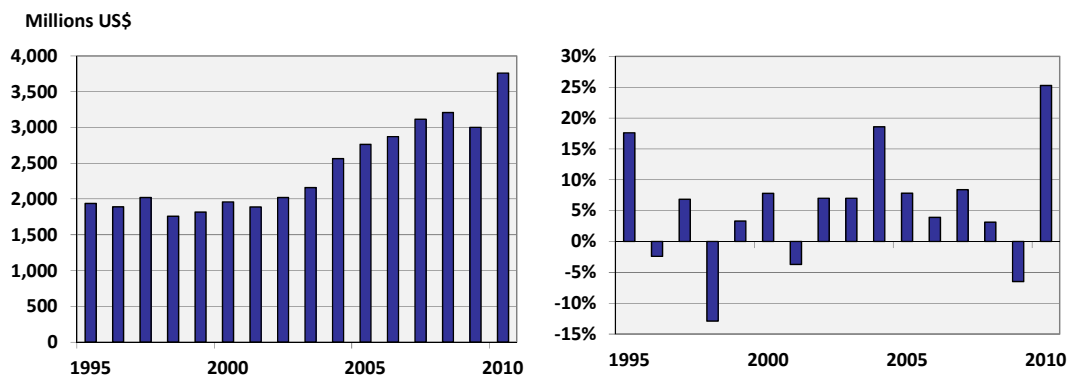
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Table 2.8: Average growth rate of Thailand's textile and clothing exports

	1995-2000	2001-2005	2006-2010	1995-2010
Textiles	3.38%	7.35%	6.84%	5.70%
Clothing	-2.20%	1.80%	1.45%	0.19%
Total	-0.65%	3.83%	3.74%	2.12%

Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Table 2.9: Breakdown of Thailand's textile and clothing exports

	1995-2000	2001-2005	2006-2010	2010	1995-2010
Textiles	33.1%	37.4%	43.6%	46.7%	37.8%
Clothing	66.9%	62.6%	56.4%	53.3%	62.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

The divergence in export growth of the textile and clothing segments of the sector consequently resulted in significant changes in the export structure of the industry. Between 1990 and 1995, 74.5% of the industry's exports came from the clothing segment and decreased to 53.3% in 2010, while textile exports increased to 46.7%. This can also be interpreted as there having been 'divergent growth pathways' of textile and clothing segments in the industry. The relationship was seen as slowly breaking down, with the textile segment becoming a competitive textile supplier to global/international clothing producers and, hence, relying less on Thai clothing producers alone.

Table 2.10: Major exporters in the world clothing industry

	2010 Export Value US$	2005 Export Value US$	1995 Export Value US$	2010 Share	2005 Share	1995 Share	2010 Ranking	2005 Ranking	1995 Ranking	CAGR 1995-2005	CAGR 2005-2010
China	129,820,286,391	74,162,523,252	24,048,878,329	42.1%	27.8%	15.3%	1	1	1	11.9%	11.85%
Hong Kong	24,048,955,252	27,292,317,856	21,297,136,924	7.8%	10.2%	13.6%	2	2	2	2.5%	-2.50%
Italy	19,962,316,146	18,646,640,759	14,148,001,792	6.5%	7.0%	9.0%	3	3	3	2.8%	1.37%
Germany	16,970,643,267	12,436,462,000	7,500,035,072	5.5%	4.7%	4.8%	4	4	4	5.2%	6.41%
Turkey	12,760,244,840	11,833,105,919	6,118,750,720	4.1%	4.4%	3.9%	5	5	6	6.8%	1.52%
Thailand	**4,299,578,290**	**4,085,275,543**	**5,008,415,232**	**1.4%**	**1.5%**	**3.20%**	**12**	**15**	**8**	**-2.0%**	**1.03%**
World	**308,244,587,151**	**266,883,901,413**	**156,774,797,501**							**5.5%**	**2.92%**

Source: UN Comtrade, Clothing (SITC 84) and author calculations

Table 2.11: Major exporters in the world textile industry

	2010 Export Value US$	2005 Export Value US$	1995 Export Value US$	2010 Share	2005 Share	1995 Share	2010 Ranking	2005 Ranking	1995 Ranking	CAGR 1995-2005	CAGR 2005-2010
China	76,871,497,464	41,050,173,532	13,918,193,925	37.1%	19.6%	8.7%	1	1	2	11.4%	13.37%
Germany	13,244,742,907	13,631,154,000	14,371,791,872	6.4%	6.5%	9.0%	2	4	1	-0.5%	-0.57%
Italy	12,943,940,630	14,827,058,734	12,790,336,512	6.2%	7.1%	8.0%	3	2	4	1.5%	-2.68%
USA	12,156,612,365	12,379,459,919	7,372,021,760	5.9%	5.9%	4.6%	4	5	8	5.3%	-0.36%
Hong Kong	11,307,325,705	13,829,729,702	13,814,821,855	5.5%	6.6%	8.7%	5	3	3	0.0%	-3.95%
Thailand	**3,761,470,394**	**2,764,314,454**	**1,937,373,440**	**1.8%**	**1.3%**	**1.2%**	**12**	**17**	**19**	**3.6%**	**6.35%**
World	**207,493,877,855**	**209,793,310,255**	**159,451,738,622**							**2.8%**	**-0.22%**

Source: UN Comtrade, Textile (SITC 65) and author calculations

Figure 2.6: Revealed Comparative Advantage of Thailand's textile and clothing industry
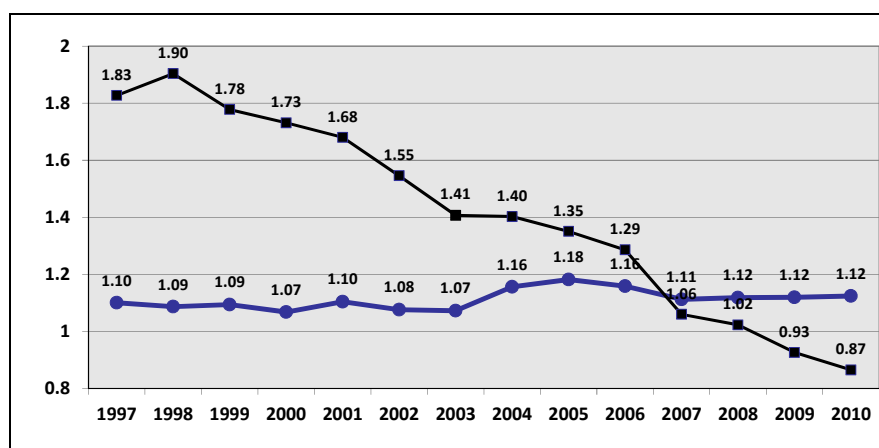
Source: UN Comtrade, Textile (SITC 65), Clothing (SITC 84) and author calculations

Looking at the internationally comparative view, such a divergent path could be more noticeable, with the growth in absolute value and export competitiveness of Thai exported textiles as well as notably increasing international market shares between 1995 and 2010. The global market shares of the Thai textile sector improved slightly from 1.2% in 1995 to 1.3% in 2005 and 1.8% in 2010. Moreover, the global export rank of Thailand's textile sector increased from 19th place in 1995 to 17th in 2005 and 12th in 2010.

In contrast, the export value of the Thai clothing sector was relatively stagnant, and has witnessed dramatically decreasing international market shares over the last 15 years. The global market share of the clothing sector decreased significantly from 3.2% in 1995 to 1.4% in 2010. The CAGR of clothing exports has been at -1.0% for the past 15 years. This resulted in Thailand's global clothing export rank decreasing from 8th in 1995 to 15th in 2005.

In addition, by examining the Revealed Comparative Advantage (RCA)[4] separately (figure 2.6), a similar pattern can be witnessed. The comparative advantage of the clothing industry has been significantly declining since 1997, while that of textiles has more or less remained mediocre. The RCA of the textile sector remained at quite an ordinary level, while Thailand's total export growth was seen growing at the same rate as its textile export growth. In contrast, the growth rate of clothing exports was far behind Thailand's total export growth. This, again, demonstrates the possible dynamic difference between the textile and clothing sectors.

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[4] Revealed Comparative Advantage is a measure of the comparative advantage of a country's exporters of a particular product or class of goods. In this paper we use Balassa's (1965) measure of relative export performance by country and industry/commodity, defined as a country's share of world exports of a commodity divided by its share of total world exports. Commodity that has a ratio greater than one may be considered indicative of the country's underlying comparative advantage, relative to products with ratios less than one.

Table 2.12: Contribution of textile and clothing industry to Thailand's GDP (at 1988 prices)

(Million US$)

	1992	1995	2000	2005	2009	2010
% of GDP	5.9	5.0	4.9	4.1	3.4	n.a.
% of GDP of Manufacturing	19.9	16.0	13.3	10.6	8.8	n.a.
% of GDP Growth	8.1	8.8	4.8	4.6	-2.3	7.8
No. of Employees in Textile Industry ('000s)	224.5	266.9	241	238	234	232
No. of Employees in Clothing Industry ('000s)	813.4	877.0	843	826	811	809
No. of Employees in Textile & Clothing Industry ('000s)	1,070.6	1,143.9	1,084	1,064	1,045	1,041
% Employment in Real Sector	29.7	26.1	24.4%	19.0%	19.4%	19.5%

The decrease in export value and competitiveness of the textile and clothing industry also implied a decline in employment in the sector. The number of employees in the industry reached its peak in 1995, with 1,144,000 people being employed in the entire industry, of which 877,000 people (76.7%) were in the clothing segment. The number of employees steadily decreased by around 9% to 1,041,000 in 2010. Therefore, the percentage of employment decreased from 26.1% to 19.3% in 2010.

2.2.3 The modern era: the competitiveness policy

The decline in export value, contribution to GDP and number of employees in the industry was treated as a vital economic and political problem that could inflict negative impacts upon other sectors in the Thai economy. Hence, the Thai government needed to urgently come up with a set of policies and measures designed to stimulate the textile sector's growth, given the sector's insignificant performance and growth between 1995 and 2000, and to upgrade competitiveness of the clothing sector, in which its RCA had constantly declined over the past decade.

Realising the problem, in 2000 the Thai government and its related government agencies proposed and approved the Textile and Garment 10-Year Master Plan (Ministry of Industry, 2003) in order to increase the competitiveness of Thailand's textile and garment industry. The master plan was revised in 2007 and called the Textile and Garment Master Plan for 2007-2011 (Ministry of Industry, 2007). Summaries of the development of the master plan for Thailand's textile and clothing industry are given below:

2.2.3.1 Textile and Garment Master Plan 2003

According to the Textile and Garment Master Plan 2003, the industry's vision was to develop the Thai textile industry to become leader of the South and Southeast Asian textile fashion business. Two general policies designed in an attempt to achieve such a vision include:

A) Encourage the establishment of other relevant components of the textile business necessary for balanced growth. Even though Thailand comprehensively integrates production lines from synthetic fibres to clothing, it still lacks other key components within the textile trading cycle,

including marketing, design, and research and development (R&D). Hence, Thailand's industrial policy for textiles must address such shortcomings by filling in the components to make the business cycle whole. In terms of marketing, development of marketing networks, traders and branding should be the main focus. Further product value creation will be possible through more innovation in product design. Additional R&D should be conducted on technical, marketing and administrative issues. Last but not least, development of other supportive industries should also be considered, including production of the required machinery, equipment, colours and other materials. This relies on proactive marketing strategies with emphasis on markets of nearby countries as the first priority. The textile market in Southeast Asia is expected to increase its openness while that of South Asia is currently lagging behind in terms of the product standards of both major raw materials and textiles themselves.

B) Foster the competitiveness of the textile industry with the main focus on knowledge and human resource development. Thailand must acknowledge that many key dimensions will arise as important ingredients of future success in doing business. Industry traders and experts point to key areas of development that would build greater competitiveness for the industry in a sustainable fashion. They include productive efficiency, product quality, quick delivery, market knowledge and flexibility, customer service, creativity and innovativeness, openness, willingness to improve, strong teamwork, social responsibility, labour and environment. Therefore, development of overall management in both micro and macro perspectives must come forth in parallel with constructive support from the public sector, especially on infrastructure, news and information, and provision of relevant knowledge.

In support of the above policies, seven underlying strategies were set up for the mission, as follows:

1. Develop Thailand to be the centre of textile trading and fashion for South and Southeast Asia: Strategy implementation requires cooperation between the public and private sectors. Significant activities that may need particular attention are exhibition of Thai textiles in foreign nations, building a product exhibition centre, and developing marketing networks. Public relations linking to image creation and brand development of Thai products should obtain support. Relations with certain textile institutes of neighbouring countries would also be desirable.

2. Increase the value added and variety of textile products: This is the most important issue for the long-term development of the industry. However, it means high investment in many aspects: machinery, software, experimental research, staff training and timing. The government could step in to assist in some areas such as building laboratories for new products, research funding, facilitation

of practical field trips, and creation of necessary networks among academicians and producers in promoting an appropriate match between research and market needs. Besides, purchase of models and production processes from abroad as well as strengthening ties with foreign research institutes could also prove favourable for the industry's well-being in the future.

3. Foster efficiency in the textile industry, especially in the production process and management system: Improving productive efficiency needs to happen in a multi-dimensional fashion with continuity. Major areas that need such continuous improvements should include the ISO system, Total Quality Management (TQM), benchmarking and learning best practice. In addition, there should also be involvement of knowledge dissemination, database creation and management competition so that awards can be given to any individuals or firms with impressive performances. The public sector may consider granting other forms of support to private operators, e.g. finance and purchase of certain expensive tools like software. Knowledge transfer can also be promoted through joint collaboration and/or activities by managers at various levels.

4. Promote cluster industries and supply chain: On the basis of mutual trust and common interests existing among business leaders, embracing the concept of 'supply chain management' should prompt desirable effects, e.g. cost reduction, improved quality and better customer service. The strategy should thus be carried out to advance the activities probably through more familiar trading partners as a starting point with earlier emphasis on certain products and issues. As the private sector acts as the initiator of activities, the government will otherwise facilitate by disseminating knowledge, providing necessary assistance, providing samples, conducting feasibility studies and discovering specific methodologies for the supply chain of each product group.

5. Emphasise development of the dyeing and printing industries: The main method is to promote a relocation of firms into particular industrial estates that have basic utilities already in place, e.g. water supply, transportation, communication, etc. The government must invest and provide financial assistance at low cost along with formulation of clear water-use policies, both in the short and long term. This will eventually allow firms to develop proper investment plans. Furthermore, specific knowledge from foreign research institutes can be provided in parallel with development of specialist research on the matter. Overall a framework to develop the dyeing and printing industries consists of emphasis on innovation, brand development, definition of target customers, establishment of dyeing and printing industrial estates, and provision of water supply for the industry.

6. Encourage human resource development: Interesting measures encompass promoting opportunities for employees working in factories to educate students in community colleges, making

internships within the industry a necessity and development of a curriculum that involves learning that is more associated with real-world practice. In summary, human resource development should be based on professional training. Given that the training should relate to ongoing works, instructors would thus have to possess relevant work experience within the industry.

7. Strengthen leadership and investigate the roles of the private and public sectors: The public sector's role should be to create a decent macroeconomic environment that facilitates industrial growth. With respect to industrial development, a core development agency should be clearly assigned to manage and follow up the results and outcomes of a policy and plan execution. Both public and private sectors should join hands to develop databases. Products should achieve suitable standards via efficient execution of regulations by the public sector to ensure that product quality and productive efficiency are treated with significance. Private operators also need to improve their working cultures and governance as well as training their workers.

2.2.3.2 Textile and Garment Master Plan 2007-2011

The revision of the 2003 version of the plan gave birth to the revised master plan for 2007-2011. The late-coming plan envisaged Thailand turning into "a center of the textile and clothing industry in ASEAN" within the next five years. The ultimate aims of the plan were threefold: a) to sustain the competitiveness of the national textile industry both in domestic and global markets; b) to transform the industry from labour-intensive industry to knowledge-based industry; and c) to target the ASEAN region as a potential new market. Quantifiable key performance indicators (KPIs) were also mentioned within the plan as shown below:

- The growth of textile and clothing products expands at an average rate of 10% per year with the main focus on major markets like Japan, Europe, ASEAN and others. The world market share in textiles and clothing will be ranked not less than 15th.

- The value of exports to the ASEAN market will not be less than US$ 2,400 million in 2012.

- Value added of the industry increases at an average rate of 10%.

- Labour productivity increases at an average rate of 10%.

Four major strategies were laid out as a guideline for the textile and garment industry in order to achieve the above vision and goals, as follows:

1. Textile and garment clustering development and promotion strategy: The cluster strategy aims to gain benefit from knowledge sharing, academic networking, information sharing with customers and raw material suppliers, and exercise of bargaining power on foreign traders. Cluster

development with neighbouring countries should also enhance industry potential and competitiveness through more efficient supply chain dynamics. Key proposals for actions to carry out are: a) to improve government administrative mechanisms and increase participation of the private sector under the policy and strategic frameworks for the industry; b) to accelerate the development of existing textile clusters via continuous cooperation between the producers and vertical supply chain in matters of production, trade and R&D; c) to promote cluster development of the industry at regional level while also creating linkages between each cluster; and d) to improve the industry database in order to strengthen supply chains and develop clusters in the region.

2. Increasing productivity of the textile and garment strategy: The strategy is expected to strengthen the capability of producers to uplift their own business fundamentals so that they will support business operation and investment. Major initiatives are: a) to develop and promote R&D through research cooperation between the public and private sectors and tax incentives; to develop standard and quality products through upgrading production processes in order to match international standards and tap into new markets that associate with green development and/or environmental concerns; c) to promote investments in functional and technical textiles through tax reduction or exemption; and d) to develop a logistics and managerial system with emphasis on lean manufacturing and exploitation of information and communication technology.

3. Human resource development (HRD) strategy: The strategy is directed at development of HR skills and knowledge to reach a higher level of competency that meets industry needs and supports industry expansion in the future. Important measures are: a) to provide training and new knowledge to producers in order to apply innovation to the industry, especially through learning from best practice; b) to employ highly skilled experts leading to tangible knowledge transfer to the Thai workforce; c) to upgrade the skills and knowledge of employees on functional and technical textiles via a variety of training sessions, both from in-house training and formal educational institutes; d) to produce textile and clothing researchers in urgent areas for development, namely product design, product R&D and market research; and e) to develop a specific curriculum for graduates with high tendencies or potential to work for the industry.

4. Maintain the domestic market while proactively expanding ASEAN as well as other potential new market strategies: The strategy is supposed to sustain the sales value of the Thai textile and clothing industry. Pivotal measures are: a) to promote textile and clothing consumption both in domestic and international markets by adhering to high-value design and branding that connect with the fashion industry and by improving the industrial environment; b) to encourage market planning for the industry with the support of in-depth market research and/or analyses so that producers will be able to learn about ongoing consumer behaviour and thus tap into the

demand of all relevant consumer segments; c) to draw substantial support from the private sector in order to take the path of proactive marketing with high use of modern marketing techniques, e.g. business forums, road shows for business matching, and e-marketing; d) to promote recognition of Thailand's branding for the industry, particularly in targeted markets; and e) to promote trade and investment of the private sector as a way to enter into the new market through regional cluster development and taking advantage of existing free trade agreements.

2.2.4 Policy concerns

The 2003 and 2007 master plans were Thailand's first two sets of industrial policy to come after the realisation of the severe competition from trade liberalisation it was facing. Therefore, well-designed policies were needed in order to guide the industry in such a direction that it could adjust to creating more added value and diversify its products based on technology and innovation. In addition, the linkage with Thailand's neighbouring countries has become relatively essential to businesses' survival. Hence, Thai companies need to focus on supply chain management and cluster development. These plans attempt to, at least, sustain the competitiveness of Thailand's textile industry in both domestic and global markets as well as changing the textile industry from a labour-intensive industry to a knowledge-based industry.

However, this DBA thesis revolves around a concern I have as a policy adviser seeking to advise and recommend to the government policies that can improve economic growth prospects in Thailand. Many of these policies are about industrial development and the focus of this thesis is on those that target an important and strategic sector of the Thai economy. Both the statistics and historical contexts discussed suggest changes to the industry have already taken place. Nonetheless, the current policy frameworks and government ambitions do not seem to be capturing such changes. Indeed, while the policies included in the 2003 and 2007 master plans might have steered the textile and clothing industry into the right direction as believed by some policy makers, several shortcomings of these policies can still be witnessed, which are summarised as follows:

1) The government perceives the textile and clothing sectors as one static industry and exercises one-size-fits-all policies to drive the two sectors.

One of the key shortcomings of the government's policies regarding the development of the textile and clothing sectors that I have witnessed is that they do not account for the real historical dynamics the industry has gone through in the past. Such dynamics affect the relationship between the textile and clothing sectors. The key objective and initiative of the policies is to promote Thailand's textile and clothing cluster by creating a linkage between the two sectors. As a result, these policies do not seem to recognise that the industry is no longer operating as a single vertically

related chain, a phenomenon that is supported and suggested by empirical literature, which states that Thailand's textile sector started to gain its apparent independence from Thai clothing producers in 1985 and showed very strong divergent growth from the clothing sector in 1995. The government seems to perceive that the textile and clothing sectors are in one single value chain, with textiles being the upstream sector and clothing the downstream sector. As a result, this has led the government to inappropriately assume that there is a strong linkage between the two sectors. However, as we have seen from the previous policy analysis, the linkage between these two sectors could be made weaker because of the BOI's tariff exemption policy.

The BOI's export promotion policy for clothing sector, designed as a tool to grant tariff exemption to clothing exporters, is considered one of the relatively important policies that unintentionally broke the relationship between these two sectors. Such a policy seems to have an unintentional effect on the industry as a whole. Clothing exporters have less incentive to source locally manufactured fabric and yarn, and rather source imported fabric and yarn to which they can then apply tariff exemptions/drawbacks. The global competition that Thai clothing exporters face in the market cannot pass through to the upstream industries. There is no connection between clothing exporters and the domestic textile industry.

In addition, as a result of the government's perception of seeing textiles and clothing as one single industry, the techniques and frameworks employed, such as SWOT analysis and the Diamond model, to formulate related development policies and strategies are, hence, not likely to keep up with the very complicated character of the industry in the real competitive markets. By and large, such techniques assume that the structures and dynamics of these two sectors are similar, with the trade structures being overlooked, leading policy makers and government agencies to analyse the strengths and weaknesses of each critical factor separately. This again, without the full understanding of such dynamics and structures of each industry, has resulted in a set of one-size-fits-all development policies being implemented for both the textile and clothing industry and all other industries in Thailand.

Furthermore, the government also uses total exports of textile and clothing segments of the industry as a key indicator of the whole industry. Consequently, this could further lead to more inappropriate policies that might unintentionally have affected Thailand's position in the global value chain. For example, the government may focus on increasing the export of low value-added textile products while focusing on clothing exports.

Statistically, quite an interesting trend has been witnessed, with both the export growth and competitiveness of the industry as a whole illustrating a constant rising trend. However, when

dissecting the industry into two separate textile and clothing segments, a different trend is noticed. The textile segment has a comparatively better and stronger performance and competitiveness than that of the clothing segment. Therefore, a set of policies that concentrate on the macro-economic data alone without truly understanding the structures and operations of each industry might result in an unclear policy direction, making it more difficult to execute effectively.

It is, therefore, crucially important that the government pays great attention to examining the industry in more detail to understand whether there are any differences in structures, relationships or challenges between the various segments in this one big industry.

2) Focus on local supply chains without considering linkages with international stakeholders

These policies mainly focus only on domestic issues such as clusters, supply side improvements and so forth, and do not pay great attention to the issues regarding international intermediaries and their own strategic interests reflecting international market conditions. When closely examining the textile and clothing industry, it can be seen that it is operating in the 'buyer-driven' value chain, in which international trade intermediaries (such as traders, retailers, branded marketers and branded manufacturers) seem to have great control over the dynamics and trades of the global market. The sourcing and marketing strategies of these intermediaries do not seem to take into account what the government tries to do in order to improve linkages and supply capabilities of the textile and/or garment firms.

The analysis focuses on the local/domestic value chain, hence neglecting the global linkage nature, which is the key success factor for this type of industry. The government's main focus is to improve the relationship and increase knowledge sharing within the local clusters, which in turn seems to neglect the trading structure of the textile and clothing industry and overlook the importance of the traders' and retailers' roles in the industry. This, therefore, is an implication that the government may not be able to differentiate between trade intermediaries and end consumers.

This misperception of the industry's true nature and structure has, therefore, led the government to focus on upgrading producers in both textiles and clothing, and not on improving the distribution channels for those producers. The plan attempts to improve producers' productivity via product and process upgrading and brand building. Theoretically, the brand-building attempt could have turned out to be a good strategy if the government had focused on the right player, namely retailers, designers and traders. However, by supporting producers, especially in the textile segment, in creating their own brand could be a very challenging task, as it would require a set of different skills and a different mindset to make it plausible.

Consequently, the government needs to correctly identify all stakeholders in the value chain, both locally and internationally, in order to help them understand their roles and capabilities better. It then needs to carefully articulate a set of adequate strategies for each player so that a set of vague and too generic strategies can be avoided.

It cannot be denied that the better the government understands the dynamic of the industry, the more can be done to restructure the industry effectively. By and large, the government could have a set of strategies that focus on the industry's growth enhancement and moving up the value chain. Such strategies will, however, involve the discontinuation of the original equipment manufacturing (OEM) production base idea and the shift toward a production base abroad and reallocation of resources to other more value-added activities. This can be achieved by providing incentives for companies to consolidate in order to create economies of scale, hence leading to cost reductions or for retailers in Thailand to promote products from Thailand. Therefore, the government needs a clear set of adequate strategies that have been planned with a true understanding of the industry's structures and dynamics to be executed in order to avoid a counter-proactive set of strategies.

2.2.5 Summary of policy gap

The textile and clothing industry is a very important sector in Thailand. Therefore, changes in the industry's export and production can lead to strong impacts on the economy and welfare of Thai people. Industry trends in the past decade have quite evidently shown that they are losing competitive advantages in the global arena in such a way that export growth and market shares have decreased at an astonishing rate. The Revealed Comparative Advantage indicators have also illustrated a similar direction. The Thai government must have recognised the industry's significant declining performance and as a result announced the first industry policy in 2003 followed by the policy revision in 2007. The main objective of the government was to increase the industry's exports through increased domestic linkages from cluster formation, increased productivity and human resource development.

However, despite the government's attempts to enhance the industry's performance, the new industrial policy still had shortcomings. Basically, it seemed that the government did not quite recognise that the industry was no longer operating as a single vertical related chain, thus leading it to focus only on domestic issues such as cluster and supply side improvement. After examining the textile and clothing sectors closely, it has been found that the industry appears to be following 'divergent pathways', which shows a minimal linkage between the textile and clothing segments of the industry. The clothing sector's export growth rate, RCA and world market share have been significantly on the decline since the end of the MFA, while those of the textile sector have shown

excellent signs of improvement. These indicators implicitly illustrate that the textile and clothing segments of the industry were operating separately, probably with different sets of risk and strategic issues, requiring the government to tackle them in a distinctive way. Therefore, the two segments were more likely not to have been behaving in such a way that the government understands and assumes.

Furthermore, the Thai government does not deem to take into account the importance of international intermediaries, the strategic interest of these firms and international market conditions. Given the examined statistical figures, it seems that both the textile and clothing segments have been dominated by international buyers and traders for quite a long time. However, the set of implemented policies does not quite take into account the behaviours or relationships that the Thai manufacturers had with their counterparts. Without a clear understanding of industry structure and governance, particularly in a global industry like the textile and clothing industry, the Thai government will be less likely to implement a set of effective policies and measures designed to upgrade the industry. It is important for policy makers to fully understand the different types of relationship buyers and sellers have in the international market, to know key players who control the markets, to recognise what other competitors have done to improve and move up the value chain and to identify key growth drivers for the industry.

Finally, the cluster theory assumes that knowledge transfer within a cluster is the key engine to support the industry's upgrade. However, Thailand's textile and clothing cluster supported by government only consisted of domestic players, who were mainly producers, and lacked significant knowledge or insights about the consumer market that was well kept by international players who are outside the local cluster. Local linkage and domestic knowledge alone is not sufficient for Thai producers to learn from each other and upgrade in a global competitive landscape. The Thai government had to consider creating more than local clusters in the policy, so that Thai firms could learn from their global counterparts.

As a result, it is crucially important for the Thai government to be comprehensively able to identify a better theoretical framework that can also capture the roles of international dynamics and the upgrading direction in order to develop and implement a set of effective and appropriate policies for the industry. I have reviewed several important theories that will be able to support and help Thai policy makers to better understand the textile and clothing industry and its linkage to the international arena. Two main theories that seem to fit the case of the industry's competitiveness enhancement are: firstly, the global value chain (GVC) framework, which can provide the government and policy makers with a better understanding of global linkages and relationships between producers and buyers (i.e. governance) and key players in the industry. Secondly, the

'catch-up' theory is another seemingly appropriate theory that can be employed to help understand the industry better. The theory's strategy for the latecomer firm, proposed by Mathews (2002a, 2002b, 2004, 2006), states that latecomer firms can catch up with the prominent firms by employing a 'linkage, leverage and learning' strategy. The following sections will elaborate on the theoretical review of the literature related to this thesis.

2.3 Theoretical reviews

This section will introduce and elucidate various frameworks that can provide a better understanding of the dynamics of Thailand's textile and clothing industry in the international competitive landscape for related policy makers. The main theoretical framework for this thesis will centre around the concept of the global value chain theory that will help us to understand the structure, governance and power of various key players in the industry. By recognising such a structure and power in the global arena, we will then be able to identify or formulate the industry's upgrading direction. Furthermore, Mathews' work on the 'latecomer strategy' will also be reviewed in order to provide a better understanding of other upgrading perspectives.

The first part of this section will be an introduction to how East Asian nations upgraded themselves in the global apparel industry during the 1970s and 1980s. It also introduces apparel industry structure in general and how these patterns are currently understood in the industry. Moreover, the global value chain (GVC) concept and its implications will then be elaborated on in the following section. Various forms of governance of the GVC and different approaches to upgrading in the GVC model will also be discussed, followed by an illustration of the apparel global value chain, including how the GVC of the textile and clothing industry is constructed in the international landscape. Also, the key players in the industry will be identified and assessed. The last two sections will emphasise the upgrading options and strategic frameworks from which Thai policy makers can learn and adapt to formulate a set of effective policies, and the alternative concept of the industrial upgrading proposed by Mathews will then be discussed, touching slightly on the business model definition and its components.

2.3.1 Patterns of industrial upgrading in a global apparel industry (Gereffi and Memedovic, 2003)

The world's textile and apparel industry has undergone several production migrations since the 1950s, all involving the Asian continent, with the first migration phase in the 1950s and early 1960s from North America and Western Europe to Japan, when western textile and clothing production was displaced by a sharp rise in imports from Japan. The second shift was from Japan to Hong Kong, Taiwan Province of China and the Republic of Korea, which dominated global textile and clothing exports in the 1970s and early 1980s. In the late 1980s and the 1990s there was a third migration, from the Asian 'Big Three' (Hong Kong SAR, Taiwan Province of China and the Republic of Korea) to other developing economies. In the 1980s, production principally moved to mainland China, but also to several Southeast Asian countries (Indonesia, Thailand, Malaysia and the Philippines) and Sri Lanka. In the 1990s, new suppliers included South Asian and Latin American apparel exporters (Khanna, 1993; Gereffi, 1998).

For most of the history of the industry, a stable pattern of industrial development has occurred in Asia (see figure 2.7). The figure illustrates the shift to higher-value-added activities of East Asian nations in the apparel global value chain. The vertical axis represents the hierarchical networks established by Japan and the East Asian NIEs (newly industrialised economies) in order to expand the Asian supply base. The horizontal axis represents the level of value adds in each activity in the value chain, where garments produce the lowest and machinery produces the highest value-added activities for production respectively. The more developed countries like Japan and the East Asian NIEs attempted to move their production upstream from garments to textiles while relocating labour-intensive activities and low value-added production networks to other countries such as China and Southeast Asian countries. These patterns are thought to reflect the prevailing operation of the global production network in this industry.

Figure 2.7: Stylised model of industrial upgrading in the Asian apparel commodity chain
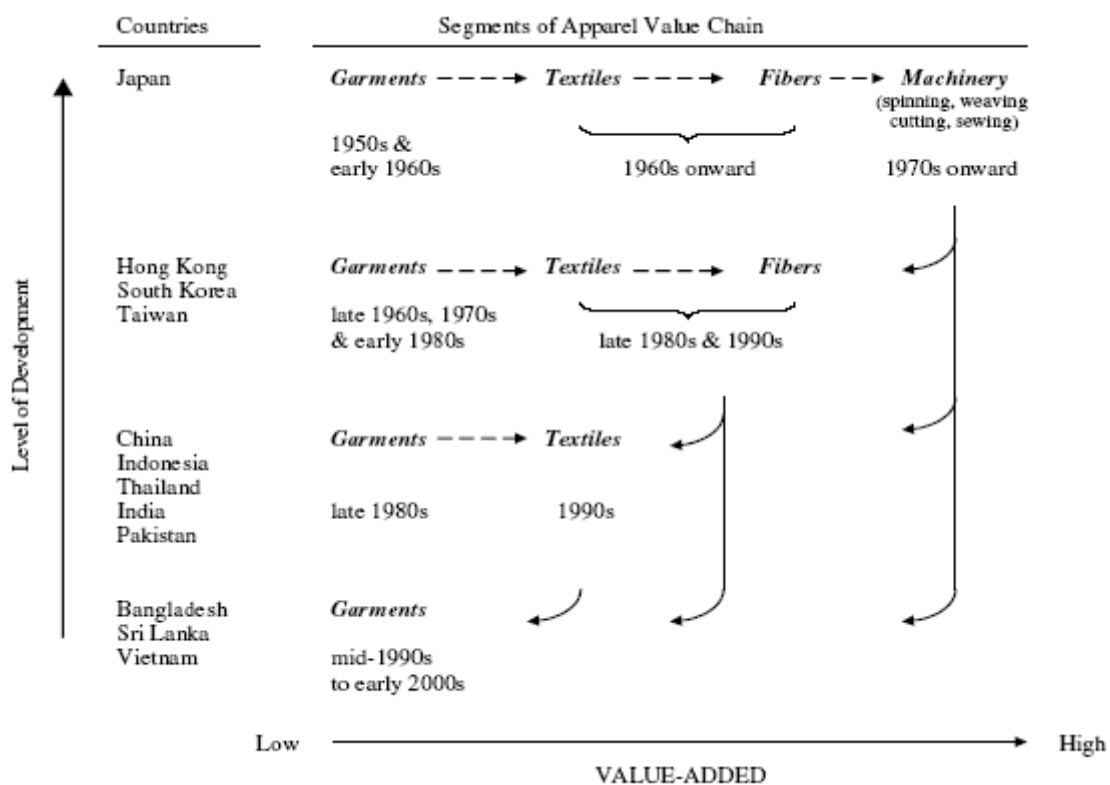
Notes: Dotted arrows refer to the sequence of production and export capabilities within economies. Solid arrows refer to the direction of trade flows between economies. Dates refer to a country's peak years for exports of specific products. Source: Gereffi (2005)

As in all global industries, firm activities in one country are connected to international activities of other firms in what might be termed global value chains or production networks. Production networks think about industrial organisation in terms of the role that firms play in that structure. Industrial development, in turn, can be understood in terms of the nature of those roles

and how they change. For instance, to understand industrial development patterns, it helps to think about trade linkages in terms of the different export roles firms may play. More specifically, five major export roles have been identified in the literature: (i) primary product exports, including processed 'industrial commodities' and non-traditional agricultural exports; (ii) the export-oriented assembly of traditional manufactured goods, such as apparel and electronics items, using imported components; (iii) the production of components for export in relatively advanced industries, such as automobiles and computers, using substantial local inputs; (iv) original equipment manufacturing (OEM), whereby contractors make goods to be sold under another company's brand name; and (v) original brand name manufacturing (OBM), whereby manufacturers make goods for export and sale under their own label (Gereffi 1994b, 222-4, 1995).

These export roles are not mutually exclusive. In fact, most nations are tied to the world economy in multiple ways. The East Asian NIEs employed all five export roles from the 1960s to the mid-1990s, although they are currently focusing almost exclusively on component-supply manufacturing, OEM and OBM. Most of the countries in Southeast Asia and Latin America are involved in the first three roles, the bulk of exports in South Asia and Sub-Saharan Africa fit the first two roles, and many nations in Africa and the Middle East only export primary products.

The ability of the East Asian NIEs to sustain their export success over several decades and to develop a multilayered sourcing hierarchy within Asia is only partially related to wage rates and national policies. From a value chain perspective, East Asia must be seen as part of an interrelated regional economy. The apparel export boom in the less developed southern tier of Asia has been driven to a significant extent by the industrial restructuring of the northern-tier East Asian NIEs. As Northeast Asian firms began moving their production offshore, they found ways to coordinate and control their sourcing networks, ultimately focusing on the more profitable design and marketing areas to sustain their competitive edge. This transformation can be conceptualised as a process of industrial upgrading, based in large measure on building economic and social networks between buyers and sellers.

The East Asian NIEs are generally taken as the archetype for industrial upgrading in developing countries. They made a rapid transition from the initial assembly phase of export growth (typically utilising export processing zones located near major ports) to a more generalised system of incentives that applied to all export-oriented factories in their economies. The next stage for Taiwan Province of China, the Republic of Korea, Hong Kong SAR and Singapore was OEM production. East Asian firms soon became full-range package suppliers for foreign buyers, and developed an innovative entrepreneurial capability that involved the coordination of complex production, trade and financial networks.

The OEM export role has many advantages. It helps local entrepreneurs to learn foreign buyers' preferences, including international standards for price, quality and delivery. It also generates substantial backward linkages in the domestic economy, as OEM contractors are expected to develop reliable sources of supply. Moreover, OEM production expertise increases over time and spreads across different activities. Suppliers learn about the downstream and upstream segments of the apparel value chain from the buyer and this can become a powerful competitive weapon.

However, East Asian producers face intense competition from lower-cost exporters in other parts of the third world, and the price of their exports to western countries has been increased by sharp currency appreciations. They therefore need to establish forward linkages to developed-country markets, where the biggest profits are made in buyer-driven value chains. Some firms in the East Asian NIEs are pushing beyond OEM to the OBM role by integrating their manufacturing expertise with the design and sale of their own branded goods. Well-known local retailers include the women's clothing chain Episode, which is controlled by Hong Kong SAR's Fang Brothers Group, one of the foremost OEM suppliers for Liz Claiborne since the 1970s, Giordano, Hong Kong's most famous clothing brand, and Hang Ten, a less expensive line that in the late 1990s was the largest foreign-clothing franchise in Taiwan Province of China.

An important mechanism facilitating the move to higher-value-added activities for mature export industries like apparel in East Asia is 'triangle manufacturing'[5]. Triangle manufacturing is the mechanism used by countries operating in buyer-driven commodity chains for three purposes:

1. to deal with competition from lower-cost suppliers;
2. to move from declining sectors into higher-value-added activities;
3. to facilitate geographical expansion of their operations.

Triangle manufacturing is considered one of the most important adjustment mechanisms for maturing export industries in East Asia such as Hong Kong, Taiwan and the Republic of Korea. It is a combined operation in which the agent acts as a manufacturer, purchaser and subcontractor to third parties. The essence of triangle manufacturing, which was initiated by the East Asian NIEs in the 1970s and 1980s, is that United States (or other overseas) buyers place orders with NIE manufacturers they have previously sourced from, who in turn shift some or all of the requested production to affiliated offshore factories in low-wage countries (e.g. China, Indonesia or Guatemala). These factories can be wholly owned subsidiaries of the NIE manufacturers, joint-venture partners or simply independent overseas contractors. The triangle is completed when the

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[5] 'Triangle manufacturing' is a result of the 'Flying Geese' model of progressive relocation of industrial production in the Asian region. This flying geese pattern started with Japanese investments in offshore production locations in the newly East Asian NIEs. As the NIEs were confronted with labour shortages and restructured towards less labour-intensive industries, production relocated to the ASEAN countries and China. Later on, other newcomers such as Cambodia, Vietnam and Bangladesh were also incorporated.

finished goods are shipped directly to the overseas buyer under the United States or European import quotas issued to the exporting country.

Through linkages to foreign partners in the value chain or production networks, East Asian firms succeeded in innovating in the buyer-driven value chains and in moving from being assembly companies to OEM and OBM in the 1970s and 1980s. These nations developed and refined their OEM capabilities by establishing close ties with United States retailers and marketers, and learning by being observant in order to build their export competence. The performance trust built up through successful business transactions with United States buyers enabled suppliers in East Asian NIEs to use their OEM expertise internationally via triangle manufacturing. The triangle manufacturing suppliers in the first-generation NIEs, Taiwan, Hong Kong, the Republic of Korea and Singapore, have become intermediaries that control production in many Asian countries in order to take advantage of lower labour costs and favourable quotas.

These triangles make use of state-of-the-art capabilities and skills built up over decades in the first-generation NIEs. Thus, the continuously strong position of the Asian region's exports as a whole are based on, among other things, the coupling of industrial knowledge and capabilities built up in first-generation NIEs with the large low-cost labour reserves in their regional back yards. The creation of these global sourcing networks helped East Asian NIEs to sustain their international competitiveness when domestic economic conditions and quota constraints threatened the original, bilateral OEM relationships. The East Asian NIEs have gone beyond OEM by shifting to higher-value upstream products (e.g. exports of textiles and fibres rather than apparel), moving downstream from OEM to OBM in apparel and switching to new value chains where the export success in apparel can be replicated. Examples of upgrading from triangle manufacturing strategy are:

- Fung Brothers Group, the leading OEM supplier of Liz Claiborne in the 1970s and 1980s, which succeeded in the shift to OBM and control of the clothing chain brand Episode.

- Giordano, Hong Kong's most famous clothing brand, which moved from controlling manufacturing to setting and controlling retail.

Type of firms that control global apparel industry and its upgrading (Gereffi and Memedovic, 2003)

The apparel industry has an industry structure that generates a highly aggressive pattern of global sourcing through a variety of organisational channels. Furthermore, with the relative ease of setting up clothing companies and widespread protection of the industry from developed countries, there is an unparalleled diversity of garment exporters in the third world. Finally, the industry embodies two contrasting production systems characteristic: the assembly and OEM models. Whereas the assembly model is a form of industrial subcontracting in which manufacturers provide the parts for simple assembly to garment sewing plants, the OEM model is a form of commercial subcontracting in which the buyer–seller linkage between foreign merchants and domestic manufacturers allows for a greater degree of local learning about the upstream and downstream segments of the apparel chain.

Typically, the apparel value chain is organised around five main parts: raw material supply, including natural and synthetic fibres; provision of components, such as the yarns and fabrics manufactured by textile companies; production networks made up of garment factories, including their domestic and overseas subcontractors; export channels established by trade intermediaries; and marketing networks at the retail level (Figure 2.8).

Figure 2.8: Apparel value chain
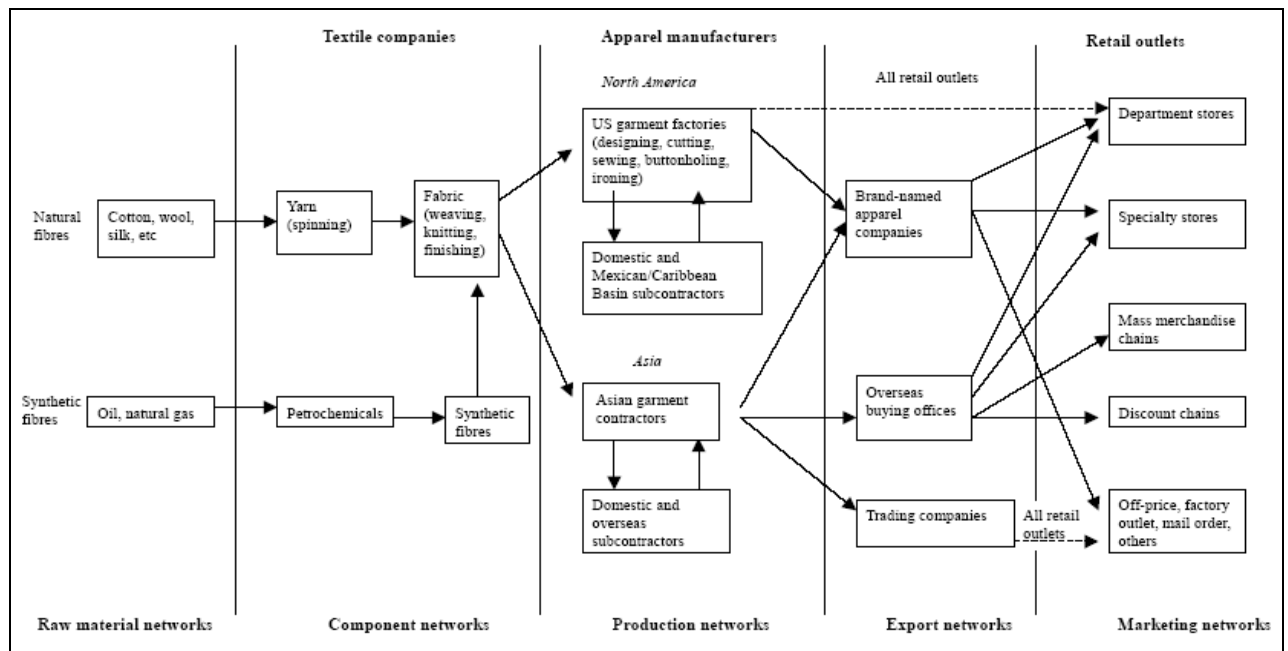
Source: Appelbaum and Gereffi (1994)

The lead firm that control the apparel value chain is at the end of marketing networks. This is because it faces a very high barrier to entry, such as product design, brand names, promotion and advertising, technologies and consumer demands. There are three types of lead firm in the apparel global value chain: retailers, marketers and branded manufacturers (Gereffi, 1997). As apparel production has become globally dispersed and the competition between these types of firm intensified, each has developed extensive global sourcing capabilities. While 'de-verticalising' out of production, they are strengthening their activities in the high value-added design and marketing segments of the apparel chain, leading to a blurring of the boundaries between these firms and a realignment of interests within the chain. The following is a summary of the lead firms in the apparel value chain:

Retailers

Examples of retailers are the diverse array of national department stores (e.g. JC Penney and Sears), discount chains (e.g. Wal-Mart and Kmart) and speciality retailers (e.g. Gap, The Limited Inc. and Benetton). In the past, retailers were the apparel manufacturers' main customers, but now they are increasingly becoming their competitors. As consumers demand better value, retailers have increasingly turned to imports, utilising both their overseas buying offices and trade intermediaries.

Retailers' overseas offices go well beyond their original buying functions, and they are actively engaged in product design, fabric selection and procurement, and monitoring contracted sewing as well as other production functions handled by offshore manufacturers (Dickerson, 1999; Speer, 2001).

Trade intermediaries are independent companies matching domestic manufacturers and foreign buyers. They export, import and engage in third country trading (supplier, buyer and broker all being from different countries) of goods and services. Logistic capabilities are important for these firms but also the ability to play the management-coordinating role. In the current expansion of globalisation, with strong competition on international and domestic markets, these trading intermediaries and their knowledge about local supply sources and foreign markets are gaining importance and influence. A good example of trade intermediaries is Li & Fung, which has 69 offices in 40 countries and territories (48 offices in 32 countries and territories in 2001).

Branded marketers

Branded marketers are well known as manufacturers without factories as they are not engaged in production. Instead, they just design and market their goods. Examples include Liz Claiborne, Donna Karan, Ralph Lauren, Tommy Hilfiger, Nautica and Nike. As pioneers in global sourcing, they provided knowledge, which later allowed overseas suppliers to upgrade in the apparel value chain. To deal with new forms of competition, branded marketers are outsourcing some support work to contractors. They are instructing contractors where to get needed components, and how to cut their own purchase and redistribution activities. They are shrinking their supply chains, using fewer but more capable manufacturers, and are also adopting more stringent vendor certification systems to improve performance.

Branded manufacturers

Branded manufacturers are offshore suppliers, usually in neighbouring countries, with trade agreements that allow goods assembled offshore to be re-imported with a tariff charged only on the value added by foreign labour. Examples of these firms are Sara Lee, Phillips Van Heusen and Levi Strauss & Co. These firms supply intermediate inputs to the extensive networks of offshore suppliers, typically located in neighbouring countries with reciprocal trade agreements that allow goods assembled offshore to be re-imported with a tariff charged only on the value added by foreign labour. This international subcontracting system exists worldwide. The trend for the branded manufacturers is less engagement in production and more in marketing through capitalising on brand names and retail outlets.

Table 2.13 provides regional examples of each type of lead firm. Within the retailer category, we can distinguish between mass merchants (who sell a diverse array of products) and speciality retailers that only sell apparel items. Brand manufacturers traditionally formed production networks in which the brand owner was involved in the production process, either through ownership or supplying inputs to production. In contrast to brand manufacturers, brand marketers and retailers opt for sourcing strategies that involve constructing networks with OEM or full-package producers. In this model, the buyer provides detailed garment specifications and the supplier is responsible for acquiring the inputs and coordinating all parts of the production process: purchase of textiles, cutting, garment assembly, laundry and finishing, packaging and distribution (Bair and Gereffi, 2001; Bair, 2006). As capabilities in the global apparel supply base improved, brand manufacturers, marketers and retailers expanded their sourcing networks.

Table 2.13: Lead firm and brand types with regional examples

Lead firm type	Type of brand	Description	USA	EU-27
Retailers: Mass Merchants	Private label: the retailer owns or licenses the final product brand, but in almost all cases the retailer does not own manufacturing	Department/discount stores that carry private label, exclusive or licensed brands that are only available in the retailers' stores in addition to other brands.	Walmart, Target, Sears, Macy's, JC Penney, Kohl's & Dillard's	Asda, Tesco, C&A, Marks & Spencer
Retailers: Speciality Apparel		Retailer develops proprietary label brands that commonly include the store's name.	Gap, Limited Brands, American Eagle, Abercrombie & Fitch	H&M, Benetton, Mango, NEXT
Brand Marketer	National brand: the manufacturer is also the brand owner and goods are distributed through multiple retail outlets	Firm owns the brand name, but not manufacturing - 'manufacturers without factories'. Products are sold at a variety of retail outlets.	Nike, Levi's, Polo, Liz Claiborne	Ben Sherman, Hugo Boss, Diesel, Gucci
Brand Manufacturer		Firm owns brand name and manufacturing; typically coordinates supply of intermediate inputs (CMT) to its production networks often in countries with reciprocal trade agreements.	VF, Hanesbrands, Fruit of the Loom, Gildan	Inditex (Zara)

2.3.2 Global value chain framework

  This section discusses the theory behind debates about patterns of industrial change, and that a key thing the reader must understand is that there is not just one theory but differing schools of thought that have been developed over time. The thesis focuses upon a particular strand of theorisation associated with global value chain. The GVC framework represents a development from earlier global commodity chain (GCC) accounts. This section starts by reviewing the earlier GCC idea and then discusses how the GVC framework developed from it.

  The patterns of industrial upgrading in the textile and clothing industry by East Asian NIEs have been captured and examined by many scholars in recent years. Research from various academic disciplines maintains that participation in the global value chains is the key organising principle, enabling firms to become more competitive. The global value chain literature emphasises that globalised lead firms coordinate the value chains in which companies operate. Firms are seen to be increasingly incorporated in national and global value chains rather than only having relations at regional level (Humphrey and Schmitz, 2002). Governance – as the explicit coordination of economic activities through non-market relationships – is particularly important for the generation, transfer and diffusion of knowledge leading to innovation, which enables firms to improve their performance (Humphrey and Schmitz, 2008).

  Global value chain (GVC) analysis, which received inspiration from its GCC predecessor, has emerged since the early 1990s as a novel methodological tool to analyse trends in the global manufacturing arena, and in particular the increasing role of retailers and brand-name companies in creating global production, distribution and marketing networks (Ponte, 2008). The global value chain perspective attempts to provide an explanatory framework for the development of vertical coordination between firms. A value chain can be defined as a socioeconomic system that consists of a set of interdependent firms performing a sequence of value-adding activities required to bring a product from conception to consumption (Bair, 2008). The tacit coordination of markets is being replaced increasingly by 'explicit coordination', i.e. coordination through direct exchanges of information between firms. This coordination is usually referred to as value chain governance (Humphrey and Memedovic, 2006). Networks of inter-firm relationships were described first as commodity chains, later as global commodity chains, and most recently as global value chains.

  Global value chain advocates put forward that one of the major factors that could contribute to the difference in export performance, competitiveness and upgrading potential of an industry relies upon the relationship between local producers and global buyers within a particular value chain, i.e. the governance[6] structure of a distribution channel. In the textile and clothing industry, the

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[6] Authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain. (Gereffi, 1994, p. 97)

GVC concept states that global buyers, e.g. large retailers, branded manufacturers and branded marketers, play a significant role in directing production networks across exporting or developing countries. These lead firms control access to major resources (such as product design, new technologies, brand names or consumer demand) that generate the most profitable returns in the industry. These firms have various relationships with producers, e.g. market, modular, relational, captive and hierarchical. These relationships will have different effects on performance and industrial upgrading. Therefore, the GVC framework will help us understand how the structure of the industry (e.g. positions and types of firm) and relationships have an effect on firms in developing countries which operate in supply positions.

In the case of Thailand's textile and clothing industry, it is possible that the difference in export performance of these two sectors arises because of different distribution channels, hence different lead firms and governance[7]. Thus, it is essential for us to examine the effect of Thailand's distribution channel on its export performance in more detail. In the next section, we will explore ideas and literature reviews on the global value chain and upgrading concept, both in theory and in empirical evidences, then we will examine the distribution of Thailand's textile and clothing sectors in the subsequent section.

2.3.2.1 From Global Commodity Chains to Global Value Chains

Figure 2.9 Evolution of Global Commodity Chains to Global Value Chains

Commodity Chain	Global Commodity Chain	Global Value Chain

❑ **Wallerstein's (1974) World Systems Theory**
 	
❑ **Hopkins and Wallerstein (1986)**
	❑ **Gereffi, 1992; Gereffi & Korzeniewicz, 1994**
	  o *Buyer-driven*
	  o *Producer-driven*
		❑ **Gereffi, Humphrey and Sturgeon, 2005**
		  o *Markets*
		  o *Modular*
		  o *Relational*
		  o *Captive*
		  o *Hierarchy*
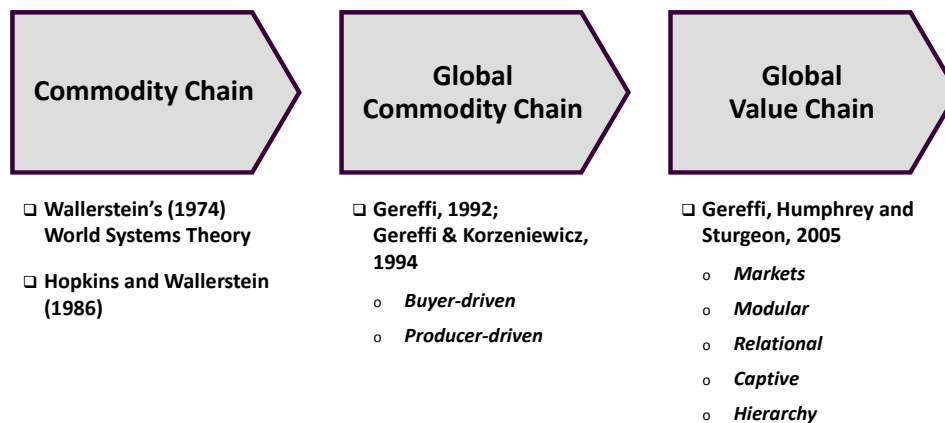
The original idea of GVC begins from the concept of 'commodity chain'[8] mentioned in Wallerstein's (1974) World Systems Theory. Later, Hopkins and Wallerstein (1986) defined the term 'commodity chain' as "a network of labour and production processes whose end result is a finished commodity". Hopkins and Wallerstein see all firms (and specific processes) as being involved in commodity chains as either producers of inputs to others, or users of inputs from others, chains

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[7] The focus on value chain governance does not imply that other factors are not important. The proposition is that the upgrading opportunities of local firms are often structured by the relationships in global value chains.

[8] There are several other approaches that have many similarities to global chains literature in theory and methodology. These variants include Michael Porter's (1985) "value chain" concept in management studies; the French "filière" tradition (Raikes et al. 2000) and the "commodity systems" approach (Friedland 1984), both from agricultural studies; and "global production network" (GPN) research (Henderson et al. 2002), used mostly by economic geographers.

forming the 'warp and woof of the commodity system'. Since the mid 1990s, the concept has drawn a great deal of attention from scholars and policy makers who have grappled with comprehending the changing global economy.

In the 1990s, Gereffi and Korzeniewicz (1994) extended the 'commodity chains' concept and developed a framework, called 'global commodity chains' (GCC). GCC is defined as a set of networks (nodes) clustered around one final product or service and linking firms, industries and communities to one another across the world economy (Gereffi, 1992; Gereffi and Korzeniewicz, 1994). Gereffi et al. (2001) stated the importance of studying the global commodity chain as follows:

> The value chain view of global economic integration highlights that for many industries access to international markets is not achieved merely through designing, making and marketing new products. Instead, it involves gaining entry into international design, production and marketing networks consisting of many different firms. Understanding how these value chains operate is very important for developing country firms and policymakers because the way chains are structured has implications for newcomers. How can economic actors gain access to the skills, competences and supporting services required to participate in global value chains? What potential is there for firms, industries, and societies from the developing world to "upgrade" by actively changing the way they are linked to global value chains?

Unlike world-system scholars who highlighted the power of the state in shaping global production systems, exercised in large part in the form of tariffs and local content rules affected at the point where goods crossed borders, the GCC concept focuses on the strategies and actions of firms, in part because of the restricted ability of states to set tariffs and local content rules in the context of trade liberalisation. Moreover, a pressing concern of Hopkins and Wallerstein (1986) was the existence of a 'global' economy in early modern capitalism. The GCC was developed primarily for analysing the impact of globalisation on industrial commodity chains and attempted "to develop a unified theoretical framework which can identify appropriate production and marketing strategies and key points for upgrading for firms within particular types of commodity chain in order to change existing power relations within the chain" (DFID, 2004).

Gereffi and Korzeniewicz' framework lays out four key structures that shape GCCs: input-output, geographic, governance and institutional. The input-output structure and the geographical coverage of GCCs have been used mainly to outline the configurations of specific chains. The institutional framework surrounding the chain has been introduced in recent work by Gereffi (1999), and is used to delineate the conditions under which lead agents incorporate subordinate agents through their control of market access and of information. However, the governance structure, authority and power relationships that determine how financial, material and human resources are

allocated and flow within the chain has attracted the most attention by far. The governance function within GCC framework captured variation in the way firms organised their cross-border production arrangements. They made a key distinction between global chains that are driven by two kinds of lead firm: buyer-driven and producer-driven chains.

Type of Global Commodity Chains (GCC)

Initially, Gereffi (1994, 1999) asserted that there are two types of global commodity chain: 'producer driven' and 'buyer driven'.

In *producer-driven commodity chains*, large producers or manufacturers play pivotal roles in coordinating the production network. Industrial firms control these chains at the point of production. They are typical of capital- and technology-intensive industries such as automobiles, computers, semiconductors and aircrafts (Gereffi and Korzeniewicz, 1994).

In *buyer-driven commodity chains*, large retailers, branded marketers and branded manufacturers play significant roles in directing production networks across exporting or developing countries. The buyer-driven value chain expresses the idea that the buyer exercises control over the chain, even in the absence of ownership (Humphrey and Schmitz, 2000). These types of chain and network have become common in labour-intensive, consumer goods industries such as garments, footwear, toys, handicrafts and consumer electronics.

Figure 2.10: Main characteristics of producer driven and buyer driven
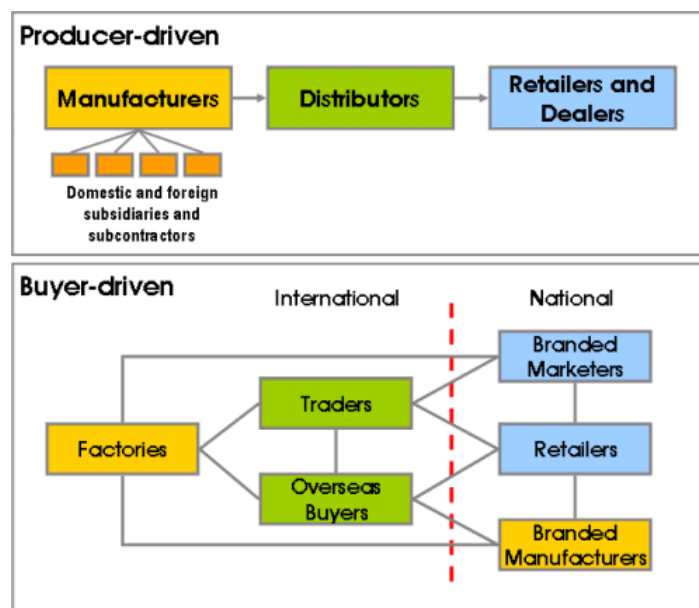
Source: G. Gereffi (2001) 'Shifting Governance Structures in Global Commodity Chains, With Special Reference to the Internet', American Behavioral Scientist, Vol. 44 No. 10, pp. 1616-1637.

GCC critics and weaknesses

Though GCC was applauded as a framework that allowed policy makers or academics to capture variation in the way that firms organised their cross-border production arrangements, there are several weaknesses in the framework as follows:

First, the GCC framework did not explain how or why global commodity chains are buyer or producer driven, i.e. what factors determine different types of governance. Gereffi did not explore this issue in detail, but instead let the empirical evidence speak for itself: capital- and technology-intensive industries such as electronics and autos tend to be governed by producers, while labour-intensive industries such as apparel and consumer goods tend to be governed by buyers. Gereffi asserted that because innovation in buyer-driven GCCs lies more in product design and marketing than in manufacturing know-how, it is relatively easy for lead firms to outsource the manufacturing of labour-intensive products. In the more technology- and capital-intensive items made in producer-driven chains, technology and production expertise were core competencies that needed to be developed and deployed in-house, or in closely affiliated 'captive' suppliers that can be blocked from sharing them with competitors.

In addition, some other research later argues that, due to the rapid changes caused by globalisation, the two types of value chain governance proposed by Gereffi are too simple and did not adequately specify the variety of network forms that more recent field research has uncovered. Since Gereffi's seminal book chapter was published, the boundary between manufacturers and buyers has been blurred and transnational giants have changed quite dramatically, outsourcing many activities and developing strategic alliances with competitors. They have become less vertically integrated and more network oriented. Better global standards in the realms of business processes and product characteristics and the heavy application of information technology in areas such as design, manufacturing, service provision, supply-chain coordination and materials management has enabled increased outsourcing in producer-driven chains and made it possible, and more compelling, for firms to forge modular linkages between buyers and suppliers in both producer- and buyer-driven chains. All of these findings have resisted any portrayal of global chains as mono-polar, highlighting instead "the more complicated patterns of power relations between lead firms in global chains" (Fold 2002:230), or even the presence of multiple governance structures.

Finally, some GCC scholars at a workshop in Bellagio in September 2000 also chose to replace the term 'commodity' with 'value' because of popular connotations of the word 'commodity' with undifferentiated products, especially primary products such as crude oil and bulk agricultural goods. The term 'value' is preferred because it "focuses on value creation and value capture across

the full range of possible chain activities and products (goods and services), and focuses attention on the main source of economic development: the application of human effort, often amplified by machines, to generate returns on invested capital."

To sum up, the buyer- and producer-driven GCC typology was based on a static, empirically situated view of technology and barriers to entry, but both are dynamic because of technological change and firm- and industry-level learning (Henderson et al., 2002; Ponte and Gibbon, 2005). As we adopted a more dynamic view of chain governance two things became clear: 1) there was a clear shift away from the vertically integrated, producer-driven variant in a range of industries, and 2) the buyer-driven type could not characterise all of the network types being observed in the field. These weaknesses have been at the centre of debate and policymakers responsible for responding to the pressures of global integration are desperate for conceptual frameworks and theoretical constructs that can help to guide their work. They need pragmatism to motivate theories characterised by simplicity, easy applicability in the face of variety and resonance with real-world situations.

2.3.2.2 Core theoretical and analytical elements behind GVC innovations

Global Value Chains Governance

In moving beyond the empirically-based typology of chain governance developed in the GCC stream, a one-week workshop in Bellagio in September 2000 was organised to construct a dynamic, operational theory that could account for observed changes and anticipate future developments. An important goal was to develop a theory that could help policymakers explain and predict governance patterns in cross-border production networks.

After the workshop, Gereffi, Humphrey and Sturgeon (2004) developed the extended GVC framework to specify a more elaborate set of governance forms and crucially provide a method to explain changes in governance patterns over time. To propose theoretical framework underpinnings of GVC governance, Gereffi, Humphrey and Sturgeon (2004) draw upon three bodies of literature. The first is transaction cost economics, which provides one means of addressing why firms choose to retain certain activities in-house and outsource others. This approach draws attention to the make or buy decision of firms made under conditions of uncertainty and bounded rationality (information may not be available, or only acquired at a certain cost). The second body of literature is network theory. This analysis can be used to understand how firms manage frequent, complex and customised exchanges, and how they cope with the problem of opportunism without resorting to vertical integration. Finally, they use the literature on technological capability and firm-level learning to provide insight into why firms are prepared to purchase complex and highly customised products rather than produce them in-house. The following explains each theory in detail:

Figure 2.11: Main theories underlying Global Value Chain
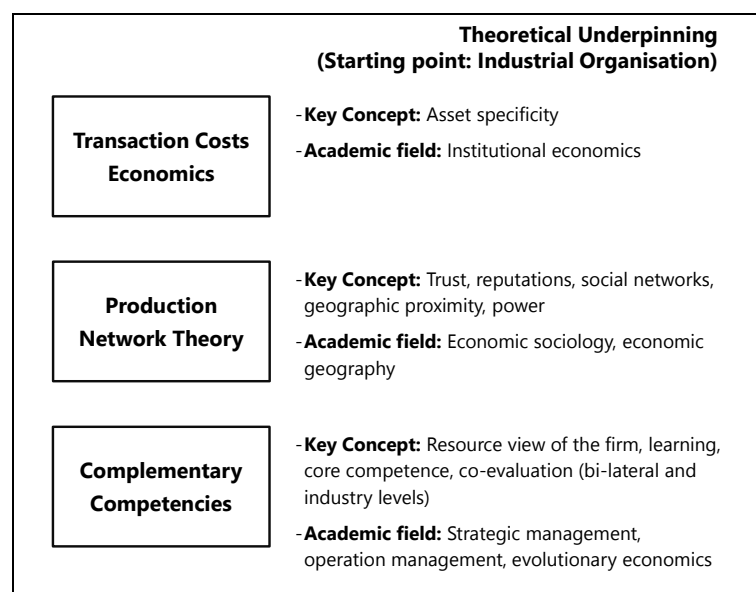
Source: Sturgeon T., "The Governance of Global Value Chains; Implications for Industrial Upgrading" (2006)

Transaction cost economics is a theory that predicts when a lead firm will internalise a particular function and when it will rely on external suppliers for a specific input (the make or buy decision). The key assumption is that firms will seek to minimise the total cost of transacting. Without transaction costs, economies of scale favour outsourcing and specialisation, which enables suppliers to pool orders from various buyers, become expert in particular processes, achieve economies of scale and smooth output profiles in the face of fluctuations in demand, which in turn lowers costs through higher capacity utilisation rates. Transaction cost analysis suggests that arm's-length market relations work well for standard products because they are easily described and valued. Coordination problems are reduced not only by their ease of description, but also because standard products can be produced for stock and supplied when required. At the same time, because standard products are made by a variety of suppliers and bought by a variety of customers, problems arising from asset specificity and opportunism are low. Conversely, the theory offers various reasons why firms will bring certain activities in-house. Firstly, the more customised the product or service, the more likely it is to involve transaction-specific investments, with the consequent risk of opportunism. Therefore, such activities will be brought in-house if the frequency of their purchase makes in-house production scale-efficient. Secondly, even without opportunism, transaction costs increase when inter-firm relationships require greater coordination. For example, coordination costs increase when design information becomes more complex. The complexity of design information and the degree that a deverticalised value chain can tolerate short product lifecycles depend critically upon whether the product architecture is integral or modular. Integral product architectures are more likely to require non-standard inputs, and changes in the design of particular parts tend to precipitate design changes in other areas of the system (Langlois and Robertson 1995; Fine 1998). Thirdly, coordination costs increase for parts whose supply is time-sensitive. This is clearly the case for just-in-time production and for fresh food products, which must be passed quickly along the supply chain.

Production network theory offers explanations of how the problems of motivation, such as avoiding, opportunism and loss of resource control, can be controlled in the presence of asset specificity and complex coordination without vertical integration. Network actors in many instances control opportunism through the effects of repeat transactions, reputation and social norms that are embedded in particular geographic locations or social groups. Network theorists (e.g. Jarillo, 1988; Lorenz, 1988; Powell, 1990; Thorelli, 1986) argue that trust, reputation and mutual dependence dampen opportunistic behaviour, and in so doing they make possible more complex inter-firm divisions of labour and interdependence than would be predicted by transaction costs theory. Social networks are one important way in which shared goals and expectations can be developed and maintained. They can also be built up through repeat contracting and trust-building strategies

pursued by firms that help firms to identify partners with shared approaches and expectations, thus providing a solution to the problem of not being able to identify which firms are likely to act opportunistically (Menkhoff, 1992; Humphrey and Schmitz, 1998).

Firm capabilities and learning is a third body of literature that GVC advocates used to develop theoretical framework. This work mainly appears in the management literature, especially the literature on corporate strategy, which has its roots in the resource view of the firm pioneered by Penrose (1959). According to Penrose's resource-based approach, how and whether firms can capture value depends in part on the generation and retention of competencies (that is, resources) that are difficult for competitors to replicate. The literature on firm capabilities and learning argues that the learning required to effectively develop the capability to engage in certain value chain activities may be difficult, time-consuming and effectively impossible for some firms to acquire, regardless of frequency or scale economies. Thus, firms must in certain instances depend on external resources. The recent work of geographers such as Hughes (2000), Henderson et al. (2002) and Kicken et al. (2001) has emphasised the complexity of inter-firm relationships in the global economy. The key insight is that coordination and control of global-scale production systems, despite their complexity, can be achieved without direct ownership.

Global value chain concepts draw on three streams of literature – transaction costs economics, production networks, and technological capability and firm-level learning – and identify three variables that play a large role in determining how global value chains are governed and change. These are: (1) the complexity of transactions, (2) the ability to codify transactions, and (3) the capabilities in the supply-base. The description of these three key determinants of the value chain governance is as follows:

> **1. The complexity of transactions.** The *complexity* of information and knowledge transfer required to sustain a particular transaction, particularly with respect to product and process specifications;

> **2. The codifiability of transactions.** The extent to which this information and knowledge can be *codified* and, therefore, transmitted efficiently and without transaction-specific investment between the parties to the transaction;

> **3. The competence of suppliers.** The capabilities of actual and potential suppliers in relation to the requirements of the transaction.

With the combination of these three key determinants, Gereffi et al. (2005) have distinguished five different types of value chain: 1) markets, 2) modular value chains, 3) relational value chains, 4) captive value chains and 5) hierarchy (table 2.14 and figure 2.12).

Table 2.14: Major exporters in the world clothing industry

Governance Type	Complexity of Transactions	Ability to codify transactions	Capabilities in the supply-base	Degree of explicit coordination and power asymmetry
Market	Low	High	High	*Low*
Modular	High	High	High	↕
Relational	High	Low	High	↕
Captive	High	High	Low	↕
Hierarchy	High	Low	Low	*High*
Excluded	*Low*	*High*	*Low*	*Not applicable*
Unlikely to Occur	*Low*	*Low*	*Low*	*Not applicable*
	Low	*Low*	*High*	

Source: Gereffi G., Humphrey J., Sturgeon T., "The governance of global value chains" (2005)

1. Markets. Market linkages do not have to be completely transitory, as is typical of spot markets; they can persist over time, with repeat transactions. The essential point is that the costs of switching to new partners are low for both parties.

2. Modular value chains. Typically, suppliers in modular value chains make products to a customer's specifications, which may be more or less detailed. However, when providing 'turn-key services' suppliers take full responsibility for competencies surrounding process technology, use generic machinery that limits transaction-specific investments, and make capital outlays for components and materials on behalf of customers.

Figure 2.12: Global value chain governance
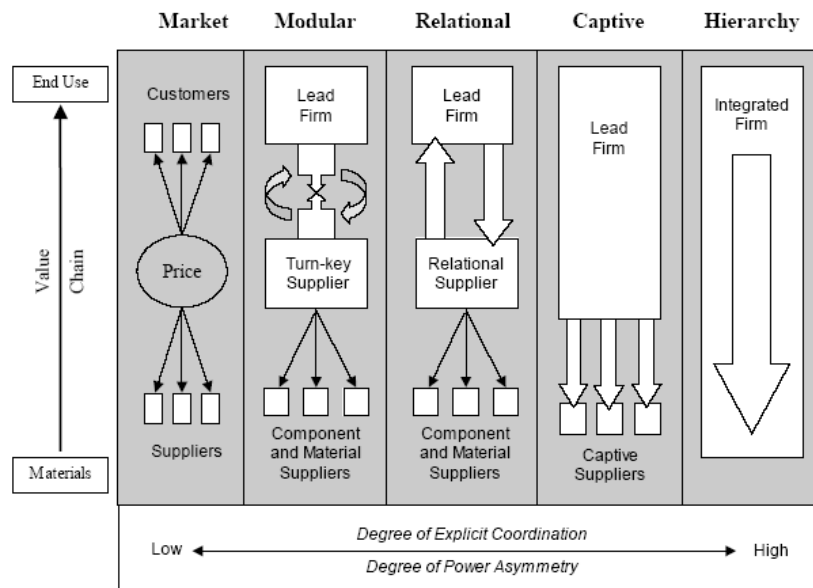
Source: Gereffi G., Humphrey J., Sturgeon T., "The governance of global value chains" (2005)

3. Relational value chains. In these networks we see complex interactions between buyers and sellers, which often create mutual dependence and high levels of asset specificity. This may be managed through reputation, or family and ethnic ties. Many authors have highlighted the role of spatial proximity in supporting relational value chain linkages, but trust and reputation might well function in spatially dispersed networks where relationships are built up over time or are based on dispersed family and social groups.

4. Captive value chains. In these networks, small suppliers are transactionally dependent on much larger buyers. Suppliers face significant switching costs and are, therefore, 'captive'. Such networks are frequently characterised by a high degree of monitoring and control by lead firms.

5. Hierarchy. This governance form is characterised by vertical integration. The dominant form of governance is managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates.

Varieties of industrial upgrading options in GVC

Gereffi (2008) defines industrial upgrading or upgrading as the acquisition of technological capabilities and market linkages that enable firms to improve their competitiveness and move into higher-value activities, while Giuliani, Pietrobelli and Rabellotti (2003), on the other hand, define upgrading as "innovating to increase value added", one that can be achieved "by entering higher unit value market niches, by entering new sectors, or by undertaking new productive (or service)

functions." Similarly, Porter (1990) and Kaplinsky (2000) refer to upgrading in such a way that they may start producing better and more efficient products or move towards more skilled activities.

Empirical and anecdotal evidence indicates that firms that are able to improve their capabilities and competencies in relation to those of their competitors are able to ensure sustained income growth. Therefore, upgrading is an important issue, especially for those concerned with how firms in developing countries can maximise the benefits of inserting themselves in global value chains, and how they can avoid declining incomes as cheaper sources of labour enter global markets.

With the deepening integration, industrial upgrading remains a major policy challenge in developing economies, especially for middle-income economies where a number of industries are established but have not yet reached the frontiers of world technology and are also under severe pressure to maintain their international competitiveness. For producers to maintain or increase incomes in the face of this pressure, they must either increase the skill content of their activities and/or move into market niches which have entry barriers and are therefore insulated to some extent from these pressures. Upgrading is a complicated task requiring a different set of competitive assets to previous stages of development. Changes in organisational and institutional structures at the national level are also required in order to facilitate it and allow a country to achieve its mid-term target of becoming a global player in mid-tech industries and to compete in those technologically advanced industries where skills are complex but not cutting edge (Amsden and Chu, 2003).

An early example of industrial upgrading is that of electronics production in Hong Kong, which began with local firms subcontracting radio assembly tasks from Sony in 1959. Assembly of television tuners and other low-end electronics products followed soon thereafter. Eventually, higher end transistors and chip assemblies became part of the portfolio of these manufacturers (Tsui-Auch, 1998). Gereffi (1999) provides the case of East Asian garment producers as another good sample of upgrading among developing countries. According to Gereffi (1999), they moved from (a) assembly of imported inputs, to (b) increased local production and sourcing, to (c) the design of products sold under the brands of other firms, and finally to (d) the sale of own branded merchandise in internal and external markets. Similar stories are common among footwear companies in Taiwan, apparel manufacturers in Hong Kong and computer firms in Singapore, which have made successful strides into higher value products, processes or manufacturing tasks in their value chain (Chang et al., 1999; Chu, 2009; Ernst and Kim, 2002)

In value chain analysis, both GCC and GVC, the concept of upgrading is used to identify the possibilities for producers to 'move up the value chain', either by shifting to more rewarding functional positions, or by making products with more value-added invested in them, and/or

providing better returns. Value chain advocates argue that industrial upgrading involves organisational learning to improve the position of firms or nations in international trade networks (Gereffi and Tam, 1998). Participation in GCC or GVC is a necessary step for industrial upgrading because it puts firms and economies on potentially dynamic learning curves. There are many obstacles, however, to moving up these chains from labour-intensive activities like export-oriented assembly, to more integrated forms of manufacturing like OEM and OBM production, to the most profitable and/or skill-intensive economic activities such as breakthrough innovations in new goods and services, design, marketing and finance. Particular attention has been given to the role of powerful lead firms that "undertake the functional integration and co-ordination of internationally dispersed activities" (Gereffi, 1999: 41) and to governance structures.

Humphrey and Schmitz (2000) have further classified the concept of upgrading to refer to four different shifts that firms or groups of firms might undertake[9]:

a. **Process upgrading:** firms can upgrade processes, transforming inputs into outputs more efficiently by re-organising the production system or introducing superior technology. This type of upgrading increases the efficiency of production either through better organisation of the production process or the use of improved technology. The need to cut costs and/or increase output in response to intra- or inter-chain competition drives process upgrading, reducing the per-unit cost of production. For example, the production reorientations involved in the move from craft production to mass production and then from mass to lean (or just-in-time) production would be a form of process upgrading (e.g. footwear producers in the Sinos Valley: Schmitz, 1999);

b. **Product upgrading:** firms can upgrade by moving into more sophisticated product lines in terms of increased unit values. The upgrading may be stimulated by changes in end markets, usually stemming from changes in customer preferences, or the desire for higher value added, higher quality and consequently more profitable products on the part of Micro and Small Enterprises (MSEs). To remain competitive in rapidly changing markets, developing country producers must be able to upgrade their products on an ongoing basis in order to adapt to new trends and achieve higher standards (e.g. the apparel commodity chain in Asia upgrading from discount chains to department stores: Gereffi, 1999);

c. **Functional upgrading:** firms can acquire new, superior functions in the chain, such as design or marketing or abandoning existing low-value-added functions to focus on higher-value-added activities. There are two ways functional upgrading can occur: 1) an entire

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[9] In addition to these four types of upgrading, Gerrefi, 1999, identified another type of upgrading, **marketing linkages upgrading** which refers to "a shift to higher-value-added chains and lead firms".

level of firms may be effectively eliminated, thus changing the structure of the chain and often improving the quality of information flowing to domestic producers; or 2) a single domestic producer or group of producers can acquire or develop productive capacity in higher-value stages to capture more of the product's value (e.g. Torreon's blue jeans industry upgrading from maquila to 'full-package' manufacturing: Bair and Gereffi, 2001);

d. **Intersectoral upgrading:** firms apply the competence acquired in a particular function of a chain to move into a new sector. Intersectoral upgrading is the entry of a firm into a completely new value chain or industry using knowledge acquired through production of another product or a specialised service. It typically requires multiple upgrading strategies to occur simultaneously or in sequence in order to enter the new industry successfully. It is especially notable as it facilitates a firm's acquisition of more skill, knowledge or technology specific to the new product. For example, in Taiwan competence in producing TVs was used to make monitors and therefore move into the computer sector (Humphrey and Schmitz, 2002; Guerrieri and Pietrobelli, 2003).

Figure 2.13: Leverage strategies
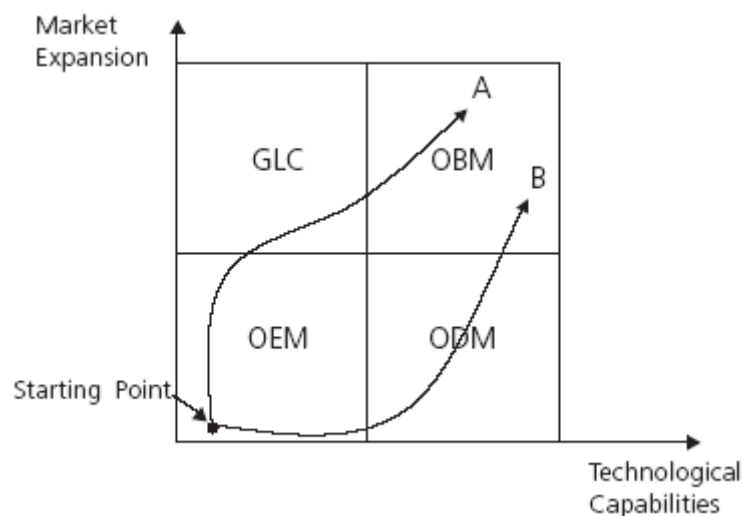
Source: Mathews, J.A. and D.S. Cho (2000)

In addition, Mathews and Cho assert that upgrading in global value chains can take place in two pathways, including market expansion and technological capabilities (Mathews and Cho, 2000). The own brand manufacturing (OBM)[10], which is usually the most profitable segment of a GVC, calls for market and technological competencies (see figure 2.13). Path A represents a trajectory that starts with process innovation of original equipment manufacturing (OEM)[11], and then develops,

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[10] Own brand manufacturing (OBM): manufacturers from the production expertise of OEM upgrade to first the design and then the sale of their own brand products.
[11] Original equipment manufacturing (OEM): a form of commercial subcontracting. The supplying firm makes a product according to a design specified by the buyer; the product is sold under the buyer's brand name; the supplier and buyer are separate firms; and the buyer lacks control over distribution.

exercising market expansion through global logistics contracting (GLC), providing the product at many locations, to reach OBM as a final point[12].

Path B, by contrast, focuses on capability enhancement through expanding functional responsibilities, from OEM to including some responsibility for own design and manufacture (ODM)[13], driving the firm after that to market its own designs under its own brand and reach the OBM position.

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[12] Global logistics contracting (GLC): global buyers place their orders with the manufacturers they have sourced from in the past; those manufacturers then outsource some or all of the requested production to affiliated offshore factories in low-wage countries (e.g. China and Indonesia). The triangle is completed when the finished goods are shipped directly to the overseas buyer. This triangle manufacturing changes the status of OEM manufacturers from established suppliers for retailers and designers in developed countries to middlemen with strong capabilities in logistics and management and that can include as many as 50 to 60 exporting countries in the buyer-driven value chains.
[13] Own design and manufacture (ODM): in addition to manufacturing, the supplier carries out parts of the design process, possibly in collaboration with the buyer. In the most advanced cases, the buyer merely attaches its own brand or 'badge' to a product designed and made by the supplier.

Putting the GVC framework together: how governance relates to upgrading

According to Humphrey and Schmitz (2000), "upgrading dynamics are clearly complex" and are influenced by several factors, namely: (1) governance relationships within the chain, (2) the upgrading firm's strategic intent and capabilities, and (3) the external contingencies that favour particular value chain configurations. They inserted that *governance is particularly important for the generation, transfer and diffusion of knowledge leading to innovation, which enables firms to improve their performance.* Humphrey and Schmitz (2000) argued that different forms of value chain will have an influence on performance and industrial upgrading, i.e. local producers working for global buyers enjoy considerable advantages in some types of upgrading but encounter barriers in other types.

Humphrey and Schmitz (2000) have set these out in a systematic and comparative way, focusing in particular on the implications for developing country producers. The main conclusions were:

- In the captive (quasi hierarchy) value chain, local producers experience fast product and process upgrading but make little progress in functional upgrading (e.g. moving into design, branding and marketing functions in the chain). (Sinos Valley footwear cluster)

- In the market-based value chain, process and product upgrading tends to be slower (not fostered by global buyers), but the road to functional upgrading is more open. However, the upgrading cannot be done without substantial investment from local producers and needs support from local institutions.

- The network (relational) value chain offers ideal upgrading conditions but is the least likely to be performed by developing country producers because of the high level of (complementary) competences required.

Captive governance and upgrading

Gereffi (1999c) holds the view that producers entering buyer driven (or quasi hierarchical) chains have good prospects for upgrading within production and subsequently into design, marketing and branding. His research on the garment chains illustrates how East Asian suppliers working for large US buyers were able to move from assembly to original equipment manufacturing (OEM), all the way to own design manufacturing (ODM) and even own brand manufacturing (OBM). Gereffi attributes this to 'organisational succession' or the process by which manufacturers start producing for buyers catering to the low end of the market and then move up to produce for buyers targeting more sophisticated market segments.

According to Humphrey and Schmitz (2003), local producers, especially those new to the global market, learn a great deal from global buyers about how to improve their production processes, attain consistency and high quality, and increase their speed of response to customer orders. Specifically, they cite the findings of Bazan and Navas Aleman (2001), which confirmed rapid process and product upgrading for Brazilian shoe producers exporting to the US and Europe; and of Kishimoto (2002), which showed the contribution of foreign buyers in the early export phase of computer producers from Taiwan.

While most authors agree that local producers experience significant product and process upgrading, there is yet no agreement on the prospect for functional upgrading. Evidence indicates that producing for global buyers is a promising starting point for moving up the value chain, but several studies show that firms face two types of obstacle when trying to upgrade, namely: buyer resistance and resource requirements (Humphrey and Schmitz, 2003).

In particular, the research of Schmitz and Knorriga (2000) in the global footwear chains suggests that local producers (in China, India and Brazil) encounter barriers to developing their design and marketing competence because such upgrading encroaches on their buyers' core competence. A more recent study of Brazilian footwear manufacturers (Bazan and Navas Aleman, 2001), confirm that even leading export manufacturers refrained for many years from making substantial investments in design and marketing, fearing that upgrading in these areas would upset their main US buyer, who accounted for 80 per cent of their output.

Functional upgrading is also difficult to undergo because the investment required is substantial and entails risk. Again, Bair and Gereffi (2001) cite the case of a company in Torreon that planned to launch its own line of apparel in the US market, but was prevented from doing so because "the amount of capital necessary to promote and market a new brand make such endeavors risky".

Market governance and upgrading

Humphrey and Schmitz (2000) compare upgrading patterns in market governance with hierarchical chains. They propose that firms in market governance have open-ended upgrading paths and there is no external blockage. Functional upgrading is not necessarily easy but there is no barrier arising from the organisation of the chain.

Network (relational) value chain and upgrading

Operating in a network-based governance chain is the most desirable but least likely scenario for most developing countries. The desirable outcome arises from innovation results occurring from an interactive process between producers and users. Several studies (Lundvall, 1988; Cassiolato, 1992), show that collaboration between users and producers is important in the design and debugging of new products and that the producer's competitiveness becomes structurally linked to the user's competitiveness.

However, it is less likely that firms in developing countries operate in such innovation-conducive network-based chains. First, the scope of learning from interaction is high at the early stage of the product lifecycle, however the exports of developing countries are typically mature products, such as apparel. To have such an equal relationship, firms in developing countries need to pick up the learning curve very quickly. Second, the competence differential between buyers and producers is large. Finally, this kind of relationship is fragile. To be able to bridge those gaps, it requires a large amount of investment to upgrade and this is sometimes a major obstacle for firms in developing countries.

GVC and economic performance

In addition to upgrading, Sturgeon (2002) argues that participating in 'modular' networks or governance leads to superior economic performance. He argues that, in network theory, production networks are held up as an alternative governance structure to the integrated firm and deemed more adaptable to change, therefore providing better economic performance in highly competitive or volatile markets (Powell, 1990; Cooke and Morgan, 1992).

Though the internal structure of captive and relational production networks, which is based on long-term relationships, may well be more adaptable than integrated governance, there are aspects of both relational and captive production networks that resist adaptation, especially while the models are projected outside the network's heartland in the context of globalisation. The interdependence that exists in captive and relational production networks leads to disadvantages because mutual dependence makes it more difficult, costly and time consuming to begin and end supplier relationships. While this feature limits opportunism, it also makes the overall system less adaptable since the ability to forge relationships with actors outside the network is constrained.

Modular production networks are characteristically relatively open. Openness in the modular network flows from efforts by all network actors to limit high levels of mutual dependence. Limited interdependence is based on several preconditions: heavy use of IT, suppliers that provide widely applicable 'base processes' and widely accepted standards that enable the codifiable transfer

of specification across the inter-firm link. These preconditions lead to generic capacity at suppliers that has the potential to be shared by the industry as a whole and highly codified links between lead firms and suppliers that allow the system to attenuate the build-up of thick tacit linkages between stages in the value chain. In addition, as suppliers gain financial strength, technical and operational competence and geographical reach – and as brand-name firms become extremely reliant on them – the possibility arises for them to take the further step of developing their own end-products in competition with their customers (Teece, 1996; Fine, 1998).

Upgrading traps for firms in developing countries

Though there might be benefits from modular networks, Sturgeon and Kawakami (2010) argue that though modular governance allows quick market entry for firms in developing countries, it can also lead to several traps. First, there are the high costs associated with acquiring highly functional components and subsystems, as well as the royalties that must be paid, directly or indirectly, to the platform leaders and other standard setters in the industry. Second, there is the 'modularity trap', as identified by Chesbrough and Kusunoki (2001), where the highly integrated off-the-shelf components and subsystems provided by platform leaders reduce product distinctiveness. By and large, the world's major contract manufacturers have been trapped in low value-added segments of the electronics GVC: manufacturing and iterative, detailed design. In the PC industry, most of the industry's profits have been captured by branded lead firms such as Dell and Hewlett-Packard, and especially by platform leaders in software operating systems (Microsoft) and CPU chipsets (Intel).

Overcoming the limits to industrial upgrading in modular governance

Though there are challenges and limits to industrial upgrading in modular governance, there are a growing number of important exceptions that suggest that new models of learning through close engagement in GVCs could be emerging, with broader lessons for developing countries (see Yeung, 2009).

Sturgeon and Kawakami (2010) use electronics companies from developing countries as an example for firms to escape these limitations: (1) global expansion through acquisition of declining brands (emerging multinationals); (2) separation of branded product divisions from contract manufacturing (ODM spin-offs); (3) successful mixing of contract manufacturing and branded products (platform brands) for contractors with customers not in the electronic hardware business; and (4) the founding of factory-less product firms that rely on GVCs for a range of inputs, including production (emerging factory-less start-ups).

2.4 Recent developments and limitations of GVC frameworks

Business models: what do firms do to create or capture value?

GVC advocates argue that participating in global value chains is a way for companies in developing countries to upgrade, i.e. acquisition of technological capabilities and market linkages that enable firms to improve their competitiveness and move into higher-value activities. However, the strong position of developing countries, which is the result of upgrading, in GVCs does not guarantee that the countries capture a large part of the value generated within GVCs, i.e. being integrated in GVCs is a necessary but not sufficient condition for capturing value within GVCs. For example, the commonly cited study of the Apple iPod clearly showed that the actual value added in China represented only a fraction (USD 4) of the final retail price in the United States (USD 300), even if the final product was imported from China (Linden et al., 2009). Manufacturing activities in China for the iPod constitute the pure assembly of parts and components that are largely produced in Japan, the United States and Korea and then exported to China for assembly. A large part of the value added (around USD 140 is created and captured by producers of parts and components. The distribution and retail sectors in the United States add another USD 75, while the rest (USD 80) is captured by Apple itself.

Though GVC advocates attempt to change the term 'commodity' from GCC to 'value' in order to capture the two meanings of 'value added', which is value creation and value capturing, GVC is not able to explicitly clarify the difference between value creation and value capturing within GVC literature. The concept that value creation is not the same thing as value capture was originated by Teece in his 1986 paper. His paper attempts to explain why innovating firms often fail to capture significant economic returns from innovations, while customers, imitators and other industry participants benefit. The research demonstrates that when imitation is easy, markets do not work well and the profits from innovation may accrue to the owners of certain complementary assets rather than the developers of the intellectual property.

In his latest paper, Teece (2010) asserts that to capture value firms or innovators need a well-developed business model. Teece refers to a business model as the manner by which the enterprise creates and delivers value to customers, and then converts payments received to profits. To profit from innovation, i.e. capture value, business pioneers need to excel not only in product innovation but also at business mode design.

Mathews (2006) made an attempt to incorporate GVC and the business model; he argued that for a firm or country that attempts to 'catch up' its prominent competitors, i.e. a latecomer firm[14], they cannot only think about the structure of GVC created by dominant firms, but need to think about the resources needed in order to develop.

In Mathews' view, participating in the GVCs and GPNs broadens the scope for getting gains from an open trade and investment regime, and thus diminishes pressures for protectionism. It can help developing producer countries to enter foreign markets, earn more foreign currencies, diversify their exports and, most importantly, get new skills, knowledge and technology — all considered as key factors for productivity enhancement and growth. He proposed the 'Linkage, Leverage and Learning' (LLL) framework as a powerful strategic tool or winning formula for developing countries to accelerate international expansion in conditions of globalised inter-connections. In his paper, he described the 'Linkage, Leverage and Learning' framework as follows:

"In the context of globalisation, latecomer firms are faced with new opportunities for linking up with emergent institutions and networks. This creates opportunities for latecomers to link up with these global networks. The more the global economy becomes interconnected, the more possibilities there are for such linkage. Through linkage, the latecomer firm can secure more than just a stream of revenue. It can tap its links with more advanced firms to acquire knowledge, technology, and market access – things that would otherwise be beyond the firm's limited resources. It is this capacity to secure more from a relationship than the firm puts in that in the strategy literature is referred to as leverage. These sequences of linkage and leverage can be repeated over and over again until a firm, or collection of firms within an industry, enhance their capabilities and become, potentially, advanced players themselves. The sustained and repeated practice of these strategies by groups of firms can be described as a form of industrial learning. Development can thus be characterised as a process of strategising by latecomers, through the steps of linkage, leverage and learning." (Mathews, 2006)

Mathews provides an alternative upgrading and competitive advantage strategy to the conventional resource-based view (RBV)[15] which argues that firms build their strategic distinctiveness on resources that are valuable, rare, non-imitable and non-transferable (Barney, 1991). He argues that participating in GVC creates opportunities for latecomers to link up with global networks. In doing so, latecomer firms, who suffer from disadvantages in technology, resources and

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[14] Russian historian Alexander Gerschenkron introduced the term 'latecomers' to explain patterns of 19th-century industrialisation in Europe. Gerschenkron argued that the industrialisation strategies of latecomer nations, like Germany and Russia, were different from those followed by first movers, like the United Kingdom and France. The latecomers suffered from the disadvantages of not having the industrial base of the first movers; and of not having advanced capital markets and financial institutions. Gerschenkron (1962) argued that the latecomers were able to acquire these features rapidly once equipped with a national industrialisation strategy, by bypassing earlier steps. Germany, for example, was able to establish technical excellence in the new science-based industries, like dyestuffs, where its established technical institutes staffed with scientific faculty gave them a distinct advantage over an early mover like the United Kingdom with its patchwork training arrangements.

[15] RBV theory was launched effectively by Wernerfelt (1984), drawing on earlier work such as Penrose (1959/1995), which argued that firms compete not just in terms of final products, but more fundamentally in terms of the underlying 'resources' which make production and product diversification possible. This has since turned into a most productive stream of research, which has been popularised in the form of the 'core competence' view of competitive strategy (Prahalad and Hamel, 1990; Sanchez and Heene, 1997). Fundamental efforts have been expended to establish the criteria of firms' resources which lend long-lasting or 'sustainable' competitive advantages (Dierickx and Cool, 1989; Barney, 1991, 1995). Efforts to integrate the resource-based theory with economic accounts of firm behaviour (Peteraf, 1993) and with dynamic accounts of firms' capabilities enhancement (Teece, Pisano and Shuen, 1997) show how the theory is becoming central to an understanding of firm competitive behaviour.

knowledge will need to learn and acquire knowledge and technology from more advanced and developed companies to be able to compete and catch up their dominant competitors. This means that creating industrial clusters with stakeholders consisting of domestic players is not sufficient for upgrading. To be able to upgrade, firms need to identify required resources and capability, which can be learnt or acquired by interacting with key international players outside local clusters.

In theory, any firm lacking resources in foreign countries can take advantage of the new features of the global economy, particularly its globally interconnected character, to become an international player as well. However, in practice, in what circumstances do dominant firms allow latecomer firms, like producers in Thailand, to participate and be accepted in the global network? These latecomer firms need to be able to offer something to dominant players in return. Mathews argued as follows:

> "The task (of latecomer firm) is to identify the sources of complementarity so that the latecomer firm has something to offer in return for the economic or technology transfer. This is where the connection with the processes of globalisation and the emergence of novel institutional forms, such as global value chains, is so important. Private sector firms such as the Hong Kong-based Li & Fung have developed a business model around the creation of global value chains as it receives orders from buyer firms in the advanced countries. The point of a strategic perspective is that global value chains are being created and disbanded all the time, but under conditions that reflect the constraints and dynamics of the global economy. A framework for development couched in strategic terms, and linking industrial development to globalisation processes, would have major practical implications."

Mathews implicitly argued the importance of the business model for industrial upgrading in GVC. He strongly urged latecomers to identify what customers want (such as value propositions to offer to foreign markets and foreign intermediaries), on top of identifying the key resources and capability they need for global linkage. Mathews examined some examples that illustrated various business models that latecomer firms utilise to participate in the GVC. Acer, a global IT firm, began its internationalisation through large acquisitions followed by pursuing expansion strategy through partnerships. Li & Fung became globalised through the construction of vast supplier networks across continents and purchase of existing players. Lenovo, a Chinese manufacturing high-tech firm, acquired technology knowledge and a global brand by merging with the IBM PC business.

It is therefore important for latecomer firms to develop and identify their business model so that they can participate in the GVC. However, latecomer firms will also need to evaluate what their exact business model is and what they should put in it. The next section will provide a brief explanation of 'business model' and its components.

Definition of business model

The business model concept is becoming increasingly popular within management and strategy literature. However, there is no dominant definition for it and it has many forms. One of the earliest definitions of the concept of business models was offered by Konczal (1975), who described a business model as a computerised model in which a simple modelling of business functions was seen as a necessary aid in managing a company's internal processes and routines. Table 2.15 summarises some of the most prevalent definitions suggested for the business model.

Table 2.15: Definitions of a business model

Authors	Definitions
Teece	How a firm delivers value to customers and converts payment into profits
Zott & Amit	…a system of interdependent activities that transcends the focal firm and spans its boundaries…
Williamson	...cost innovation business model offers advantages in radically new ways meaning more for less…
Gambardella & McGahan	Business model is a mechanism for turning ideas into revenue at reasonable cost
Itami & Noshino	…business model is a profit model, a business delivery system and a learning system
Yunus, Moingeon & Lehmann-Ortega	A value system plus a value constellation
Casadesus & Ricart	The logic of the firm, the way it operates and how it creates value for its stakeholder
Demil & Lecoq	The way activities and resources are used to ensure sustainability and growth
Sabatier, Rousselle & Mangematin	Cross roads of competence and consumer needs
Timmers, 1998	The business model is "an architecture of the product, service and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; a description of the sources of revenues"
Amit & Zott, 2001; Zott & Amit, 2010	The business model depicts "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (2001: 511). Based on the fact that transactions connect activities, the authors further evolved this definition to conceptualise a firm's business model as "a system of interdependent activities that transcends the focal firm and spans its boundaries"
Chesbrough & Rosenbloom, 2002	The business model is "the heuristic logic that connects technical potential with the realization of economic value" (p. 529).
Magretta, 2002	Business models are "stories that explain how enterprises work. A good business model answers Peter Drucker's age old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?"
Morris et al., 2005	A business model is a "concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets" (p. 727). It has six fundamental components: value proposition, customer, internal processes/competencies, external positioning, economic model and personal/investor factors.
Johnson, Christensen, & Kagermann, 2008	Business models "consist of four interlocking elements, that, taken together, create and deliver value" (p. 52). These are: customer value proposition, profit formula, key resources and key processes.
Casadesus-Masanell & Ricart, 2010	"A business model is . . . a reflection of the firm's realized strategy" (p. 195).
Teece, 2010	"A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value"

Source: Baden-Fuller and Morgan, 2010

Despite no clear definition of the term 'business model', scholars agree that the role of the business model is to provide a set of generic descriptions of how a firm organises itself to create a distributable value in a profitable manner. Osterwalder (2004) attempted to identify the domains, concepts and relationships addressed in the business model field in order to create a common language shared among a specific community of practice or a more formal ontology of the business model domain. He identified the most common set of descriptions or 'components' among business models in the literature, by comparing various models (see table 2.16). He synthesised the components proposed by different authors and showed how they relate to the nine building blocks.

Table 2.16: Nine business model components

Business model ontology	Business model building block	Description
Product	Value proposition	Gives an overall view of a company's bundle of products and services.
Customer interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution channel	Describes the various means by which the company gets in touch with its customers.
	Customer relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure management	Value configuration	Describes the arrangement of activities and resources.
	Capability/ Core competency	Outlines the competencies necessary to execute the company's business model.
	Partnership	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialise value.
Financial aspects	Cost structure	Sums up the monetary consequences of the means employed in the business model.
	Revenue model	Describes the way a company makes money through a variety of revenue flows.

Source: Osterwalder, A. (2004)

The business model helps break down key factors or components to understand what firms put together to define their 'competitive advantage' or 'value proposition' to be able to participate in GVC. To develop a set of effective policies that assist latecomer firms to be more competitive and able to participate in global networks, those policies have to translate into business models that entrepreneurs or producers can relate to and therefore acknowledge their values to their business. Governments and policy makers alike need to identify a specific business model that is adequately designed for a specific industry so that a set of appropriate policies and measures can be effectively executed.

The previously aforementioned economic statistical data already shows that the textile sector was doing relatively better than the clothing sector under similar high-competition circumstances.

This, therefore, could implicitly suggest that one sector may not yet be able to find or meet the value propositions of its customers, but the other has found some answers in a business model that works. Thus, a brief review of the business model concept may help us better understand the factors that determine the difference in growth of these sectors.

So, examining the business model of Thai textile and clothing producers will help us to understand the value propositions, i.e. what is on the table, of these firms when they attempt to participate in networks and which networks. We can also isolate likely sources of growth or decline in these sectors. Finally, this will help us identify mistakes or weaknesses in the abilities of these firms to participate in the global network; this will in turn raise more focused questions about what, if anything, the government can do to improve this.

Table 2.17: Business model components comparison

Business model ontology	Stahler 2001	Weill & Vitale 2001	Petrovic, Kittl et al.	Gordjin 2002	Afuah & Tucci 2003	Tapscott, Ticoll et al. 2000	Linder & Cantrell 2000	Hamel 2000	Mahadevan 2000	Chesbrough & Rosenbloom 2000	Magaretta 2002	Amit & Zott 2001	Applegate & Collurra	Maitland & Van de Kar 2002
Value proposition	Value proposition	Value proposition & strategic objective	Value model	Value offering	Customer value		Value proposition	Product/ market scope		Market segment	What does the customer value?		Market opportunity	Market segment
Target customer		Customer segments		Market segment	Scope			Market scope		Market segment	Who is the customer?		Market opportunity	Market segment
Distribution channel		Channel	Customer relations model				Channel model	Fulfilment & support, info & insight			How can we deliver value at an appropriate cost?		Marketing/ sales model	
Customer relationship			Customer relations model				Commerce relationship	Relationship dynamics					Brand and reputation	
Value configuration	Architecture		Production mode	Value configuration	Connected activities, value configuration	b-webs	Commerce process model	Core processes	Logistical stream	Structure of the value chain		Architectural configuration	Operating model	
Capability/ Core competency		Core competencies, CSF	Resource model		Capabilities			Core competencies, strategic assets					Organisation and culture, management model	
Partnership	Architecture	e-business schematics		Actors	Sustainability	b-webs		Suppliers, partners, coalitions		Position in the value chain		Transaction component	Partners	Companies involved in creating value
Cost structure				Value exchange	Cost structure					Cost structure	What is the underlying economic value?			
Revenue model	Revenue model	Source of revenue	Revenue model	Value exchange	Pricing, revenue source		Revenue model	Pricing structure	Revenue stream		How do we make money in this business?		Benefits to firm and stakeholders	Revenue model

Source: Osterwalder, A. (2004)

Upgrading and performance measurement

The literature on global value chains (GVCs) (Gereffi, 1999; Gereffi and Kaplinsky, 2001) and resource linkage, leverage and learning (Mathews, 2006) pays particular attention to abilities of local firms to 'upgrade' by learning from the global leaders of the chains. In addition, Humphrey and Schmitz (2000) argue that governance of the global value chain has an important effect on the scope of local firms' upgrading and performance (Humphrey and Schmitz, 2000). They inserted that governance is particularly important for the generation, transfer and diffusion of knowledge leading to innovation, which enables firms to improve their performance

In GVC literature, they typically equate the term 'upgrading' and/or 'performance' with firms 'moving up' the GVC and/or increasing value added activities, i.e. moving from OEM to ODM then OBM. This perspective only defines the term 'upgrading' or 'industrial upgrading' as the ability of producers "to make better products, to make products more efficiently, or to move into more skilled activities" (Pietrobelli and Rabellotti, 2006, p. 1). One clear example of upgrading among developing country producers is the case of East Asian garment producers. According to Gereffi (1999: 47), they moved from (a) assembly of imported inputs, to (b) increased local production and sourcing, to (c) the design of products sold under the brands of other firms, and finally to (d) the sale of own branded merchandise in internal and external markets. Industrial upgrading, from this perspective, involves organisational learning to improve the position of firms or nations in international trade networks (Gereffi and Tam, 1998).

However, though GVC advocates have defined 'process' of upgrading, they have not been able to define the outcome or measure of those processes. They vaguely assume that those upgrading will have an impact on performance, which results in no agreed-upon quantitative measures of upgrading. Milberg and Winkler argued that industrial upgrading may be hard to quantify, but nonetheless seems to be one of those things that 'you know when you see it'. Gereffi et al. (2001) argued in their paper that a fundamental aspect of global value chain research is how 'value' is conceptualised and measured. They assessed three metrics that have been used to assess value in global chains: profits, value added and price markups. Recently, Amaghini (2006) tried to quantify 'upgrading' by decomposing the change in sector exports into three components: 1) external market conditions; 2) change in market share; 3) change in product price. Kaplinsky and Readman (2004) developed a similar framework focusing on market share and exporting unit value as indicators of upgrading. Milberg and Winkler (2010) collected a list of measures of economic upgrading that have been used in past studies done at different levels of analysis. It shows a dizzying variety of measures across level of analysis. (Table 2.18)

Table 2.18: Measures of industrial upgrading

Level of aggregation	Industrial upgrading	
Nation	Productivity growth	Increased capital intensity
	Value added growth	Export growth
	Profit growth	Income in exports
Sector on GPN	Productivity growth	Increased capital intensity
	Value added growth	Increased skill intensity of functions
	Profit growth	(assembly/OEM/ODM/OBM/full package)
	Export growth	Increased skill intensity of employment
		Increased skill intensity of exports
Firm	Increased skill intensity of functions	Composition of jobs
	(assembly/OEM/ODM/OBM/full package)	Increased capital intensity mechanization
	Developing skill to manage the supply	Product, process, functional, chain
	chain	upgrading

Gereffi et al. (2001) maintained that, given the difficulties inherent in these and related measures of value, global value chain analysts have to be pragmatic and eclectic in gathering multiple indicators through both primary and secondary sources, and in focusing on those segments of the chain that are of greatest relevance to the industries and countries under investigation.

Moreover, measurement of upgrading is required to identify upgrading benefit. This is because government and policymakers believe that upgrading implies that firms in developing countries will receive and capture the value and benefit of upgrading. However, there could be another side of the coin that leads firms to try to offload high risk or less profitable activities to those firms. For example, what is identified as functional or intra-chain upgrading often describes situations in which suppliers take on additional responsibilities (such as design, logistics management or distribution) at the behest of the lead firm. While these suppliers thereby 'add value' from the vantage point of the chain driver, another way to interpret this process is the off-loading of less profitable activities onto more vulnerable firms. The ability of a supplier to add greater value to the lead firm may increase its competitiveness vis-à-vis its rivals (until they develop analogous capabilities), but a number of studies suggest that firms which 'succeed' in intra-chain or process upgrading do not necessarily reap the rewards, including increased security and profitability, with which upgrading is ostensibly associated (Fitter and Kaplinsky 2001; Gibbon 2001; Schrank 2004; Schurman 2001).

In a recent study Dedrick, Kraemer and Linden (2007) attempted to identify abilities of capturing value in the global value chain of iPod and notebook PCs using the 'value added' concept.

This concept corresponds with the whole GVC and GCC debate which is based on the notion of there being 'more' valuable and less valuable roles to play in global value chains. The measure that GVC and GCC implicitly discussed is 'value added', which is the same language to government and policymakers. They argue that, at firm level, the difference between revenue and the cost of externally-sourced inputs is a node's value added. By the logic of accounting, it is also roughly equal to the wages, profits, depreciation and interest expense of the firm. At the national level, the aggregation of within-border value added across all companies equals Gross Domestic Product.

The distribution of value added across organisational and national boundaries thus directly concerns variables of importance to policymakers. An analysis of value added at the industry, firm or product level can help to answer important policy questions such as: To what extent does successful product development translate into national economic and employment growth? To what extent are local fortunes tied to those of other countries?

To estimate the value added or the value captured by suppliers, data on value added are usually not available, because the wage bill or director costs that should be included in value added are hidden within 'cost of goods sold' or 'cost of sales'. Instead, the number that Dedrick, Kraemer and Linden (2007, 2008) used to estimate the value captured by suppliers is 'gross profit', which is the difference between 'net sales' and cost of goods sold. Figure 2.14 shows the difference between value added and gross profit. The horizontally striped area includes the components of value added and the smaller vertically striped area includes the components of gross profit, or value captured by the firm.

Figure 2.14: Components of Value Added and Gross Profit

However, they insert that value added is only one aspect of the value created by a successful product; there could be other measurements worth considering. In their newer paper, Dedrick, Kraemer and Linden (2009) estimated the value captured by the suppliers by considering three firm-level measures of profit: gross margin (GM), operating margin (OM) and return on assets (ROA). GM is the ratio of gross profit (the difference between 'net sales' and 'cost of goods sold') to net sales. GM tells what share of a firm's sales price is retained after the direct costs of making its goods or services are deducted; it is the measure that comes closest to the product-level profit that we analyse for the lead firm. OM is the ratio of operating profit (which subtracts overhead costs including research, development, sales, general and administrative expenses from gross profit) to net sales. OM shows

the success of a firm's overall productive and innovative activity. Return on assets (ROA), the ratio of net profit (or loss) to total assets (an accounting value reported on a firm's balance sheet), shows the firm's economic efficiency in the use of capital from its shareholders and creditors.

We argue that for GVC to be acceptable to a greater extent from economic development to other areas such as in business and strategic management arenas, measurement of 'performance' and 'growth' should reflect the context about participant expectation. This means that the issue is not what theory expects but what participants in value chain, particularly entrepreneurs, management or business owners, expect to see as benefits they can 'capture'. So the evaluation of impacts of GVC should be about examining a range of metrics that capture possible benefits that those participants want to see in their business models and financial statement. In addition, to understand the impact of GVC and to be acceptable to practical, empirical evidence should illustrate 'growth' of improvement of more than a particular matric. For an economic theoretical framework to be applicable to the practical world, we need to confirm that those industrial policies, such as GVC, can have a positive effect on various performance measurements that are relevant to business practice.

2.5 Research questions

As can be seen above, there has been an interestingly different growth pattern between the textile and clothing sectors following the end of the protectionist era of development. The clothing segment's performance has significantly declined, both in volume and in price per unit, while that of the textile segment has done relatively well, with an improved price per unit due to increasing competition from low-cost producers such as China.

The Thai government has attempted to stimulate growth in these sectors, however, it does not appear to be producing a great result or at least appear to contradict the empirical historical review. First, as aforementioned, the government perceives the textile and clothing segments of the industry as one static industry and therefore has adopted a one-size-fits-all policy implementation. However, the industry has shown itself to be quite complex with more levels of dynamic and interactions among parties involved than the government understands. Secondly, the policy focuses mainly on domestic issues including clusters, supply-side improvements and so forth, and does not seem to have taken into account the international intermediaries and their own strategic interests reflecting international market conditions. The government is, therefore, firstly required to have a clear and true understanding of the relationships of buyers and sellers in the international markets, to know key players who control the markets, to recognise how other competitors have moved up the value chain and to identify key growth drivers for the industry. Furthermore, the government also needs to truly capture the clear structure and upgrading opportunities of the textile and clothing industry. After an extensive literature review, we can conclude the following research questions.

Firstly, 'global value chain'[16] advocates suggest that governance structure, authority and power relationships within the value chain determine the performance and upgrading ability of an industry[17]. Therefore, if each sector is organised independently with different dynamics and performances, this means that firms in each value chain face different phases of development pressure and require different types of industrial upgrading. The different characteristics, market routes and business models in the two sectors mean that each sector requires unique types of trading intermediary firm to distribute their products. These trading intermediaries, as well as their end-consumers, will assign distinctive governance/relationships, which will, in turn, have a strong effect on sector performance and upgrading abilities (Gereffi, 1994, 1999; Humphrey and Sturgeon, 2005).

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[16] It focuses on the 'governance structure' of value chains and on the role of diverse lead firms in setting up global production and sourcing networks. The framework, therefore, allows understanding of the underlying factors determining the ability of certain players/countries to capture the value generated within a particular global chain.

[17] Gereffi (1999) suggests that participation in global value chains is a necessary step for industrial upgrading because it puts firms and economies on potentially dynamic learning curves. Meanwhile Humphrey and Schmitz (2002) argued that different forms of value chain have an influence on industry upgrading i.e. local producers working for global buyers enjoy considerable advantages in some types of upgrading but encounter barriers in others.

For the Thai government to adopt and apply this framework effectively, we need to examine and test the relevance of the GVC concept in Thailand, to see the experience, upgrading type and distribution channels of firms in the textile and clothing industry. This therefore leads to our first research question:

> *'What are the differences in experience of firms in the textile and clothing segment with regard to export growth and how are these experiences distributed?'*

In addition, for GVC to be an effective policy, we need to examine whether the theoretical framework is relevant in the real world and can have an impact on a greater proportion of firms in the industry. In addition we would like to examine which variables are key to different growth patterns between the textile and clothing sectors. This therefore leads to the second question that will test the GVC theoretical framework:

> *'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to patterns in the governance of the networks they are linked to?'*

The first two research questions will attempt to understand the distribution activities of each segment of the industry in more detail, particularly the differences between types of trading intermediary in the two segments, the different factors that affect these trading firms and how these differences have had an impact on the differential performance of the sector over the past decade. The research will explore the roles of lead firms such as trading firms and overseas buying/sourcing offices on industrial upgrading of the Thai textile and clothing industry through their linkages with the global value chain. It will also investigate the 'inter-relationship' among local industries in the global value chain such as the connections and differences among these sectors. The governance structure, authority and power relationships within each of the sectors will also be analysed to determine the upgrading ability of the industry. A true and more in-depth understanding of the industry at international level will certainly help the government and related policy makers design and execute an effective and appropriate set of policies aimed to help stimulate the industry's performance and growth, which in turn will lead to increased competitiveness.

Furthermore, much of the literature reviewed in this chapter suggests that the ability of industries to 'catch up' internationally depends upon what firms need in order to grow their businesses. A more in-depth understanding of local firms is also important. The related literature suggests that even firms in the same industry have different ways of defining their business model,

which implies that there are differences in the components and ingredients adopted by each firm. This gives us the third main research question:

'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to differences in business models of firms in this industry?'

Moreover, the main motivation behind this thesis is to investigate and fill current gaps in Thailand's policy recommendations for the industry. Although trading intermediaries and distribution channels are very important routes to the overseas market for Thai firms, Thailand still lacks a true understanding of the roles of the distribution channel and its impact on export performance and industrial upgrading. The results of the research will be used to complement the existing set of policies for the industry. The prospect of upgrading for Thailand's textile and clothing companies will be identified and recommended later in the paper.

This study significantly focuses on the textile and clothing industry because it is one of the largest industries worldwide and is one of the most important in Thailand. Furthermore, increasingly intense competition within the industry from low-cost producing countries, particularly China, presents a number of challenges for textile and clothing producers worldwide, which has also been witnessed in recent years. Firms in other developing and developed countries have to adapt to this changing environment in order to remain competitive.

Given that this is a new research area, I believe it will provide a better understanding of the dynamic linkages between local and global and of its implications for economic and social development. It is also hoped that the findings of this research will help future development of industrial policy in facilitating industrial upgrading. This research intends to complement, rather than criticise or challenge, existing policies. This will also be one of the very first pieces of research that focuses on the distribution channel of Thailand's textile and clothing industry.

Chapter 3: Research methodology

This chapter elaborates on the research design employed in this study, including the rationale for the selection of such a method. Specifically, it explains why the selected research methodology is appropriate for this thesis and how it has been implemented in light of the research question. Moreover, this chapter illustrates data collection techniques selected in accordance with the chosen research method, so that my research questions can be answered adequately.

As mentioned in chapter 2, my hypothesis argues that there could be two main factors that contribute to the differences in performance of Thailand's textile and clothing industries including, firstly, differences in governance, and secondly, differences in business models employed by the two sectors. Consequently, the research design methodology that can appropriately answer the two specific research questions proposed in chapter 2 will have to involve both qualitative and quantitative methods. The qualitative research method gathers the required data and information using literature review, expert interview and semi-structured firm interview designed to help examine and provide a better understanding of the nature, characteristics, roles and activities of each organisation from both sectors, as well as the relationships between firms and so forth. Thereafter, the quantitative method is employed, using a survey to verify and confirm the findings obtained from the qualitative research stage.

The following sections elaborate on the reason why the mixed research paradigm of qualitative and quantitative methods is the most appropriate research tool to use to answer my proposed research questions and explain which data collection technique should be used for each research method to gather the information and data needed to help test my hypothesis.

3.1 Qualitative versus quantitative methods

There are three main objectives of this research: 1) to understand the various different governance and upgrading experiences of various firms in the textile and clothing industry; 2) to identify whether governance or GVC-related variables have a strong relationship with the performance of Thailand's textile and clothing sectors; and 3) to identify whether Business Model-related variables have a strong relationship with the performance of Thailand's textile and clothing sectors. To be able to find the answer, using only one research method, i.e. either qualitative or quantitative, will not be able to help us. A qualitative method will help us to explore and understand the various experiences of firms and how they upgrade, it will also provide us with in-depth understanding of the business model. Meanwhile a quantitative method helps us in reconfirm the findings from our qualitative analysis and statistically identify and analyse the relationship between GVC variables and performance. The following section will explain the strengths and weaknesses of both methods and give a rationale as to why we adopted both methods.

3.1.1 Qualitative method

This research methodology, which is based on interpretivism and constructivism (Sale et al., 2002), is employed as a tool to explore and understand people's beliefs, experiences, attitudes, behaviour and interactions. It is used in many different academic disciplines, traditionally in the social sciences, however in recent years it has also been employed in market research and other disciplines. As the name suggests, the qualitative research method basically produces non-numerical data such as a description of a firm's characteristics, rather than a measure of its characteristics.

What researchers attempt to gain from conducting qualitative studies is usually an in-depth understanding of human behaviour and the rationale behind such behaviour. Basically, this type of research and study tries to probe into questions not just about the 'what', 'where' and 'when', but also the 'why' and 'how' of human behaviours and decision making. Therefore, with this type of research, population samples are usually smaller and more focused (Sale et al., 2002).

Qualitative research is usually used when researchers are not certain of what to expect, what problem to define or what approach to develop. Moreover, it is executed when issues of interest need further investigation (Mora). There are five major types of qualitative research that use similar approaches: phenomenology, ethnography, case study research, grounded theory and historical research (Johnson and Christensen).

3.1.2 Quantitative method

The quantitative method concentrates on measurement when data is either collected or analysed. Findings that are usually the results of a quantitative method are objective knowledge, which means the knowledge exists independently of involved people's beliefs and values (Creed et al., 2004). Researchers employing a quantitative method usually have the goal of wanting to measure and analyse causal relationships between variables within a value-free framework. The method is also used to help elaborate on quantitative findings (Sale et al., 2002).

The main techniques employed in quantitative research usually include randomisation, blinding, highly structured protocols, and written or orally administered questionnaires with a limited range of predetermined responses. Therefore, sample sizes are comparatively larger than those included in qualitative research, so that adequate statistical methods used to guarantee the samples' representativeness can be employed (Sale et al., 2002).

Quantitative research is extensively used in many fields of study, including social sciences such as psychology, economics, sociology and political science, and sometimes in anthropology and history. Quantitative research methods comprise a number of research types such as survey research, correlational research, experimental research and causal-comparative research (Sukamolson, 2003).

3.1.3 The mixed paradigm of qualitative and quantitative research methodology

In trying to answer these three research questions, this thesis will firstly need to develop and see industry structure and how firms operate from a new perspective. Unlike the current method that takes a macro view and assumes that firms in the textile and clothing industry have a similar or homogenous pattern, this thesis is trying to explore and examine firms' characteristics, upgrading approach and relationship with their international buyers. In addition, to compare and confirm the industry picture with the current view, the thesis is trying to examine whether the structure is comparable to what GVC envisages in the global apparel industry. The research method employed needs to be able to help us see and examine those characteristics and experiences, hence a more accurate picture of the industry. Moreover, the thesis needs to test the relationship between governance and business model variables with performance, and it needs a research method that allows us to quantitatively test and explain such relationships.

In summary, we require a research method that allows us to explore, examine and have in-depth understanding of how the industry operates and is structured and examine the experience of firms within the various value chains. Further, we require a research method that allows us to test the GVC theoretical framework and reconfirm the market structure of the industry. This implies that

either a qualitative or quantitative research method alone is inadequate for achieving satisfactory findings and answering the research question.

Both methods, though, have many advantages as well as limitations. Qualitative research may be best used to explore a problem, map the complexity of a situation, and provide a detailed understanding of a problem. However, qualitative findings arise out of studying a few individuals and lack the ability to generalise the results. On the other hand, quantitative research may be best used to understand the relationship among variables or to determine if one group performs better on an outcome than another. Although researchers quantitatively examine many individuals, this cannot give general explanations for the relationships among variables, and the understanding of any one individual is diminished. Hence, the limitations of one method can be offset by the strengths of the other, and the combination of quantitative and qualitative data provides a more complete understanding of the research problem than either approach by itself.

In addition, in recent years, many researchers have accepted that the mix of two research methods is frequently the most appropriate way to find what they are searching for. For example, Haase and Myers (1988) stated that they share the same purpose in trying to understand the world in which we all live, while Reichardt and Rallis (1994) affirmed that the two methods "shared commitment to understanding and improving the human condition, a common goal of disseminating knowledge for practical use, and a shared commitment for rigor, conscientiousness, and critique in the research process" (Sale et al., 2002). The mixed method provides a bridge across the sometimes adversarial divide between quantitative and qualitative researchers.

The mixed method is used in this thesis to reduce those limitations and enhance its strengths. We need to have an in-depth understanding of industry structure, industrial operations and a firm's business model; in addition, we need to generalise the exploratory findings in order to test the theoretical framework with our empirical evidence.

Figure 3.1: Mixed research methodology

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┌─────────────────────┐        ┌─────────────────────┐
│  Firm and industry  │        │                     │
│  expert interview   │        │     Firm survey     │
└─────────────────────┘        └─────────────────────┘
           │                              │
           ▼                              ▼
┌─────────────────────┐        ┌─────────────────────┐
│ Industry structure  │ ◄──────┤ Confirm empirical   │
│ and organisation    │        │      finding        │
└─────────────────────┘        └─────────────────────┘
                                          │
                                          ▼
                               ┌─────────────────────┐
                               │ Theoretical testing │
                               │   & exploratory     │
                               └─────────────────────┘
```
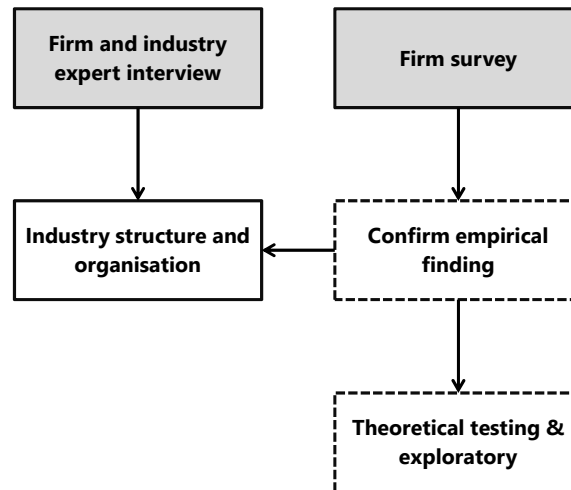
The research methodology for this thesis is illustrated in figure 3.1. The thesis will first adopt a qualitative method, i.e. expert and firm interview, in order to understand industry structure operation, including a firm's business model, governance and upgrading experience. This interview will result in a hypothetical industry structure and business model. However, since we interviewed only a few firms we therefore need to use a quantitative research method, i.e. a survey, to justify and reconfirm our findings. In addition, the interview process is used to investigate the questions that need to be asked, the variables that need to be measured and the theories that may guide the study from the survey. The interview helps us learn what questions, variables, theories, and so forth need to be studied and then follow up with a quantitative study to generalise and test what was learned from the exploration. The survey is adopted to verify and confirm the findings obtained from the early research stage. This was also an attempt to capture information that cannot be explored during the interview stage. The data from the survey is also used to test preliminary hypotheses and prove the practicability of research methods

3.2 Research method for this research

This study employs the mixed model research method, using both qualitative and quantitative methods to adequately answer my proposed research questions. As stated in chapter 2, I attempt to examine whether or not the differences in the performance of Thailand's textile and clothing sectors are influenced by (1) differences in governance or (2) differences in business model, or both. Typically, to test this theoretical framework, I could only collect data from firm surveys and perform statistical analysis to confirm the hypothesis. However, to have a better understanding of the industry and to reconfirm my understanding of organisation and structure, I started my research by collecting qualitative data such as structures, types of trading firm and role, differences in markets, relationships among parties involved, differences in performance of the two sectors and so forth. Furthermore, I adopted quantitative data via surveys to verify and confirm the findings obtained from the early research stage. This was also an attempt to capture information that cannot be explored during the interview stage. Being able to figure out the reasons behind the two sectors' different performances will therefore help provide a better set of guidelines to policy makers. In addition, the survey data is used to test the aforementioned hypothesis.

I adopted three research methodologies to reach the conclusion. First, data reviews were employed to help us build a high-level picture of the different types of firm and activity using the framework to review secondary materials, and by interviewing experts. Second, a series of semi-structured interviews with a small number of samples were conducted to help us understand the business model of companies in various sectors, i.e. textile manufacturing, clothing manufacturing and trade intermediaries. This helped us build the global value chain (GVC) type from a bottom-up perspective and understand key concerns and issues of business operators or owners. Finally, a larger-scale survey helped us verify and reconfirm the findings from industry data reviews, expert interviews and firm interviews.

The following section will explain each of the data collection methods employed and explain how each method was used specifically for this thesis.

3.2.1 Literature review

Literature review is an in-depth and critical assessment and evaluation of other people's research or studies. This part of the data collection process provided me with existing knowledge based on relevant empirical research, producing a base-line description of the industry and basic information about the firms that would be interviewed in the firm interview and survey stages.

Because of its versatile nature, literature review provides data and information at both overview and in-depth levels, which can be used in the first stage of the research. Furthermore, it is a comparatively efficient way to quickly collect an extensive amount of data at minimal cost as resources can be retrieved either from the library or online and cooperation of others is not necessarily required. Literature review can also provide a conceptual framework for further research or study planning (Marrelli, 2005). However, despite being effective, cheap and versatile, literature review methodology does have some downfalls, for instance researchers are required to have a high level of resource identification skill, an ability to analyse sources to select relevant information, and writing skills, otherwise it can become time consuming and cost-ineffective. Moreover, this method is limited only to past phenomena, hence it is unable to provide data about current actual behaviours (Marrelli, 2005).

Justification for literature review

The purpose of a literature review is to provide us with existing knowledge and significant information about the industry structure, organisation and policy. It not only presents the view of government and other researchers on industry and what issues they envisage, but also provides insight and understanding of the current situation. In particular, literature review helps address the gap in current knowledge and provides a rationale and justification for the study. It helps me discover contradictions between current policy and how the industry currently operates.

Literature review process

For the current research thesis, an extensive number of secondary sources such as academic journals, studies and research were gathered and reviewed. Documentary analysis was used extensively as a source to collect the secondary data. Relevant information was gathered and analysed from the following sources:

- Government policy and white papers from major government agents such as the Ministry of Industry, Ministry of Commerce, Thailand Textile Institute, and the National Economic and Social Development Board
- Previous academic literature, published academic journals and research papers

- Textile industry statistics, particularly from UNCOMTRADE, Thailand Textile Institute and the Ministry of Industry

In addition to research reviews, we held face-to-face interviews with several industry and policy experts to verify and confirm their understanding of, and identify their perspective on, industry structure and dynamics. Each expert spent around two to two and a half hours discussing their view points. These experts have been involved in developing and formulating industrial policy, measures and projects in the textile and clothing industry, and their views are therefore representative of the government and policymaker perspective. They include:

- Assistant to the Director of the Thailand Textile Institute
- Industry researchers and policy analysts from the National Economic and Social Development Board
- Textile and clothing experts from the Federation of Thai Industries

The results of this stage provided us with the first step in building a picture of the industry structure and distribution channels of the two sectors. It also gave us ideas and hypotheses on types and roles of trade intermediaries as well as on governance between producers and trade intermediaries.

3.2.2 Semi-structured firm interview

Following the examination of industry and company information, face-to-face semi-structured interviews were conducted. Firms in all sectors, i.e. textiles, clothing and trading, were interviewed. This helped us understand the business model of companies in various sectors, build the GVC type from a bottom-up perspective and understand key concerns and issues of business operators or owners.

The semi-structured interview is used to collect qualitative data by asking about and discussing opinions on various subjects, in this case textile and clothing producers. The interviewer develops and uses an 'interview guide', which is a list of questions and topics that should be covered during the conversation. The interview guide provides a clear set of instructions for researchers and can therefore provide reliable, comparable qualitative data to a great extent (Robert Wood Johnson Foundation). Interviews enable researchers to collect the required data and gain knowledge from individuals (Kajornboon, 2005).

The reasons for selecting the semi-structured interview as one of the methods to collect qualitative data were, firstly, that highly personalised data needed to be collected and, secondly, it provided me with opportunities to probe interviewees further. As most researchers already know, it is crucial to set interview questions in such a way that they can extract valid responses from respondents, thus correctly leading researchers to the answers they are looking for.

There are a number of key benefits of using the semi-structured interview method, for example it provides reliable and comparable qualitative data and allows interviewees to express their opinions and views freely in their own terms (Kajornboon, 2005). However, a drawback of semi-structured interviews is that, if interviewers are inexperienced, some prompt questions may not be asked if participants start talking about other topics not included in the interview questions, hence, some crucial data may not be collected (Kajornboon, 2005). Researchers need to have some experience and training in order to conduct effective interviews and collect data and information needed to conclude their research.

Justification for semi-structured firm interview

The main purpose of the semi-structured interview is to have a deeper knowledge of the industry and give a clearer picture of the industry structure, organisation and distribution channel activities. This thesis challenged the current view point of Thailand's government and policymakers of their textile and clothing industry structure. We therefore need to review and develop a more accurate structure of the industry. For the semi-structured interview to give us an accurate picture of the industry we have to select appropriate respondents who have experience and work within the industry rather than those who are looking at it from the 'macro level'. To do that we selected interviewees that cover various parts of the textile and clothing value chain ranging from upstream

(textile) to downstream (clothing) and including distributors. In addition, to understand their business model clearly, we also selected firms that have business model types such as OEM, ODM and OBM. This allowed us to cover all the activities and structure of the industry and how players operate within it. Further, to be able to have valid and reliable information, we selected respondents that have long experience within the industry and are involved in the government agenda. Hence, most of our respondents are managing directors or CEOs of companies. They have tacit knowledge so we are able to get insight from them, which the macro data did not provide.

This method is very important because it is the first step to help us develop a hypothetical value chain by providing qualitative data. This view point will be used to compare and contrast with the current view from government and policymakers. More importantly, this picture will be used to compare with the theoretical framework adopted by GVC research. In addition, the qualitative findings from the interview provide us with a better understanding and segmentation of the industry and help us dissect and disaggregate industry information and also the business model adopted by each company. We need this information to compare and contrast with the findings from the literature review and provide new knowledge and insight into the industry. The semi-structured interview is required because we need highly specific but complex data in a very short period of time and we only have one chance to meet the interviewees. This method provides the freedom to explore views of the industry structure and policies in more detail. In addition, interviewees can speak freely and openly in a private setting about the impact of government policy.

Interview protocol

We used the list of firms from Thailand's Textile Institute to select the firms to be interviewed. We classified the list into four groups, namely: garment firm, textile firm, mixed garment and textile firm, and trading firm. Then we randomly selected firms from the largest 100 companies in each group for the interview.

When we called and asked for the interview, we enquired about having an exclusive interview with the owner or managing director of each company. This is because they have in-depth knowledge and understanding of the industry, company business model, market, their relationship with buyers and government policy. They also have comparable experience, knowledge and understanding of the industry, hence they could provide us with a better and more accurate picture of the industry than government or policymakers. However, if the managing director or owner of the company was not available, we would tend to interview those responsible for marketing and sales. This is because the main objective of the study is to understand the relationship between domestic producers and international buyers.

All the interviews were conducted face-to-face at the company location. This was done so that we could elaborate and explain theoretical concepts that the interviewees were not used to. It also helped us to probe and discuss the business models and issues faced by each firm. Most importantly, by having face-to-face interviews at their office, they could provide us with company and quantitative data that increased the credibility of our study. The interviews normally took around one and a half to two hours per company, because the interviewees had many details to explain and elaborate on.

Seventeen firms that were selected in the firm interview methodology, including two major trading firms, three textile firms, three textile and garment firms, two OEM garment firms, one OEM and OBM garment firm and three OEM garment firms. The names of the firms are listed in the following table.

Table 3.1: Name and type of firms interviewed

	Company Name	Type of Firm	Position of Interviewee	Interview Schedule	Starting time and length of interview
1	Li & Fung	Trading Firm	Vice President: Garment Merchandising Section	23 December 2010	10.00 am (2.00 hr)
2	Mitsui Group	Trading Firm	Assistant General Manager	14 January 2011	10.00 am (2.00 hr)
3	TTL Industries	Textile	Director, Deputy Managing Director	19 November 2010	10.00 am (1.45 hr)
4	T. Shinawatra Thai Silk	Textile	Export Manager	20 November 2010	10.00 am (1.30 hr)
5	Luckytex (Thailand)	Textile	Export Manager	16 December 2010	13.30 pm (1.45 hr)
6	Krungthon Fabrics	Textile & Clothing	Managing Director	17 November 2010	15.00 pm (1.30 hr)
7	Capital Rayon	Textile & Clothing	Managing Director	18 November 2010	9.00 am (2.00 hr)
8	Mitsubishi Company	Textile & Clothing	Senior Manager: Textile & Garment Department	14 January 2011	13.00 pm (2.00 hr)
9	Theparerg	OEM Clothing	Managing Director	18 November 2010	14.30 pm (1.45 hr)
10	Union Garment	OEM Clothing	Advisor (Ex-MD)	12 December 2010	10.00 am (2.00 hr)
11	Thanulux	OEM & OBM Clothing	Senior Export Manager	14 December 2010	15.00 pm (1.30 hr)
12	V.T. Garment	OEM Clothing	Export Manager	15 December 2010	9.00 am (1.45hr)
13	Castle Peak Holdings	OEM Clothing	Deputy MD, Marketing Director	16 December 2010	9.00 am (1.45 hr)
14	Four Star Garment and Textile	OEM Clothing	Managing Director	17 December 2010	14.30 pm (1.15 hr)
15	Central Trading	OBM Clothing	Assistant Vice President: Overseas Business Development	26 November 2010	10.00 am (2.00 hr)
16	S-Class	OBM Clothing	Managing Director	15 January 2010	9.00 am (1.00 hr)
17	KC Garment	OEM Clothing	Managing Director	15 January 2010	18.00 pm (1.00 hr)

Interview guideline

The interviews aimed to provide an understanding of the roles and activities that each organisation performs. Basically the guideline set up for interview questions was divided into four main sections corresponding to my hypothesis and the proposed questions. The design of the interview questions is given in more detail below:

1) What is the business model employed by the firm?

- What type of firm is it?

- Does the firm have its own product brands?

- What is the sale structure in terms of percentage of product exports and imports?

- What are the main export markets of the product(s)?

2) What is the governance style administered by the firm?

- What is the structure of the firm's industry?

- How is/are the export distribution channel(s) constructed?

- What is the relationship between the firm and its distribution channels?

- What is the role of trading in the firm?

3) In what direction does the firm believe Thailand's textile and clothing industry should be steered towards?

- What does the firm think or believe are strategic issues for the firm's industry?

- What is the firm's value positioning in terms of competitiveness enhancement including price, quality, branding, production standard, productivity, cooperation in value chain, delivery time, design, labour and HR, upstream development, and R&D and technology?

4) What is the government's role in helping promote competitiveness and improve performance of the textile and clothing industry?

- What type of government policy does the firm believe will promote competitiveness and improve performance in, for example, import tax, customs procedures, exchange rate, HR, cluster development, R&D, market expansion, business promotion overseas and trading-firm-related policy?

The data gathered from the firm interviews enabled me to understand the roles and activities of each firm, the nature of the firm and its relationships with other organisations in the value chain, as well as its view on government roles and involvement.

3.2.3 Face-to-face firm survey

The survey method is a more systematic method used to gather data or information from individuals and it attempts to elaborate on and understand the basic characteristics or experiences of large and small populations to which these individuals belong (Enanoria).

There are a number of key benefits of the face-to-face survey method of data collection, especially in terms of data quality compared to other types of survey, for instance respondents can ask interviewers/researchers for clarification if they find questions to be confusing or ambiguous. It also allows for complex questions to be asked and provides researchers with a fairly high degree of control over the data collection process and environment (Doyle). Nonetheless, there are a number of disadvantages of this method of data collection, including comparatively high costs related to a number of aspects such as paperwork and logistics, a more time-consuming process and the need for skilled interviewers to get quality data. Furthermore, sometimes answers given out by respondents are less likely to be honest compared to those given in other data collection methods which do not need to be face-to-face. In some cases, especially with unskilled interviewers, interview bias can be introduced by words or actions that unintentionally influence respondents to answer in a particular way (Doyle).

The firm survey was conducted after I had gathered and examined information from the qualitative research stage. The qualitative data gathered from both the literature review and firm interview stages provides me with a better understanding of the nature and characteristics of both business models and governance employed by textile and clothing industry firms. As a result, I was able to extract the gathered data and information and form the firm survey questions more effectively.

Justification for face-to-face firm survey

The survey is very important for this thesis. It was used to collect quantitative information on the perceptions and opinions of a sample of the industry, which we require to understand the industry better. We used survey data to complement existing data from secondary sources. It was used with statistical analysis to test our findings and theoretical framework. First, it was used to verify and confirm information from the firm interviews. We tested the data collected to see whether they fitted the type of value chain found in the interviews. Furthermore, we used the data to test the relationship between performance, GVC variables and business model frameworks. The data gathered provides a better description of the relative characteristics of the general population involved in the study due to the large population numbers. It is often easier to find statistically significant results than when using other data gathering methods.

Pilot study

The final survey questionnaire was developed from the results of a pilot study during my coursework at MBS and firm interviews. The objective of the pilot study was to evaluate global value chain concepts and to examine whether the concepts could be comprehended and interpreted by the respondents. The pilot raised the issue of how to find the words that best approximated theoretical concepts. It helped us identify words that allowed respondents to define the categories that captured the spirit of the GVC concept talked about in the literature.

For the pilot study, we conducted 20 face-to-face surveys in order to determine type of governance, upgrading experience and firm performance. There were several issues that indicated the respondents' difficulty in providing responses to the survey.

First, the practitioners or respondents had difficulty in understanding the theoretical and technical terms used by GVC research. These terms included governance and upgrading.

For governance, we attempted to identify governance type by using three key determinants (see 2.3.2.2), i.e. the complexity of transaction, the codifiability of transaction and the competence of suppliers. However, the respondents could not fully understand the technical term and hence could not answer the question. Further, we even discussed different types of governance in simple terms such as market, modular or captive, but they were unable to understand or define their relationship with international buyers. To be practical we therefore defined terms in the questionnaire that were associated with and represented governance type theoretically. The table below illustrates the terms used:

Table 3.2: Governance term used in the survey

Governance	Term used in the survey	Rationale/Justification
Markets	Bidding or perfect competition	Markets governance is governed by a markets mechanism that buys and sells products with little interaction and the switch cost is low. This implies that in this governance the interaction between buyers and sellers is governed by price. Hence, this corresponds to the perfect competition conditions.
Modular	Turnkey supplier	Suppliers in modular value chains tend to take full responsibility for process technology and often use generic machinery that spreads investments across a wide customer base; this implies a turnkey service to lead firms.
Relational	Long-term relationship	Firms in relational governance have mutual dependence through reputation, social and spatial proximity, family and ethnic ties. Trust and reputation are built up over time or are based on dispersed family and social groups. So this implies that these firms have a long-term relationship with international buyers.

Governance	Term used in the survey	Rationale/Justification
Captive	Long-term relationship and sell more than 80% to three major buyers	Small suppliers tend to be 'captive' by larger, dominant buyers. Such networks are frequently characterised by a high degree of monitoring and control by the lead firm. This means that domestic producers have a long-term relationship with and rely on several large firms for their revenue.
Hierarchy	Subsidiary firm	This governance pattern is characterised by vertical integration, i.e. domestic producers are subsidiaries of lead firms.

For upgrading, we need to describe and elaborate on each type of upgrading to the respondent, otherwise they are unable to understand what type of upgrading they have done. The table below illustrates the detailed description in the questionnaire:

Table 3.3: Description of upgrading in the survey

Upgrading	Description in the survey
Product	Improve product e.g. R&D, new design & marketing, cooperation with suppliers to create new product
Process	Improve process e.g. new machinery, process improvement, logistic improvement or supply chain improvement
Functional	Develop your own brand

Secondly, the lead firms described by local firms is different from the GVC study on apparel industry (Appelbam and Gereffi, 1994; Gereffi, 1997; Gereffi and Memedovic, 2003; Gereffi and Frederick, 2010). The GVC research normally defines that there are three types of lead firm: retailers, branded marketers and branded manufacturers. However, domestic producers cannot differentiate those terms and in the Thai context we have different types of lead firm: retailers, small trading agents, international trading firms and branded-name buying offices. So instead of lead firms being defined by the GVC research, we adopted the terms used by Thai producers.

Thirdly, Thai firms can describe themselves in simple business model types such as OEM, ODM and OBM. However, they are unable to describe their business model according to strategy and business literature (Osterwalder, 2004). In this thesis, we therefore try to capture different business models by using different variables. The table below illustrates the summary of business model components focused on in this thesis and their corresponding variables.

Table 3.4: the summary of business model components and their corresponding variables

Business Model	Variables related in the survey	
Value proposition	Type of manufacturers	
Target customer	Export market	Percentage of export
Distribution channel	Type of lead firms	
Customer relationship	Governance	
Capability/ Core competency	Upgrading	Challenges from upgrading
	Support from lead firms	
Other	Year in operation	Initial investment size
	Revenue size	Employment size

Finally, the Thai firms were reluctant to talk about the financial performance of the company due to tax concerns and were reluctant to provide reliable financial information to outsiders, especially government agencies. They believed the figures to be confidential and were concerned about tax expenses to the government. So instead of asking for the financial figures from the local producers, we collected them from the Ministry of Commerce website, which is the most reliable source in Thailand. However, there is still a drawback since many Thai companies do not record their financial figures correctly due to tax issues. So the numbers should be used only as an indication. The extreme results of revenue growth rate, net profit and net profit growth rate are an indicator of this problem.

Survey protocol

In 2005, there were 4,440 textile and clothing firms registered with the Ministry of Industry of which 2,541 were clothing firms and 1,899 textile firms.

There are many ways to determine the sample size, however the current research opted to use the published table with a formula developed by Yamané (1973, p. 37). This formula has been used in most of the current research in Thailand. A portion of the published table is shown in Table 3.5.

Table 3.5: Taro Yamané – Determination of sample size

Size of Population	Sample Size (n) for Precision (e) of			
(N)	±3%	±4%	±5%	±10%
500	-	-	222	83
1,000	-	385	286	91
2,000	714	476	333	95
3,000	811	517	353	97
4,000	870	541	364	98
5,000	909	556	370	98
6,000	938	566	375	98
7,000	959	574	378	99
8,000	976	580	381	99
9,000	989	584	383	99
10,000	1,000	588	385	99
20,000	1,053	606	392	100
50,000	1,087	617	397	100
100,000	1,099	621	398	100
∞	1,111	625	**400**	100

Note: From *Statistics: An Introductory Analysis*, (p.37), by T. Yamané, 1973, New York: Harper & Row.

Table 3.5 provides the sample size requirements in four columns of precision (e): ±3%, ±4%, ±5% and ±10% according to the particular populations. Due to time limitation, this research determines the amount of population for precision (e) of ±10. From the formula, the sample size of this thesis requires 95 respondents from the textile sector and 97 from the clothing sector, hence a total of 192 respondents.

In selecting the firms for survey, we randomly selected the names from a list provided by the Textile Institute. The researcher then contacted interviewees by phone and described the objectives, target respondents and objectives of the study and also submitted the DBA thesis introduction letters for a survey. With the interviewees' permission we made appointments for face-to-face surveys at their locations. We contacted 420 companies and received permission and surveys back for 200 questionnaires[1], which implies a response rate of 47.61%. We received a good response rate because the results of the survey would be used for the DBA thesis.

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[1] Though we received 200 questionnaires (101 respondents from the clothing sector and 99 from the textile sector) from the survey, during analysis we found that 32 other firms were both textile and clothing firms. We therefore excluded those firms from our analysis, hence the total sample was 168 firms, which can be broken down into 80 textile firms and 88 clothing firms.

Typically, in order to test and confirm this theoretical framework statistically, we would require large sample numbers, probably at precision (e) of ±5[2]. The smaller sample size reflects practical issues regarding the short timeframe that occurred due to a political and major flood crisis in Bangkok and Thailand during our fieldwork. However, most importantly, given the 'untested' nature of the theories, this research can be seen as the first 'exploratory study' to check whether there is reason to believe the typologies have any uniqueness in the experiences they capture. Since we expected the hypothesis to be true, i.e. that each governance has a specific relationship with performance, we just needed a sufficient number of firms to test the hypothesis. However, we did know in advance and expected the strong variation in results, hence the fallout into different distributions. So given the lack of validation of the theory, which is the key theme of this thesis, we have to make a pragmatic judgment about the sample size we could get and the aim was to determine whether there was any reason to believe the various experiences were unique to any given category.

Survey questions

The firm survey included 168 firms, 80 of which were textile firms and 88 clothing firms. The surveys were conducted face-to-face. To answer the research questions, the survey was divided into the following six sections:

- **Section 1: Company overview** – this section attempts to understand the governance system of the interviewed firm. It contains basic questions about the firm such as name, number of employees, type of business, type of sector, type of manufacturer and sale structure (export and import).

- **Section 2**: **Domestic distribution channel** – this section attempts to find out the types of distribution channel used by firms in the textile and clothing sectors.

- **Section 3.1: TEXTILE export distribution channel** – this section attempts to understand the export distribution channel for TEXTILE firms only. Questions included in this section are about the structure of export markets, the type and structure of export sales channels, product top buyers, relationships with buyers, and the roles of and assistance from the involved distribution channels including finance, HD development, product design, manufacturing and technology, marketing, R&D, rules and regulations and others.

- **Section 3.2: Competitiveness of Thailand's TEXTILE sector** – this section attempts to understand the strengths of textile industry firms in competing against their competitors. Questions included are about the firm's main competitors in the global market and its

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[2] At 5% we would require 677 samples, 346 for clothing firms and 330 for textile firms.

abilities compared to those of its selected competitors, as well as what it thinks are the five most important success factors to be able to compete in the world market.

- **Section 4.1: GARMENT export distribution channel** – this section attempts to understand the export distribution channels for GARMENT firms only. Questions included in this section are about the structure of export markets, the type and structure of export sale channels, product top buyers, relationships with buyers, and the roles of and assistance from the involved distribution channels including finance, HD development, product design, manufacturing and technology, marketing, R&D, rules and regulations and others.

- **Section 4.2: Competitiveness of Thailand's GARMENT sector** – this section attempts to understand the strengths of garment industry firms in competing against their competitors. Questions included are about the firm's main competitors in the global market and its abilities compared to those of its selected competitors, as well as what it thinks are the five most important success factors to be able to compete in the world market.

- **Section 5: Business improvement** – this section has been designed to find out each firm's views on business improvement. Questions included are about the key techniques employed to promote business growth, the importance of business improvement and the major challenges to business growth.

- **Section 6: Government support** – this section attempts to find out and understand the firm's views on government support and roles in its business. Questions included are about strategy that should be focused on in order to promote growth and enhance competition for Thailand's textile and garment industry and support from the government believed to help promote business growth.

3.3 Data analysis

This research employed three methods of data collection: literature review, semi-structured interview and face-to-face survey. The three methods have the following objectives:

1) To provide a more comprehensive understanding and background of the structure and value chain of Thailand's textile and clothing industry

2) To examine whether there are any relationships between the sector's performance and variables associated with the global value chain, particularly governance type

3) To examine whether there are any relationships between the sector's performance and variables associated with the business model

The following section explains the steps of the data analysis to obtain the results to meet the aforementioned objectives.

3.3.1 Industrial organisational structure of textile and clothing industry analysis

The 'triangulation' method[3] was employed to come up with the industrial organisational structure of Thailand's textile and clothing industry. Information and data collected from extensive previous literature, industry data, expert and firm interviews were also compared and evaluated to provide a clearer and more comprehensive overview of the industry. The survey analysis then validated and generalised the findings.

The examination of data collected from research, white papers and presentations by industry experts on the structure of Thailand's textile and clothing industry was the first step in understanding the industry experts and policy makers. Additionally, in order to develop a more comprehensive understanding of the industry's structure, the industry was dissected into different parts and examined accordingly, using the three available sets of data source. Each firm's characteristics, input and output numbers, products and markets were then investigated, enabling the industry to be divided into various chains. Firstly, the industry data, which describe the number of firms and employees in each segment, were investigated. From this set of data, information on size, major factor inputs and growth of various components could therefore be revealed. Secondly, input-output data provided by the Thailand Textile Institute was examined so that the flow of products could be further explored and understood, thereby providing a better sense of how firms in the industry can be reclassified into various groups. Lastly, input information such as imports and consumption, and output information such as production and exports, were studied in order to reclassify different value chains in the industry. The first and second sets of data provided the

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[3] Mixed data and methodologies are used in a study with a view to double (or triple) checking results and helping to validate or conclude the claim.

hypothesis structure and dynamics of different value chains. Moreover, interviews with numerous players in the industry were conducted, so that different types of business model, strategy, distribution channel and governance could be adequately identified, thereby validating the analysis' findings and our understanding from in-depth data examination.

After the data analysis procedure was completed, the survey research method was then adopted in an attempt to validate and reconfirm the structure of the industry that was theorised from the literature review and the expert and firm interviews. The data was reclassified into various types of value chain, according to the qualitative findings. After the reclassification we attempted to 'explore' whether there were different firm characteristics between those groups. To examine the difference between those groups, we have to be able to see the difference in means/average between them. Different types of data/variables require different statistical methods to examine the mean differences. The following is the summary of methods used in order to find the mean differences.

Table 3.6: Summary of mean differences method for different data type

	Test between groups	Post hoc/Comparison analysis
Interval/Continuous	ANOVA	Planned contrast or Post hoc: Games-Howell test
Ordinal data	ANOVA: Kruskal-Wallis H test	Mann-Whitney U test
Nominal data	Chi-square (Fisher) test	McNemar's test

For **interval or continuous variables** we adopted to help identify the differences in means. We needed to perform the ANOVA analysis method first and then planned contrast or post hoc for those said by ANOVA to have a significant different.

- The 'ANOVA analysis' method, a technique used to compare the mean values for each variable to see if there are significant univariate differences between means in an SPSS statistical program, was then employed to assess different characteristics and variables among those chains. Any variables that illustrate a p-value that is less than 0.05 were identified as significant. So the ANOVA analysis was used to determine whether there are different characteristics among firms in those new groups. ANOVA is an omnibus test, which means that it tests for an overall experimental effect. Although ANOVA tells us whether the experimental manipulation was successful, it does not provide specific information about which groups were affected. We therefore carried out further analysis to find out which groups differ after conducting an ANOVA.

- There are two ways in which to identify the group difference after conducting an ANOVA analysis: planned comparison (or planned contrast) and post hoc comparison. Planned contrasts are done when you have specific hypotheses that you want to test and the hypotheses must be derived before the data are collected, whereas post hoc tests are

done when there is no specific hypothesis. In post hoc, there are no specific *a priori* predictions about the data you have collected and instead there is interest in exploring the data for any between-group differences between means that exist. So in this situation we adopted a post hoc test in order to explore the data and to identify different characteristics between groups. Though there are many post hoc test methods, we used the Games-Howell method, since this is appropriate when the variances are significantly different and the assumption of homogeneity of variance is violated, i.e. Levene's test is significant at p≤0.05.[4]

For ordinal data, instead of the ANOVA test, we adopted the Kruskal-Wallis H test, which is a non-parametric test appropriate for ordinal data because we only wanted to find the difference. And if the Kruskal-Wallis H test said there was a significant different, we then adopted the Mann-Whitney U test to test which parts of the groups were different.

- The Kruskal-Wallis test is the non-parametric test equivalent to the one-way ANOVA that allows the comparison of more than two independent groups for ordinal data. It is used when we wish to compare three or more sets of scores that come from different groups. The Kruskal-Wallis test is an omnibus test statistic and cannot tell you which specific groups are significantly different from each other; it only tells you that at least two groups are different. Since you may have three, four, five or more groups in your study design, determining which of these groups differ from each other is important. The Kruskal-Wallis test does not assume normality in the data and is much less sensitive to outliers; it can be used when these assumptions have been violated and the use of the one-way ANOVA is inappropriate.

- The Mann-Whitney U test is the non-parametric alternative to the independent t-test. It is used to compare differences between two independent groups when the dependent variable is either ordinal or interval/ratio, but not normally distributed.

For nominal data we adopted Chi-Square to test the difference in proportion between two or more groups. However, Fisher's exact test was used when the sample size was small. And if the Chi-Square test or Fisher's exact test said that there was a significant difference, we then adopted McNemar's test to examine which part of the groups were different.

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[4] Levene's test: tests whether variances are different in different groups. Tests the hypothesis that the variances in the two groups are equal. If Levene's test is significant at p≤0.05, we can gain confidence in the hypothesis that the variances are significantly different and that the assumption of homogeneity of variances has been violated. If, however, Levene's test is non-significant (p>0.05) then we do not have sufficient evidence to reject the null hypothesis that the difference between the variances is zero, i.e. we can assume that the variances are roughly equal and the assumption is tenable.

- The Chi-Square statistic is another non-parametric test used for comparing frequencies (counts) of nominal or ordinal-level data for two samples across two or more subgroups displayed in a cross-tabulation table. The null hypothesis for Chi-Square is that there is no statistically significant difference in the relative frequency of one outcome over another. The theory behind the Chi-Square statistic is that if the difference between the observed and expected frequencies is large, even with assumed sampling error, the null hypothesis is rejected. One would conclude that a statistically significant difference between two or more groups does exist. A limitation of the Chi-Square test is that it is sensitive to either very small or large samples. However, Fisher's exact test will be used when the sample size is small. Fisher's exact test is used in cases where there are cells with an expected frequency (fe) less than 5 and/or with small sample sizes, as Fisher's exact test has no sample size restriction. The method of calculation of Fisher's exact test is different to the Chi-Square statistic and is calculated by determining the probability of getting the observed frequency distribution by establishing and comparing to all other possible distributions where the column and row totals remain the same as the observed distribution. In this case the null hypothesis indicates that all the cells would be close to equal.

- McNemar's test determines the significance of the difference between two independent proportions. The test, introduced by Quinn McNemar in 1947, is used with paired data when the observed variable is dichotomous. It is a non-parametric method used on nominal data and is used to test the difference between paired proportions. It is applied to 2 × 2 contingency tables with a dichotomous trait, with matched pairs of subjects, to determine whether the row and column marginal frequencies are equal, i.e. if the contingency table presents marginal homogeneity. It is often used in before-after studies, in which the same individuals are measured twice – a pretest–posttest. Thus, it may be used to test the effectiveness of a particular treatment.

The results of the ANOVA and post hoc analysis were then compared with the results from the literature review and the expert and firm interviews. Consequently, the industry's organisational structure could be concluded and described. The results of the analysis are elaborated on in chapter 4.

3.3.2 Global value chain analysis

This is the examination of the relationship between variables associated with the global value chain framework and the expected results i.e. upgrading, experience with lead firms and performance. The analysis tests that the variables, particularly types of governance, have influence on industrial upgrading and performance (Humphrey and Schmitz, 2000).

Figure 3.2: Global value chain framework and relationship between various variables
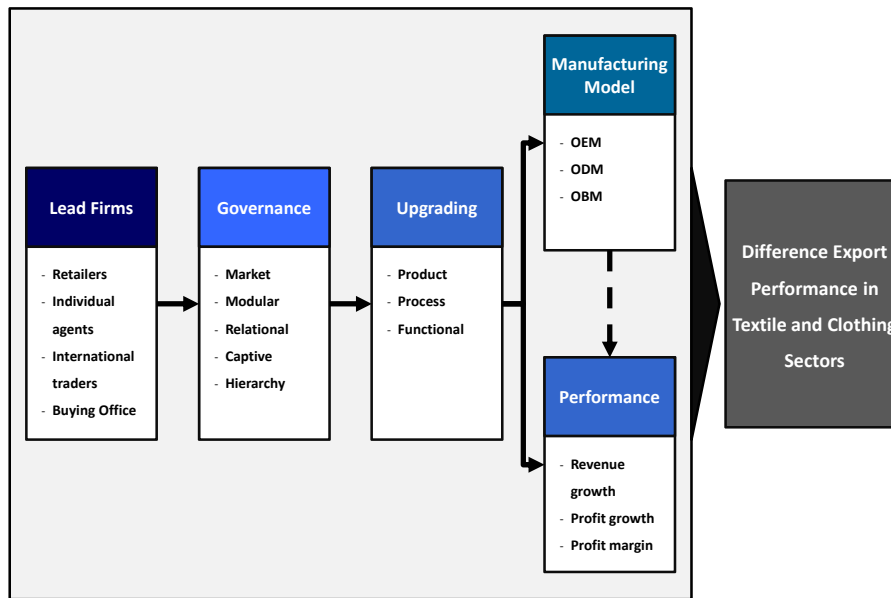
We adopted three types of test to answer our first research question, 'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to patterns in the governance of the networks they are linked to?'. The previously collected variables were classified into three groups. The details of each test are briefly explained below, however particular features will be discussed in more detail in chapter 5.

1) Internal consistency test
    - This test was used to confirm the theorised relationship between governance, trade intermediary and manufacturing types and different kinds of upgrading experience as described in the global value chain theory. The test examined different governance, trade intermediary and manufacturing types and how these various categories affect the distribution of different types of upgrading experience, support and limitation from lead firms as well as challenges occurring as a result of upgrading.

2) Export performance test
    - As export performance is an important practical and policy concern, the 'export performance test' was conducted to see whether the type of governance should have an impact on firms'

performance as the GVC theory asserts. This group includes the test on revenue growth, net profit growth and net profit margin[5].

- We adopted these financial performance measurements for the export performance test because they are the key measurements that company managers and owners ultimately expect and want to capture from upgrading. Since 'upgrading' means "to make better products, to make products more efficiently, or to move into more skilled activities", it implies that firms should have higher growth, higher profit or wider margins In addition, these financial indicators are common among all firms globally and are widely accepted as indicators that reflect firm performance.

- Only 123 export-focused firms were used for the export performance test from a total of 168 firm samples. This is because only the export performance is being focused on herein and revenue or profit of exports from the total amount cannot be segregated. Instead of using the entire survey samples that have been gathered, only firms that focus merely on export markets, i.e. those firms that export at least 50% of their products, are selected to examine the results of the export performance test and growth bias test under the differential dynamic test.

3) Differential dynamic test
    - This test tried to find out whether or not any variable categories were biased toward textiles or clothing. We also wanted to see whether those categories that are supposed, by theory, to have high growth do actually have a high percentage of 'growth firms'.
    - There were two sub-tests under the differential dynamic test: the sector bias check and the growth bias check. The sector bias check looked at whether any categories had a clear sector bias in general and whether that bias, given what is understood of the reviewed literature, was toward the right sector. This confirms whether any typologies are more prone to textiles or clothing, and to high or low export numbers. The second check, growth bias, was an examination of whether or not the distribution of firms in each category had a high percentage of 'growth firms' i.e. those that have positive growth or positive profit. We were trying to see if this category had any unique ability to capture firms which clearly contribute positively to growth, or clearly damage growth.

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[5] Revenue is total sales of textile and/or clothing; net profit is profit after cost of goods sold, operating expenses, financing expenses and taxes; net margin measures profitability of a company and is the ratio of net profit to revenue. Financial figures were obtained from the Department of Business Development, Ministry of Commerce. Revenue growth was calculated by averaging revenue growth in 2007-2008 and 2008-2009, net profit growth was calculated by averaging net profit growth in 2007-2008 and 2008-2009, and average net profit margin was calculated by averaging net profit margins in 2007, 2008 and 2009.

- As in the export performance test, only 123 export-focused firms from a total of 168 samples are used, as this study is only concerned with the performance of export-focused firms in the industry.

In order to determine which variables in each analysis have a strong association with the GVC framework, the variables had to fulfill some pre-determined criteria. Theoretically, for a variable to be significantly different from others, firstly it should be different from the results of other groups and, secondly, from the total average. These criteria should be sufficient to test those variables that do not have expected results. However, the GVC framework had already determined the expected results for the governance group but not for other groups, therefore, for the governance category examination, an additional expectation test was needed to test whether the variables from the governance group were comparable to what we expected. Consequently, the following three criteria were required:

1. **Typology is related to outcome expectation**. This checks whether a category is associated with the right perceptions from a theoretical point of view, meaning does it appear to be positively or negatively associated with the outcomes captured by the survey in the way expected?

2. **Result is comparatively distinct from other typologies**. This checks whether the results have any different patterns from other variables. For this category, whether or not the different sub-categories produce a different distribution of responses is identified. It will only matter that a particular governance category has more than 50% associated with that variable if a different distribution of responses is produced, because all other sub-categories may have the same distribution, indicating that this variable is no different from the others.

3. **Result is comparatively distinct from the sample average**. This checks whether the variables are different from the distribution at aggregate level. For this category, whether each sub-category has a different distribution from the aggregate picture is identified. If a sub-category is no different from the overall distribution, the variable therefore has no distinctive relationship.

An answer Yes/No is then assigned in order to refer to whether or not the underlying data supports the associated hypothesis. The results are compared to each criterion using various statistical and qualitative methods to derive the Yes/No result. The detail judgment criteria in each test is explained as follow:

Typology is related to outcome expectation

The GVC theory only has the hypothesis that the governance category has a relationship with upgrading and performance. Therefore, only one group, the governance category, needs to perform the expectation test. The other categories, i.e. intermediary, upgrading and manufacturing type, do not need to perform this test.

In the 'Typology is related to outcome expectation' category, a percentage of the sample firms is evaluated, i.e. the distribution range or result average, to define the results as low, medium or high. If the results fall into the expected 'distribution range' or 'average', the answer will be 'Yes', otherwise it will be 'No'. Different variable groups have different distribution ranges or result averages as follows:

Table 3.7: Distribution range for testing variables

Variables Group	Evaluation Method	Low	Medium	High
Internal Consistency Test				
- Upgrading	Percentage of the sample firms	<25%	25-75%	>75%
- Support from lead firms	Results average	<0.25	0.25-0.75	>0.75
- Challenge from lead firms	Percentage of the sample firms	<25%	25-75%	>75%
Export Performance Test				
- Revenue growth	Results average	<0%	0-5%	>5%
- Net profit growth	Results average	<0%	0-5%	>5%
- Net profit margin	Results average	<0%	0-5%	>5%
Differential Dynamic Test				
- Percentage of textile firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of clothing firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of export firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of well-performing firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample

There are three thresholds because extreme cases are included. Moreover, the thresholds are quite high because the sample size is small and as statistical tests will often not show anything with small sample sizes, at least this way we can quickly see if the distribution of the small sample exhibits any strong tendencies. We are basically interpreting distributions that fall into the 'middle' as not being subject to the expected theoretical associations.

The following table illustrates the difference we expect to see in upgrading pattern and type of upgrading experience with each type of governance. From the framework discussed we can interpret and expect the following possible outcomes that might occur from the test illustrated in the table below.

Table 3.8: Governance test results expectation

	Variables	Hierarchy*	Captive	Relational	Modular	Market
Internal Consistency	Upgrading					
	- Product	- High	- High	- Medium	- Medium/High	- Low
	- Process	- High	- High	- Medium	- Medium/High	- Low
	- Functional	- Low	- Low	- Medium/High	- Low/Medium	- Low/Medium
	Support from lead firms	- Medium	- Medium	- Medium	- Low	- Low
	Challenges in upgrading	- Medium/High	- Medium/High	- Low/Medium	- Low/Medium	- Medium/High
Performance	Revenue growth	- Medium	- Medium	- High	- High	- Low
	Net profit growth	- Medium	- Medium	- High	- High	- Low
	Net profit margin	- Medium	- Medium	- High	- High	- Low
Differential Dynamic	Structure of sector	- Mixed textile & clothing	- Mixed textile & clothing	- Textile	- Textile	- Clothing
		- More export	- More export	- More export	- More export	- More domestic
		- Mid % of better performing firms	- Mid % of better performing firms	- High % of better performing firms	- High % of better performing firms	- Low % of better performing firms

*adopted hypothesis from captive governance

Result is comparatively distinct from other typologies

To test whether the variables between each groups are different, we again adopted various tests between the mean method and post hoc test to determine mean difference and to identify which pair causes such a difference. We provide a short summary as follows, but the detail of each statistical tool is explained and elaborated on in section 3.3.1.

- **Interval or continuous variables:** adopted the ANOVA analysis to identify the differences in means and performed planned contrast or post hoc for those said by ANOVA to have a significant difference.

- **Ordinal variables:** adopted the Kruskal-Wallis test to identify the differences in means and performed the Mann-Whitney U test for those said by the Kruskal-Wallis test to have a significant difference.

- **Nominal variables:** adopted the Chi-Square test to identify the differences in means and performed McNemar's test for those said by the Chi-Square test to have a significant difference.

Result is comparatively distinct from the sample average

In the 'Result is comparatively distinct from sample average' category, we again adopted various types of statistic that corresponded with type of variable or data.

Table 3.9: Summary of test between group and total sample for different data type

	Test between group and total sample
Interval/Continuous	Welch's t-test
Ordinal data	Mann-Whitney U test
Nominal data	McNemar's test

- **For interval or continuous variables** we adopted 'Welch's t-test'[6], which is used to determine the mean difference between two groups with unequal sample sizes to identify the difference between the results of the sub-category and the aggregate result.
- **For ordinal data** we adopted the Mann-Whitney U test, as explained in 3.3.1
- **For nominal data** we adopted McNemar's test, as explained in 3.3.1

For all types of analysis, the difference within 95% confidence is employed. If it is different, then the answer will be 'Yes', otherwise it will be 'No'. However, if the P-value is less than the significant level of 10%, a note will be written next to the result.

Result table and test conclusion

For the **governance category,** in order to be able to conclude that each variable in each sub-category supports the global value chain framework, each variable needs to pass the three criteria. If the 'Typology is related to outcome expectation' criterion is identified as 'No', the conclusion will be 'No', thereby there is no need to look further at the other two categories. The result will, however, be 'Maybe' if the first criterion is 'Yes' and one of the other two criteria is 'No'. The table below illustrates all possible results.

Table 3.10 Possible results from analysing three criteria

	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Supports theoretical framework
1	No	No	No	No
2	No	Yes	No	No
3	No	No	Yes	No
4	No	Yes	Yes	No*
5	Yes	Yes	Yes	Yes
6	Yes	No	Yes	Maybe
7	Yes	Yes	No	Maybe
8	Yes	No	No	No

*but this result means it supports other hypotheses

In order to test other categories, the GVC theoretical framework does not propose or establish any expected outcomes in trade intermediary, upgrading or manufacturing categories, thus, the first criteria is not used as typologies are related to outcome expectation, and only the other two criteria are tested. In each variable with only two criteria, 1) Result is comparatively distinct from other typologies and 2) Result is comparatively distinct from the sample average are tested in order to examine whether or not they are important and significantly different from others, using a similar

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[6] Welch t-test allows different population standard deviations. Instead of a pooled estimate of one standard deviation, we use each sample to estimate its own population standard deviation. This leads to a different standard error on the difference in averages, and a different degree of freedom.

method to that used in the governance category. Additionally, the ANOVA analysis is employed to test between various typologies, while the statistics formula is used to determine the mean difference between variables and sample average.

In order to conclude that each variable in the export performance test and the differential dynamic test is important and significantly different from others, each variable needs to pass the two criteria, i.e. 'Yes' in the two boxes. The table below illustrates all possible results.

Table 3.11 Possible results from analysing two criteria

	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Variable is significant & different
1	No	No	No
2	Yes	No	Maybe
3	No	Yes	Maybe
4	Yes	Yes	Yes

The results of this analysis are given in parts 5.1.2-5.1.5.

3.3.3 Business model analysis

The business model analysis was employed to examine various attributes and characteristics between the well- and poorly performing firms in each value chain of Thailand's textile and clothing industry. The objective was to identify whether there are any distinctive characteristics between the well- and poorly performing firms. The business model framework was used to identify such distinctive characteristics, and consists of components identified by Osterwalder and Pigneur (see table 3.12).

Table 3.12: Nine business model components

Business model ontology	Business model building block	Description
Product	Value proposition	Gives an overall view of a company's bundle of products and services.
Customer interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution channel	Describes the various means by which the company can get in touch with its customers.
	Customer relationship	Explains the kinds of link a company establishes between itself and its different customer segments.
Infrastructure management	Value configuration	Describes the arrangement of activities and resources.
	Capability/ Core competency	Outlines the competencies necessary to execute the company's business model.
	Partnership	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialise value.
Financial aspects	Cost structure	Sums up the monetary consequences of the means employed in the business model.
	Revenue model	Describes the way in which a company makes money through a variety of revenue flows.

The following business model components are incorporated in this examination:

- Value proposition   - Customer relationship

- Target customer   - Core competency

- Distribution channel

All components of the framework could not be identified in this study, due to the difficulties in identifying and collecting information on the 'infrastructure management' and 'financial aspects' components of the business model. However, the survey results corresponding with other parts of the business model can be used as a proxy to examine the framework.

The business model test was employed to identify a set of variables that uniquely contribute to well- and poorly performing firms in each value chain, which can be divided into the following four performance groups:

1. High revenue growth group (average 2008-2009 growth is higher than 10% p.a.)
2. Normal revenue growth (average 2008-2009 growth between 0-10% p.a.)
3. Moderate revenue decline (average 2008-2009 growth between -10 to 0% p.a.)
4. High revenue decline (average 2008-2009 growth below -10% p.a.)

Each of the four performance groups in each type of value chain was then examined to see whether there were significant differences in contribution of an individual variable associated with the business model. Though the performance of firms was re-classified into four groups, only two were compared to test the differences, which were the well- and poorly performing groups. This is done because when we broke down each value chain into four small groups, the sample size in each group was too small to perform any analysis. So, in order to see the trends and patterns, rather than using statistical analysis, we examined the differences between two groups. The well-performing group consisted of firms that had positive average revenue growth between 2008 to 2009, while those firms with poor performance had negative average revenue growth in the same period. The variable is significant if the difference between the percentages of these two groups is greater than 20%. A detailed analysis is illustrated in appendix C-F.

An analysis of the business model will be presented in section 5.2.

3.4 Chapter conclusion

The chapter explains the research methods used to analyse and examine the proposed research questions. Research methods are carried out to examine the following objectives:

1) To be able to provide a more comprehensive understanding and background of the structure and value chain of Thailand's textile and clothing industry
2) To examine whether there are any relationships between the sector's performance and variables associated with the global value chain, particularly governance type
3) To examine whether there are any relationships between the sector's performance and variables associated with the business model

Each question requires a mix of qualitative and quantitative research methods to derive the appropriate conclusion. The qualitative method employed herein consists of literature review, expert interview and firm interview, while the quantitative method consists of a firm survey to collect related data. After data has been collected, the data analysis is then conducted using triangulation and statistical methods to derive findings. The findings are presented in chapters 4 and 5.

Chapter 4 will present the new structure of Thailand's textile and clothing industry structure and organisation, while chapter 5 will do so on statistical test to determine relationships for performance with GVC variables and business model variables.

Chapter 4: Research findings

This chapter aims to assess the single value chain presentation of the textile and clothing industry as it is currently viewed by government agents, policy makers and researchers. It tries to argue that there is no such homogeneous or uniform chain within the industry. Instead, the sector is far more complex than we first thought. By looking at the industry as one single chain as we do currently, we are not able to dissect issues and root causes that are applicable to each chain in the industry; hence government and policy makers cannot find appropriate solutions or recommendations to upgrade the chains and industry as a whole.

To be able to identify and dissect issues within the industry, we will assess and examine the industry in detail to discover and distinguish the characteristics of each chain in the industry. We will then try to identify the types of governance and business models of firms in each value chain.

The first section of this chapter will review the current image of the industry that we have gathered from various research outputs, government white papers, policy makers and expert interviews. We will then look at the different perspectives, by collecting information from in-depth data reviews and firm interviews, to argue and examine the limitation of the current image and propose a new picture of the industry that consists of various value chains. The new picture will then be tested against the survey results. By the end of this chapter, we will have a better view and understanding of the industry, the relationships of firms with their distributors in each value chain, and the business models they opt for in order to compete.

4.1 Industrial organisational structure of the textile and clothing industry

This section will first illustrate and explain the basic textile and clothing value chain currently viewed by the government and policy makers. It will then argue that instead of having a simple industry structure, the industrial organisational structure is far more complex and needs in-depth analysis and creative interpretation to understand the industry and come up with appropriate policy recommendations. The detailed industrial organisation information is acquired and subsequently interpreted from industry data and firm interviews.

4.1.1 The simple model

The diagram below depicts the structure of Thailand's textile and clothing industry that can be pulled together from research, white papers and presentations from industry experts. They view that the industry is organised around three main networks, and their subcomponents: 1) raw material networks, including natural fibres such as cotton and wool; 2) component networks, such as the yarns and fabrics manufactured by textile companies; and 3) production networks made up of garment factories. This view is very simple and follows typical value chain or manufacturing

production lines: the product or output of each component flows to the next production line from fibre to spinning, from yarns to fabric, and from fabric to clothing. The diagram also illustrates import volumes, export volumes and export values in million US$. Inside each box, the number represents domestic production in million tonnes and each icon in the box represents the number of factories, number of employees in thousands, size of firms and production models e.g. labour and capital intensive. The line between each component box represents domestic consumption of output products. The following content will describe the characteristics of components of the textile and clothing chain.

Figure 4.1: Thailand's preliminary textile and clothing industry structure
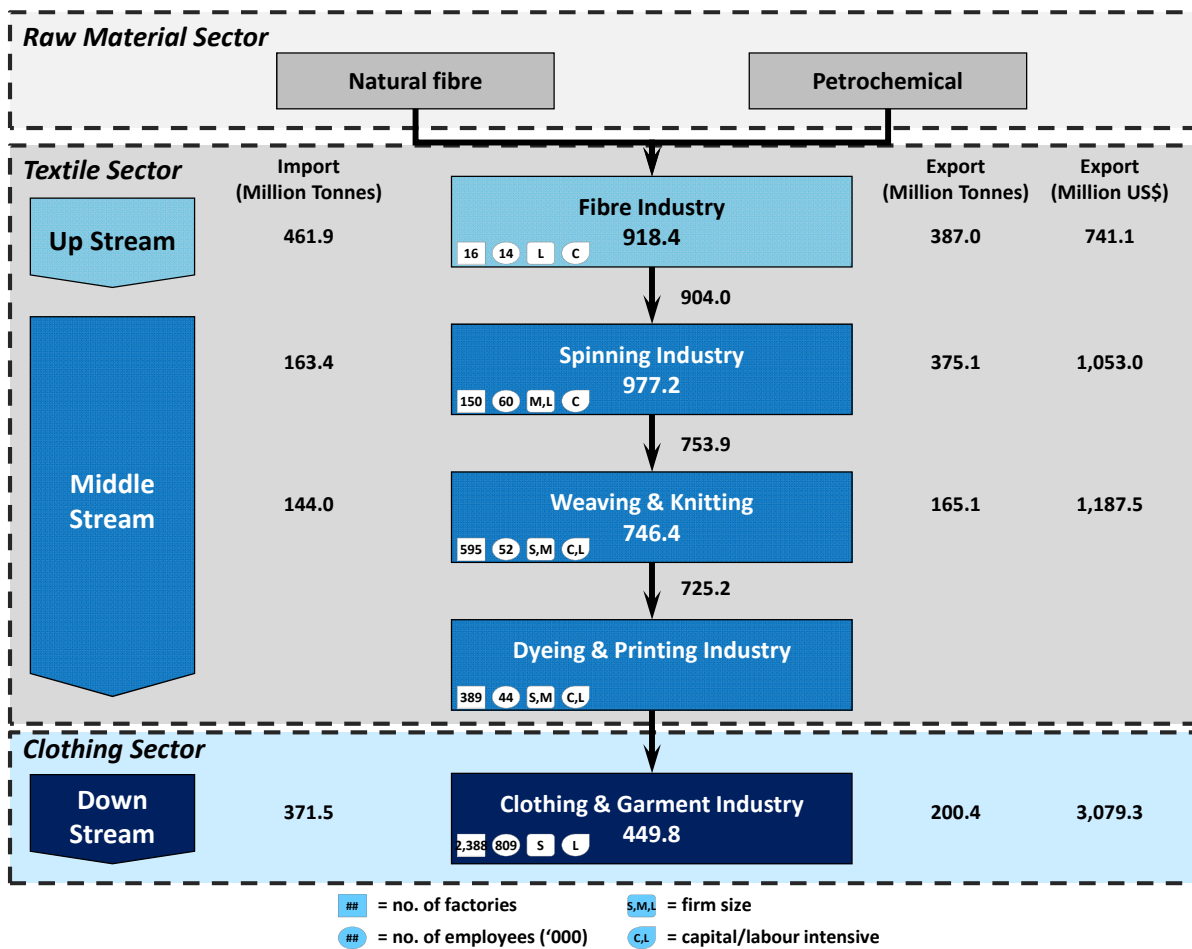
Source: Adapted from Department of Industrial Works, Ministry of Industry and from author interview

Raw material sector

The raw material network consists of natural fibres and petrochemicals. Most natural fibres in Thailand are derived from cotton, while petrochemicals are the major source of synthetic fibres. Thailand is not able to grow cotton and produce petrochemicals to support its domestic production, it therefore imports these two important raw materials from various countries.

Currently, Thailand has only 15 square kilometres in which to plant cotton, which is a major reduction from 100 square kilometres in 2005. Cotton production also decreased from 17,700 tonnes in 2005 to 3,000 tonnes in 2010. Thailand imports most of its cotton and linen from the USA and Australia. This lack of raw cotton material means that Thailand has a comparative disadvantage to other countries that are able to produce sufficient cotton, such as China, India, Pakistan, Brazil and Turkey.

In addition to the fact that Thailand has a comparative disadvantage in cotton production, it also needs to import chemical compounds to support its production. Thai synthetic fibre producers import various petrochemicals, including purified terephthalic acid, ethylene glycol, acrylonitrile, caprolactam, wood cellulose and dissolving pulp. Thailand can only produce purified terephthalic acid and caprolactam. In 2010, Thailand imported US$ 720 million worth of raw materials to produce synthetic fibres.

Textile sector

The textile sector comprises four components, which include the synthetic fibre industry, spinning industry, weaving and knitting industry, and dyeing, printing and finishing industry. Production of these components is mostly for domestic use, whereas clothing sector produces excess supplies for Thailand, which are then exported to other countries. Details are provided below:

Fibre industry

Though the diagram, which is the government's view, illustrates that there is one type of fibre in the value chain, Thailand actually produces two types of fibre, namely cotton and synthetic fibre.

Thailand's cotton production is not able to meet domestic demand. In 2010, it consumed 390,200 tonnes of cotton fibre while it could only produce 3,000 tonnes domestically, and hence 99.2% of consumption had to be met through imports. The import value was US$ 780 million in 2010; this makes Thailand a major global importer of cotton fibre. The USA, Australia, Brazil and India are Thailand's main cotton suppliers.

Synthetic or man-made fibre is manufactured to replace its natural counterpart. It is made from petrochemical products such as polyester, nylon, acrylic, etc. and semi-synthetic fibres. Its superior properties include flexibility, durability and ease of modification to suit various activities and meet consumer demand. Currently, Thailand can only produce four types of synthetic fibre, namely polyester, nylon, acrylic and rayon. In 2010, polyester was the main product, accounting for 67% of total production followed by rayon at 13% and acrylic and nylon at 9-10% (Thailand Textile Institute).

There are only 16 synthetic fibre factories in Thailand, which only produce polyester, nylon, acrylic and rayon. Most synthetic fibre producers are large manufacturers with foreign partnerships with entrepreneurs in countries such as Japan, Taiwan, Hong Kong and India (Lotharukpong). In the beginning, these international partners used Thailand as a raw material production base to support the downstream factories in their countries. However, as they moved downstream production to other cheaper labour-intensive countries, they adopted a 'triangular manufacturing' approach and exported Thailand's products to third countries that needed the raw materials. The machinery and equipment presently used are rather advanced and procured from abroad, while technical assistance is obtained from the joint venture partners and machinery suppliers. Nonetheless, there is still little research and development to acquire fibres with special characteristics. Thus, most Thai fibres are of medium quality with plain properties and a lack of diversity. The factories are largely concentrated in Bangkok and its vicinity.

The man-made fibre industry is considerably capital and technology intensive with high energy consumption and utilises much less labour than other sub-sector industries, with only about 14,300 employees. There are only 2-3 companies that are fully owned by Thais (Lotharukpong). In 2010, Thailand exported 386.99 million tonnes of synthetic fibre, which is the equivalent of US$ 740.9 million.

Spinning industry

The spinning industry was started in Thailand in 1950 by the Ministry of Defence with the intention of substituting imported products from abroad. It mainly used imported cotton and locally produced synthetic fibre to produce cotton and man-made yarn. Synthetic fibre used to be the main product but nowadays, due to a much greater demand for yarn that possesses a variety of different properties, a mixture of the two yarns is common.

There are around 150 spinning mills with around 60,000 employees in Thailand. They are mostly OEM (Original Equipment Manufacturer)[1] and compete on quality rather than price. About 100 factories (65% of factories in the spinning industry) are classified as medium to large factories. The industry requires medium to high levels of investment with medium levels of technology (Lotharukpong). Along with the fact that more than half of factories hire fewer than 500 workers while the average number of workers used per factory is sliding, most of them are hence considered relatively capital intensive.

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[1] An OEM is a company that supplies equipment to other companies to resell or incorporate into another product using the reseller's brand name.

Similar to fibre, Thailand can only produce enough cotton yarn for domestic consumption, but is also able to produce a large amount of synthetic yarn for both domestic and international markets. In 2010, Thailand produced 977.2 million tonnes of yarn, of which 64.1% or 626.1 million tonnes were synthetic. Thailand imports 145.0 million tonnes of synthetic yarn and 18.4 million tonnes of cotton yarn to support local consumption. It also exports 314.31 million tonnes of synthetic yarn and 60.8 million tonnes of cotton yarn. This is the equivalent of a total export revenue of US$ 1,053 million for the country.

Weaving and knitting industry

The industry uses raw material from the spinning industry – cotton and synthetic yarn – to produce woven or knitted cotton, man-made and mixed fabrics. The products of this industry can be classified by production techniques into two types: woven fabric and knitted fabric. Each type of fabric typically uses around 40% of cotton yarn and 60% of synthetic yarn[2]. In the past, the industry relied on a large workforce but nowadays there has been an increase in the utilisation of machinery that supports production, which increases efficiency. The manufacturers import their machinery from Taiwan, Japan and China (Lotharukpong).

The weaving and knitting industry is the second largest sector in Thailand's textile and clothing industry. The sector employs nearly 114,000 workers, but requires only small investment (less than US$ 1 million). There are around 1,290 firms in the industry, 595 of which are weaving mills and the other 695 knitting mills, which account for about 29% of the total number of firms. Most of the firms are classified as small- to medium-sized firms with under 100 employees and investment of less than 50 million Baht. In the most recent transition of the industry, the number of factories and workers employed were both found to have dropped. As the latter figure reduces at a more rapid pace, it prompts a slight decrease in the average number of employees per factory. It is believed that such a change was made to reduce industry costs.

In 2010, Thailand produced 746.4 million tonnes of fabric. Woven synthetic fabric accounted for 38.2% of total production, while knitted fabric[3] and woven cotton fabric accounted for 35.2% and 26.5%, respectively. Thailand exported 165.1 million tonnes of fabric in 2010, which is the equivalent of US$ 1,187.5 million.

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[2] Expert interview

[3] Thailand Textile Institute cannot split knitted fabric into cotton and synthetic fabric.

Dyeing, printing and finishing

The dyeing, printing and finishing industry is the last industrial step in fabric production prior to distribution to consumers or the garment industries. The industry can help increase the value of the raw material of textile products by 2-3 times. There are three key distinct activities in this sector.

First, dyeing is the process of adding colour to textile products like fibres, yarns and fabrics. It is normally done in a special solution containing dyes and particular chemical material. Different classes of dye are used for different types of fibre and at different stages of the textile production process, from loose fibres through yarn and cloth to complete garments. Acrylic fibres are dyed with basic dyes, nylon and protein fibres such as wool and silk are dyed with acid dyes, and polyester yarn is dyed with disperse dyes. Cotton is dyed with a range of dye types, including vat dyes and modern synthetic reactive and direct dyes.

Second, textile printing is the process of applying colour to fabric in definite patterns or designs. To print fabrics properly, the colour is bonded with the fibre so as to resist washing and friction. Textile printing is related to dyeing but, whereas in proper dyeing the whole fabric is uniformly covered with one colour, in printing, one or more colours are applied to it only in certain parts and in sharply defined patterns.

Last, finishing refers to any process performed on yarn or fabric after weaving or knitting to improve the look, performance or feel of the finished textile or clothing (Thailand Textile Institute).

The industry is highly complicated and needs large capital investment and advanced technology. The majority of the industry is in a form of joint venture with foreign companies (Thailand Textile Institute) and employs around 43,860 people. It currently has just 389 factories in Thailand, more than 80% of which are small sized. Most of the factories are located within the vicinity of Bangkok. In the most recent surveys conducted, both the number of factories and the number of workers employed were on downward trends. As the number of workers employed reduces at a more rapid pace, it prompts a slight decrease in the average number of employees per factory. Such a change is believed to have been caused by cost reductions in the industry.

Clothing sector

The clothing or garment industry is a downstream industry. This segment of the chain represents the largest portion of factories in the textile and clothing industry, with 2,388 firms in the industry or equivalent to about 56% of the total number of factories within the industry. Since such production factories do not require large investment, there are a huge number of small, labour-intensive factories in Thailand. Around 60% of the clothing production industry has been established with less than 5 million Baht (US$ 140,000) investment and around 30% with 5-50 million Baht (US$ 140,000-1.4 million) investment. The industry is characterised as employing 808,690 workers, representing 78% of total employment in the textile and clothing industry. Though the industry utilises a large number of very old machines, it still remains the largest exporter and employs the largest workforce.

The three main networks, their five subcomponents and the description above make up the conventional portrait of Thailand's textile and clothing industry that all the research and white papers have identified and use to develop government policy; even the most recent master plan adopts this picture as the structure of the industry. Different analysis frameworks such as SWOT analysis, PEST analysis, value chain analysis or Diamond model are then used to identify issues and develop policy. Taking the single value chain picture as its viewpoint, the government believes that, to compete in the global market, it only needs to improve the linkage between the textile and clothing sectors, enhance collaboration, encourage development of their own brands and expand international markets.

However, as we have found in chapter 2, the dynamics and performance of the textile and clothing sectors are not alike. The growth rate of textile exports has outperformed clothing exports. Furthermore, global value chain advocates argue that there can be more than one chain in an industry. This raises a question about whether the current picture of Thailand's textile and clothing industry represents the current dynamics and structure of the industry. Furthermore, if the existing picture does not reflect the true dynamics of the industry, this implies that government policies, which are formulated on the basis of misperception, would not be suitable for the industry, making the issue far more complex than we thought.

The next section attempts to prove that the industry is not a single chain as currently perceived. It will assess the structure in detail via an examination of industry data from different perspectives along with interviews with various players in the chain, so that we can identify the different dynamics within the industry and come up with a picture that would create a better understanding of industry function.

4.1.2 The complex model

By viewing the industry as one single value chain, the government is not able to dissect and identify root-cause issues in Thailand's textile and clothing industry. This leads to inappropriate policy for the country. This section will argue that the simple model viewed by government is not the way business operates and is inappropriate in this type of dynamic environment. A new structure will be proposed and explained at the end of the section. We are trying to develop a better understanding of the structure of Thailand's textile and clothing industry; dissecting the industry into different parts will help us better identify key issues for the industry and help policy makers and government to formulate better policies that resolve relevant issues.

To do this, we looked at the available industry data and statistics from a bottom-up perspective and tried to look at the industry in various ways. We looked at firms' characteristics, input and output numbers, and their products and markets in order to divide the industry into various chains. We also interviewed various players in the industry to identify different types of business model, strategy, distribution channel and governance to validate our understanding from an in-depth data examination. As a result of this process we argue that there is more than one value chain within the textile and clothing sector. The following section will explain the classification process, discuss various issues related to the typical industry structure and develop an updated structure for Thailand's textile and clothing sector. The end of the section will summarise the key characteristics of each chain in the new model.

We used at least three data sources to dissect and examine the industry in detail. First, we looked at industry data, as shown in tables 4.1-4.3 below, which describe the number of firms and employees in each segment. The data reveal size, major factor inputs and growth of various components. In particular, they illustrate diverse growth in each component of the industry. More importantly, the data separates weaving and knitting mills into two sectors, which gives us the hypothesis that there might be more than one chain in the textile sector.

Table 4.1: Number of factories

Industry	Number of Factories 1995	Number of Factories 2005	Number of Factories 2010	% of Total	% Change in No. of Factories 1995 vs 2010
Man-made Fibre Mills	16	17	16	0.38%	0.0%
Spinning Mills	149	153	150	3.54%	0.7%
Weaving Mills	741	636	595	14.06%	-19.7%
Knitting Mills	743	684	695	16.42%	-6.5%
Dyeing & Printing Mills	441	409	389	9.19%	-11.8%
Clothing Producers	3,006	2,541	2,388	56.41%	-20.6%
Total	5,096	4,440	4,233	100.00%	-16.9%

Source: Thai Textile Statistics 2005, 2010, Industrial Works Department

Table 4.2: Number of employees

Industry	Number of Employees 1995	Number of Employees 2005	Number of Employees 2010	% of Total	% Change in No. of Employees 1995 vs 2010
Man-made Fibre Mills	16,500	14,430	14,300	1.37%	-13.3%
Spinning Mills	65,050	61,100	60,040	5.77%	-7.7%
Weaving Mills	65,590	55,250	51,890	4.99%	-20.9%
Knitting Mills	67,840	60,790	61,790	5.94%	-8.9%
Dyeing & Printing Mills	51,870	46,770	43,860	4.21%	-15.4%
Clothing Producers	877,040	825,650	808,690	77.72%	-7.8%
Total	**1,143,890**	**1,063,990**	**1,040,570**	**100.00%**	**-9.0%**

Source: Thai Textile Statistics 2005, 2010, Industrial Works Department

Table 4.3: Number of employees per factory

Industry	Number of Employees Per Factory 1995	Number of Employees Per Factory 2005	Number of Employees Per Factory 2010	% Change in No. of Employees 1995 vs 2010
Man-made Fibre Mills	1,031.3	848.8	893.8	-13.3%
Spinning Mills	436.6	399.3	400.3	-8.3%
Weaving Mills	88.5	86.9	87.2	-1.5%
Knitting Mills	91.3	88.9	88.9	-2.6%
Dyeing & Printing Mills	117.6	114.4	112.8	-4.1%
Clothing Producers	291.8	324.9	338.6	16.1%
Total	208.8	257.6	245.8	17.7%

Source: Thai Textile Statistics 2005, 2010, Industrial Works Department

Second, we attempted to gather input-output data, as shown in table 4.4, to look at the flow of products. The data allow us to dissect the industry further; it presents information in various dimensions for different sectors, separating fibres, yarn and fabric into cotton and synthetic, and fabric and clothing into knitted and woven. This gives us a better sense of reclassifying firms in the industry into various groups. We then examined input information like imports and consumption along with output information such as production and exports to reclassify different value chains in the industry. The first and second data sets gave us a hypothesis structure and the dynamics of different value chains.

Table 4.4: Input-output table for textile and clothing industry

2010	Production Mill Tonnes	Import Mill Tonnes	Import Mill US$	Export Mill Tonnes	Export Mill US$	Consumption Mill Tonnes
Cotton Fibre	0.80	384.65	731.50	0.04	0.20	390.20
Synthetic Fibre	917.60	77.21	169.00	386.99	740.90	513.80
Cotton Yarn	351.10	18.41	82.50	60.80	212.50	308.70
Synthetic Yarn	626.10	144.97	506.00	314.31	840.50	445.20
Woven Cotton Fabric	197.90	57.29	297.60	66.16	496.10	189.00
Woven Synthetic Fabric	285.40	80.18	366.10	93.02	653.60	272.50
Knitted Fabric	263.10	6.54	50.60	5.93	37.80	263.70
Woven Clothing	300.00	13.47	172.10	54.20	1,161.30	259.30
Knitted Clothing	199.80	23.68	112.10	146.24	1,918.00	77.20
Other			1,171.10		1,487.60	
Total			3,658.60		7,548.50	

Source: Thai Textile Statistics, Thailand Textile Institute

Finally, we employed this new value chain and hypothesis to discuss with and interview various firms in the industry to validate the initial findings. In addition, we were able to verify types of distribution channel, relationships with distributors, upgrading perception and business models for various firms in the industry to finalise the new industry structure.

The results of the analysis and assessment are as follows.

There are two textile value chains: domestic focus and export focus

In the textile industry, Thailand has two types of material to produce textile products[4]: cotton and synthetic. The nation cannot produce raw materials, i.e. cotton and petrochemical compound, and needs to import most of the material. This leads us to assume that most of the textile products – fibres, yarn and fabric – should be produced and consumed solely in Thailand. If this were true, there should be a single value chain for Thailand's textile and hence clothing industry, and government policy to connect the linkage and create a cluster between the textile and clothing sectors should make sense.

However, cotton is used mainly in Thailand while synthetic textile products are for both domestic use and export. While Thailand consumed 699.0 million tonnes of cotton textile products in 2010, the nation could only produce 351.8 million tonnes in the same year. This implies that Thailand consumes more cotton than it can produce, thus it needs to protect its internal clothing production from imports, while having little left to export. It imports at least 403.0 million tonnes of cotton fibre and yarn but only exports 61 million tonnes of cotton yarn, which is the equivalent of US$ 212.5 million or 2.8% of the industry's exports. This denotes that cotton textiles are in the domestic textile chain.

Meanwhile, synthetic textile products, though they require imported raw material, are produced for both domestic use and export. Thailand produced 1,544 million tonnes of synthetic textile products in 2010 and consumed only 959 million tonnes for domestic production. This means that there were enough synthetic products left to export; in 2010 Thailand exported 701 million tonnes or 45% of the products, which is the equivalent of US$ 1,582 million or 20.95% of total industry exports. This is quite a large export amount and hence one part of synthetic textiles is in the domestic textile chain but the other part is in the export textile chain.

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[4] Includes fibre and yarn

This suggests that synthetic textiles are a key driver for export, both in volume and value. This implies that the abilities of firms producing synthetic fibres, the spinning sector and the relationship between them are very important sources of export performance in the textile sector.

In addition to synthetic and cotton textile products, we can also classify textile fabric into two types, depending on the techniques to produce the fabric. These are woven and knitted fibre. Though we can also classify woven fabric into the cotton and synthetic class, Thailand does not have any data set that separates knitted fabric into these two groups. However, from expert interviews, we know that around 40% of cotton yarn and 60% of synthetic yarn[5] are used to produce knitted fabric.

In this component, knitted fabric is mainly produced for domestic use while woven fabric is produced for both domestic and export markets. Thailand produces 263 million tonnes and imports only 7 million tonnes of knitted fabric. It consumes 97% of total local production and imports and can only export 6 million tonnes, which is the equivalent of US$ 37.8 million or only 0.5% of total industry exports. This strongly indicates that the knitted fabric sector is in the domestic textile value chain. In contrast, Thailand produces 483 million tonnes and imports 137 million tonnes of woven fabric. It consumes around 78% of total local production and imports, and exports 159 million tonnes, which is the equivalent of US$ 1,149.7 million or only 15.2% of total industry exports. Again, this illustrates that there are two value chains in this component: the domestic textile value chain, which comprises knitted fabric producers and woven fabric producers, and the export textile value chain, which consists mainly of woven fabric producers.

This again illustrates that, contrary to the current view, there are really two relatively independent textile chains. The first textile chain focuses on exports, which mainly encompass synthetic textile and woven products, and another domestic textile chain, which consists of natural and knitted fabrics. This implies that synthetic and woven textiles constitute the main driver of export growth for the textile segment.

By reclassifying the textile sector into two chains, we are able to get a better understanding of each chain and of the industry and realise that these chains face different issues and dynamics. The domestic textile chain, which consists of cotton and knitted textiles, is facing a steady decline in domestic demand. The domestic consumption of cotton textiles has decreased by around 2.4% p.a. since 2005, while that of knitted fabric has declined by -0.2%. The export volume of cotton textiles has grown by 1.6% while knitted fabric has declined by 10.5%. At the opposite end, the export textile chain, which consists of synthetic textiles and woven fabric, is able to perform better than the domestic chain. Domestic consumption of synthetic textiles has still increased by 1.2% p.a. with export growth of 2.1% p.a. At the same time, woven fabric local consumption has grown by around

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[5] Expert interview

0.6% p.a. and its export has grown by 0.7% p.a. This illustrates that firms in the export chain should perform better than firms in the domestic chain. The way government currently views the industry as one value chain is not able to pinpoint this issue and it will continue to misperceive that the whole textile sector is doing well, however in reality one chain is doing well but the other is facing some constraints.

Table 4.5 summarises the characteristics of each firm. The results of the firm interviews also support what we have found from data analysis, i.e. there are two value chains in the textile sector. The columns highlighted in grey indicate firms classified as domestic textile value chains.

Table 4.5: Summary of characteristics from firm interviews

	Response					
	T1 **TTL**	**T2** **Shinawatra**	**T3** **Luckytex**	**T4** **Krungthon**	**T5** **Capital Rayon**	**T6** **Mitsubishi**
Product	Synthetic fabric	Thai silk & cotton & textile products	Woven fabric	Woven, knitted & cotton	Woven & knitted fabric and clothing	Synthetic fibre, fabric & clothing
Manufacturing type	OBM	OBM	OBM	No brand	No brand OEM	OBM
Sector	Textile	Textile	Textile	Textile & clothing	Textile & clothing	Textile & clothing
Type of company	Public Listed Sub of Jap firm	Limited	Public Listed Sub of Jap firm	Limited	Limited	Limited
Initial investment size (Mil Baht)	150	18	520	12	200	250
No. of employees	950+	70+	2,350+	300+	700	n.a.
Years of operation	40+	83	52	18	47	52
% of export	50%	50%	70%	1%	5%	80%
Export market	USA Japan Australia Middle East Asia South Africa	USA Europe China Japan Malaysia	Europe Asia Middle East USA	Laos Macedonia	Myanmar Bangladesh South Africa	Japan North Asia
Main distributors	Direct to customer Trading firms (5%)	Direct to customer Individual agents	Trading firm Individual agents	Direct sales via own salesperson	Individual agents	Trading firm
Governance	Relational	Relational	Relational	Market Relational	Market Relational	Subsidiary

We found that four out of six companies we interviewed participate in exporting textiles, while the other two participate in the domestic textile chain. Those in the export value chain

distribute around 50-80% of their total production to the international market. However, firms in the domestic chain sell most of their products in Thailand. In addition to having a different sale structure, these two chains have other features, such as characteristics, distribution channels, strategies and upgrading processes.

There are clear differences in the characteristics of firms in the two chains: firms in the export chain appear to be larger, joint ventures with international partners and focus on OBM products, while firms in the domestic chain are relatively small though still larger than the clothing producers, run by Thais and produce OEM products. Three out of four firms in export-oriented chains are large and operate as OEM and OBM. This is in contrast to what the government perceives, which is that most Thai firms are OEM and produce no-brand goods. A particular example is T2, a firm in the export chain that, instead of being OEM, focuses only on OBM products with a niche market. This firm is exceptional because it produces not only textiles as raw material for clothing production, but also household textiles, which is an end product in itself. This firm will therefore have a different business model and face different issues from those faced by other raw material textile producers. In contrast, firms in the domestic chain are relatively small and, instead of being independent firms, are integrated textile and clothing firms. Firms in this chain appear to produce no-brand and OEM products for clothing export and are owned by Thai producers.

There appear to be different types of distributor between these two value chains. Firms in the domestic market sell their products directly to their end consumers or through individual agents, while firms in the export market offer their products through multiple channels such as international trading firms or sell directly to clients or individual agents. This is probably because firms in both chains are at different stages of development and have different markets.

Firms that focus on the domestic market use most textile products in their manufactures, whereas only a small fraction are distributed directly to local clothing producers. Firms in this chain use small agents or their own sales representatives to distribute their products for export. We found several reasons why firms in this chain opt for small agents: export is not the firms' main source of revenue, they have small export volumes which trading firms do not favour, agents have better knowledge of the market than producers, and trading firms pay high commission (see table 4.6).

Table 4.6: Statement responses to question 'Why do you use individual agents as your distributors?'

Keyword	Example Statement	Company	Sector
Export is not a main revenue driver	*"Our main market is domestic; the remaining capacity will be used to produce export products. So we only have one salesman who sells products directly to Laos and Macedonia. He has helped form long-term relationships and trust between ourselves and clients for more than 10 years. Clients visit us twice a year."*	Krungthon (T4)	Domestic
Small volume & limited market knowledge	*"We used Indian traders as our textile distributors because they are willing to sell small volumes to the client…. Furthermore, we are producers while they are marketers. They know who to contact and sell the product to. We do not have that information. Furthermore the traders know the language and are able to close the sale for us."*	Capital Rayon (T5)	Domestic
High commission from international traders	*"Commission of international traders is too expensive!!!"*	Capital Rayon (T5)	Domestic

For example, firm T4 has exported its products to Laos and Macedonia using its own salespeople on the basis of a long-term relationship and trust between the company and foreign clients for more than 10 years. They believe that they should focus primarily on the domestic market first, and that the export market is just opportunistic. While T4 sells directly to its clients, another firm, T5, hires Indian small agents to market its products in Myanmar, Bangladesh and South Africa. These firms use small agents because they are willing to sell in smaller quantities. In addition, they have market knowledge and can help reduce language barriers. Finally, these firms export relatively smaller volumes and it is not cost effective to channel their products through international trading, which requires them to comply with stringent international rules and standards.

In contrast, firms in the export chain appear to adopt multiple channels to distribute their products; only one firm utilises a single channel, i.e. a trading firm, but because it is a subsidiary of the trading firm, it is not allowed to use other channels. Other firms either use international trading firms like Li & Fung, direct contact with their clothing customers or end users, or small agents.

Many Thai firms use trading firms as their main distribution channels. These firms perceive that trading firms can assist producers in international market entry, and provide a distribution channel and data on market trends and customer needs. Other advantages include secure and guaranteed payment to manufacturers, avoidance of duplicating distribution channels and helping guide manufacturers through market trends, demand and behaviour. Some other firms use international traders for relationship reasons, for instance if they are a related company (see table 4.7).

Table 4.7: Statement responses to question 'Why do you use international traders as your distributors?'

Keyword	Example Statement	Company	Sector
Extensive network Reduce financial risk	"Trading firms have many advantages for us; they have an extensive worldwide client network and branches which we do not have. Furthermore, by selling our products via trading firms, our payment is guaranteed, unlike having direct sales with which we have default risk. It also avoids duplication of distribution channels."	Luckytex (T3)	Export
Main shareholders	"We export 95% of our products directly to clothing producers; we have to export the remaining 5% via trading firms, who are our major shareholders, for the sake of good and appropriate manners."	TTL (T1)	Export
Main shareholders	"We have no choice, they are our major shareholder…."	Mitsubishi (T6)	Export

However, there have been changes in recent years with producers having direct contact with end consumers. The key reason is better online communication, which makes communication cheaper and easier for both parties. Other firms have direct access to their buyers because of the uniqueness of their products and/or to diversify risk away from one distribution channel.

Table 4.8: Statement responses to question 'Why do you use direct sales to customers as your distribution channel?'

Keyword	Example Statement	Company	Sector
Internet Cheaper communication	"Since 2001, most end customers have become smarter and have started to change their behaviour by making direct contact with suppliers due to globalisation with borderless communication as a result of the internet. The cost of communication becomes cheaper. Consequently, the role and function of trading firms in the textile sector have declined."	Luckytex (T3)	Export
Unique product	"Since our products are very unique, we have our own marketing team to sell and promote our brand. However, in some countries that do not allow direct access, like Japan, we have agents to distribute our product."	Shinawatra (T2)	Export
Diversify risk	"It is very high risk if Thai firms rely heavily on trading firms to enter into the international market since the producers cannot have control over the export market and there is a lack of linkage with the end buyers. Thai producers should try to have direct access and contact with end consumers."	TTL (T1)	Export

From this examination, we can deduce that firms in these chains utilise different distributors because of three factors: different stage of development, export markets and strategy.

Firms in the domestic chain tend to be less developed and less sophisticated e.g. slower processes, lower quality production and higher costs than those in the export chain. These firms are not able to pass the rules and regulations of international trading firms. In addition, they might not want to pay high commission fees to traders. So firms in the domestic chain prefer small agents to international traders.

Trading firms normally operate in countries where there are economies of scale, volume and growth potential such as the USA, EU and Japan; they are not willing to operate in emerging countries because the cost of setting up a branch is more than the benefit they will get. This does not

match the market and abilities of firms in the domestic chain. As mentioned, firms in this chain produce lower quality and have lower standards, therefore they can only focus on emerging markets in which only small agents are willing to enter.

Firms in these two chains also have different strategies toward export markets. Domestic firms do not see export markets as a revenue generator but make money only from time to time, i.e. opportunistic strategy. When local consumption cannot use up their capacity, the export market helps the company to fulfil the unused capacity. Therefore, they do not need to use international traders to help expand their business. In contrast, firms in the export chain fully commit to and compete in this market. Their revenues rely upon the international market and their ability to compete and expand globally. Therefore, international trading firms are one of the important channels through which to increase their revenue.

Firms in these two chains have different views on competitive advantage for the industry. Those in the domestic chain focus on cost reduction and operational effectiveness. This is because they only produce textiles as a raw material or input for their clothing production; their only business objectives are to achieve cheaper production costs and a faster production line. Hence, in terms of upgrading, they would only focus on process and internal operation upgrading and not on product and brand development like their counterparts.

Table 4.9: Statement responses to question 'What are your strategies in competing or upgrading?'

Keyword	Example Statement	Company	Sector
Cost of production Move production base	"If possible, the company wants to move the production base to Vietnam and Cambodia. Their, production costs will be much lower."	Krungthon (T4)	Domestic
Niche market	"In textiles, Thailand can compete in a specialist market, for example it can compete with China in basic colour textiles. However, Thailand cannot compete in darker colours because it has to import colour chemicals, causing higher production costs."	Krungthon (T4)	Domestic
Low price	"To be able to survive in the highly competitive global situation, textile manufacturers need to deploy a price-competitive strategy, focus on low costs of production and high speed delivery."	Krungthon (T4)	Domestic
Build brand Product quality	"The Thai textile and garment industry now has little potential to grow. To be able to survive or compete in the international market, Thai manufacturers/exporters have to build their brand, credit and reputation. At the same time, the products must be of great quality with uniqueness or differentiation."	TTL (T1)	Export
Niche market Unique product	"Thailand should not compete in mass production with large manufacturers like China due to cost competitiveness and economies of scale. However, to compete in the global arena, Thailand should use its core strength and competitive advantages, i.e. focus on the niche market like our company, by producing unique and fine quality products which China cannot duplicate."	Shinawatra (T2)	Export
Product quality	"Thai textile producers keep controlling and improving the quality of their products to maintain their strengths. This enables the Thai textile industry to compete with China, Indonesia and Vietnam where textiles are a lot cheaper. Therefore, in spite of the higher price, it is still acceptable to customers. This means customers can accept and afford the higher price which matches the product quality."	Luckytex (T3)	Export

In contrast, firms in the export chain focus their strategy by developing better quality products or differentiating their products. They believe that if Thai textile manufacturers keep maintaining or improving the quality of their textiles, higher prices would still be acceptable to customers. Many other firms also assert that to be able to compete in the international market they have to build brand, credit and reputation. This is the reason why firms in the export chain focus on company development such as they process, product and brand upgrading.

From the above data and information, it is very clear that, instead of one single value chain perceived by many researchers, government and policy makers, there are actually two chains in the textile sector: the domestic textile chain and the export textile chain. Firms in the domestic textile chain are cotton, woven and knitted textile producers of relatively small size, and integrated textile and clothing firms that produce OEM products for clothing export. Their main distributors are small agents because they are more cost effective. They also focus on process improvement and internal operation so that they can keep their costs low to produce clothing for export. Firms in this value chain face a steady decline in domestic demand. The domestic consumption of cotton textiles is continually decreasing. The only way for such firms to survive is for them to be able to improve product quality. However, since they produce for Thai clothing producers, it is too difficult to do so.

On the other hand, firms in the export chain are large companies and mainly joint ventures that produce both woven and synthetic products. They are independent textile firms that produce both OEM and OBM products. They employ international traders and buying offices because of their extensive network for distributing products overseas. This is because they have invested a lot of money in the company and need to find ways to recoup their investment; they therefore need to work with people who know how to help them identify demand from the international market. They pay attention to the quality of products and brands in order to compete with international competitors.

There are two clothing value chains: domestic focus and export focus

Similar to the textile chain, there are two value chains in the clothing sector, namely domestic and export. For the export chain, Thailand can produce 499.8 million tonnes of clothing each year and exports 200.4 million tonnes, which account for 40.1% of total production, and generate US\$ 3,079.30 million or 40.8% of Thailand's total textile and clothing exports. For the domestic chain, Thailand imports 37.2 million tonnes and consumes 336.5 million tonnes of clothing products, which account for 62.7% of total production and imports of clothing to Thailand. The domestic chain comprises mainly knitted and woven clothing while the domestic chain comprises woven clothing products.

Unlike the textile chain in which woven textiles are the key driver for Thailand's export performance, in the clothing chain it is knitted products. The clothing sector produces mainly two types of product: woven clothing and knitted clothing totalling 500.00 million tonnes per year. 60% of total production is woven clothing and another 40% is knitted clothing. But Thailand consumes 86.4% of woven clothing locally compared with only 38.6% of knitted clothing. It then exports 54.2 million tonnes, which is the equivalent of US\$ 1,161.30 million or around 18.1% of woven clothing abroad. This accounts for 15.4% of total textile and clothing exports with an average growth rate of - 3% p.a. Thailand also exports 146.2 million tonnes, which are the equivalent of US\$ 1,918.00 million or 73.2% of knitted clothing abroad, accounting for 25.4% of total textile and clothing exports, with an average growth rate of 1% p.a. This again illustrates that there are two value chains in the clothing sector: woven clothing is produced for domestic consumption while knitted clothing is for export purposes.

The findings of the two clothing value chains are confirmed from the firm interviews; there are firms that focus on international markets and others that focus on the domestic market. The table below summarises the characteristics of firms in this chain.

Table 4.10: Characteristics of firms in the clothing value chain

	Response											
	C1 Krungthon	C2 Capital Rayon	C3 Mitsubishi	C4 Theparerg	C5 Union Garment	C6 Thanulux	C7 V.T. Garment	C8 Castle Peak	C9 Four Star	C10 Central	C11 S-Class	C12 KC Garment
Product	Woven, knitted & cotton	Woven & knitted fabric and clothing	Synthetic fibre, fabric & clothing	Trousers, skirts jeans & jackets	Shirts, T-shirts & uniforms	Shirts, trousers, suits & children's wear	High-end outerwear, casual wear & sports wear	Outerwear such as jackets & overcoats	Children's wear	Manufacturer, retailer & wholesaler of own-brand apparel	Women's wear & Thai silk	Men's & women's wear
Manufacturing type	OEM	OEM	OEM	OEM	OEM	OEM OBM ODM	OEM	OEM	OEM	OBM ODM	OBM ODM	OEM
Sector	Textile & clothing	Textile & clothing	Textile & clothing	Clothing	Clothing	Clothing	Clothing	Clothing	Clothing	Clothing	Clothing	Clothing
Type of company	Limited	Limited	Limited	Limited	Limited Sub of a large listed conglomerate	Public Listed	Limited	Public Listed	Limited	Limited Sub of one of the largest retailers	Family business	Family business
Initial investment size (Mil Baht)	12	200	250	35	50	120 3,000 in 2011	40	400	35	800	10	5
No. of employees	300+	700	n.a.	700	700+	2,700	3,500	2,000	300+	3,000	50+	~40
Years of operation	18	47	52	27	38	37	31	36	25	60	38	10
% of export	95%	100%	90%	100%	90%	40%	100%	100%	100%	10%	0%	0%
Export markets	EU UK Belgium	USA UK	Japan	USA Europe Japan	Australia Canada Scandinavia	Worldwide	USA EU	USA EU	USA EU Canada Japan	ASEAN India Middle East	-	-
Main distributors	International trading firms Independent agents	International trading firms	International trading firms	Buying office Individual agents	International trading firms Independent agents Direct	International trading firms Direct	Buying office Individual agents	International trading firms Direct	Buying office International trading firms	Owned foreign distributors	-	-
Governance	Long-term	Long-term	Subsidiary	Long-term	Long-term	Long-term		Long-term & market	Long-term	Long-term	-	-

We found that four out of 12 firms participate in the domestic clothing chain where most of their products, ranging from 60 to 100%, are sold in Thailand. Meanwhile, the other eight focus on export to the clothing chain, which exports more than 90% of their products abroad. There are distinctions in characteristics, export markets, implemented strategies and upgrading between these two chains. However, we found that there are also similarities in distribution channels and their relationships. Moreover, firms in each chain, though they might have similar characteristics, may have different business models/strategies to improve their performance.

The characteristics and business dynamics of firms that focus on export markets are very homogeneous; small- to medium-sized firms with an OEM model focus on the major export markets. However, these characteristics and dynamics are more diverse for firms that focus on domestic markets. They are both large and small firms in this value chain, and can also be OEM, OBM or ODM.

In terms of characteristics, firms in the export chain tend to be small or medium sized. Apart from C8, which is a listed company, and C2 and C3, which are integrated textile and clothing producers, all other firms in this sector are small size with an investment of less than US$ 1 million. Furthermore, it is very clear that all firms in the export chain are OEM producers for international brands like Nike, Pink or Marks & Spencer. All of these firms export more than 90% of their production. Though there seems to be a similarity in the characteristics of firms in the export value chain, the business models/strategies of firms 'within' each value chain vary. For example, three firms in the export clothing chain, C1, C2 and C3, are integrated textile and clothing producers which tend to adopt complete chain production to their advantage, while other firms in the same chain only focus on downstream production and try to source their raw material from elsewhere.

In contrast, there are diverse and heterogeneous characteristics in the domestic clothing value chain. It appears there are firms within this chain that have the ability to mass produce for domestic consumption and export, and other firms that only produce customised or small-scale products that can only be sold domestically. Two of the firms are large public listed and professionally run companies with more than 50 years of operation. Both firms produce OBM and ODM products and have bought brand licenses from international brand owners and have been trying to build their own brands for many years. On the other hand, another two firms are small family businesses: one with its own brand and another with no brand and only OEM status. Both firms sell 100% of their products on the domestic market.

This illustrates that firms in the domestic chain are diverse because there are various segments and preferences in the local market. Large firms focus on mass production with economy

of scale for middle-grade segments, whereas the smaller firms can appeal to mid- to high-end niche markets or lower segments without brand names. This implies that the domestic chain could be more complex and firms in the chain will face various issues. So the policy cannot be one-size-fits-all to cover all types of firm. There should be various measures that are suitable for each chain.

In addition to differences in characteristics and business models, there is also a difference in terms of export markets; firms in the export chain focus on selling their goods to major countries like the USA, EU and Japan. These three regions are major clothing export markets for Thailand, while those for the domestic chain are diversified. The two large firms that export their products in the domestic chain have different export market structures; the domestic firm exports to emerging economies like ASEAN, India and the Middle East while the joint venture firm has diverse markets such as the USA, Canada, EU, Japan, Korea, ASEAN, Australia and South Africa.

Though they export to different markets, there are no clear differences in distribution channels. The export chain focuses on trading firms and buying offices to expand its international network; the domestic firms adopt trading firms, sell directly to their customers and establish partnerships with international firms to distribute their products abroad. This is because clothing is a global product and these firms, regardless of whether they belong to an export or domestic chain, all face international competition. There are no other ways in which they can distribute a large volume of products to major buyers, apart from through trading firms and buying offices.

In addition, Thai producers find it very difficult to distribute the products by themselves. Many firms express that it is already challenging and difficult to compete by producing clothing products with high quality but at lower prices. They agree that Thai firms still need trade intermediaries because Thai operators experience a lack of extensive networks, incompetent marketing and negotiation skills, and a lack of high-calibre personnel within the company and financial support in performing such an activity (see table 4.11).

Table 4.11: Statement responses to question 'Why do we need trade intermediaries?'

Keyword	Example Statement	Company	Sector
No network No marketing abilities	*"Thai producers need to rely on international trading firms like Li & Fung to enter the global market. We cannot find any domestic firms that have extensive networks and marketing abilities like them."*	Krungthon (C1)	Export Clothing
No abilities No capital No HR	*"The distribution capability mostly relies on the trading firms, as the company has insufficient ability to gain access by itself to the international market due to capital constraints and lack of human resource skills and abilities. The most important key success factor is how to produce the garment at a low price to be able to compete with other low-cost manufacturing countries such as China, Vietnam and Cambodia, which is a very challenging task for Thai garment manufacturers to perform."*	Krungthon (C1)	Export Clothing
No network	*"Who in Thailand possesses a sourcing network like trading firms?"*	Capital Rayon (C2)	Export Clothing
No capability No marketing skill	*"Thai people are capable of production but lack marketing skills and capabilities to penetrate the global markets."*	Theparerg (C4)	Export Clothing
No network	*"Though our parent companies are one of the largest trading houses in Thailand, they still find it difficult to extend their network abroad."*	Thanulux (C6)	Domestic Clothing
No marketing abilities	*"We are only clothing producers, we do not have marketing skills."*	VT Garment (C7)	Export Clothing

The trading firms (e.g. Li & Fung, Mitsui, Diethelm) play an important role in the Thai garment industry because Thai manufacturers have to rely on them to be able to enter the global market. Thai producers find many advantages in employing trading firms as their distributors. For example, trading firms have very good relationships and network with the end customers, and since they have linkages with them, they know market information and the behaviour of buyers. In addition, they control production standards while supporting logistics and finance of Thai manufacturers. Therefore, producers can only focus on production and cost reduction. The table below illustrates the various roles of trading firms in supporting Thai producers.

Table 4.12: Statement responses to question 'What are the roles of trading firms?'

Keyword	Example Statement	Company	Sector
Global network Design Production plan Sourcing support Quality control Distribution Finance	*"'Li & Fung', the largest trading firm in Thailand, partners with a worldwide network of thousands of independent suppliers, filling customers' orders by selecting the best partners for each part of the job.* *At the front end, it provides design, engineering and production-planning services. In the middle stage, it organises raw material and component sourcing. At the back end, it offers quality control, testing and logistics services.* *They also support us in finance by offering longer credit (due to high equity/venture capital),and letter of credit service to clients."*	Krungthon (C1)	Export Clothing
Production standard Production compliance	*"Li & Fung will help a factory set production standards and sends its compliance company to investigate the factory.* *The first investigation is offered free of charge. If the factory does not fulfil the criteria the first time, it will have a second chance to improve itself and be re-investigated but with certain charges. There is a follow-up and monitoring system to check the progress of orders and to assure that the quality, lead time and delivery time of products meet the customers' needs."*	Capital Rayon (C2)	Export Clothing
Financial support Global network	*"The advantages of distribution through trading firms are that they can offer financial support such as financial credit and letter of credit service to clients. Furthermore, they have a large customer base worldwide."*	Theparerg (C4)	Export Clothing
Extensive global network	*"Trading firms have relationships and extensive worldwide client networks."*	Thanulux (C6)	Domestic Clothing
Logistic system Global network Language Save time and cost	*"We rely on the foreign-based trading firms, not local Thai trading firms. This is because the foreign trading firms have better logistics systems and wider client global networks. The distribution through trading firms helps get rid of language barriers, for instance when exporting to Japan where we do not share a common language.* *The trading firms also help manufacturers in cost and time saving because the latter can sell the larger orders to trading firms without taking time and effort to directly contact each individual customer but purchasing small amounts of orders. This large order amount also increases the company's bargaining power."*	Castle Peak (C8)	Export Clothing

Though there are benefits from having trading firms as distributors, Thai producers face many downsides. For example (see table 4.13), as intermediaries, producers have to pay commission to them for such a role and this increases the cost to producers. Trading firms also assert many controls and powers over producers; these include product quality, production standards, human rights protection and even cost control. Worst of all, producers may face the risk of losing their business if they are unable to comply with such instructions, rules and conditions.

Table 4.13: Statement responses to question 'What are the disadvantages of trading firms?'

Keyword	Example Statement	Company	Sector
Price & cost control Risk of losing business Quality control	"The trading firms (e.g. Li & Fung, Mitsui, Diethelm) play an important role in the Thai garment industry as they can assert more influence and power on Thai garment manufacturers than buyers (e.g. Carter's). The Thai garment manufacturers are controlled by the trading firms, in terms of the factory standard conditions, including factory size, labour status (related to human rights protection) as well as garment quality specification, e.g. design, pattern, style, colour, raw materials (type of textiles) or even price. As the quality and price are controlled by trading firms/buyers, Thai manufacturers as followers are facing constraints in growing their business or enhancing their competitiveness. Thai manufacturers can only reduce the cost of production or even allow themselves to incur the loss, otherwise the trading company Li & Fung, for instance, will move to another manufacturer, as one of its tasks is to outsource the lower-value-added tasks to the best possible locations around the world."	Krungthon (C1)	Export Clothing
Price & cost control Risk of losing business	"All rules and regulations are controlled by trading firms and buyers regardless of how capable the manufacturer is. We have to encounter the price control/dumping from Li & Fung, which is demanded by Li & Fung's client network. If the factory cannot produce at the quoted price or cannot comply with the conditions of Li & Fung's compliance company, it will not get orders."	Capital Rayon (C2)	Export Clothing
High commission Cost control	"Reliance on trading firms causes manufacturers' costs of production to get higher as they charge commission for sourcing. According to the current global trend due to the economic recession, the ultimate demand from buyers is to purchase at the lowest price as much as possible. As both buyers and trading firms in the global garment industry have more power and influence than suppliers/manufacturers, they control the market, and as a result, they reduce the margins of manufacturers, not those of trading firms. This is all a vicious circle that manufacturers have to go through."	Theparerg (C4)	Export Clothing
Strict standards & regulation	"The differences between direct export and export through trading firms is that there are no factory standard requirements for direct export to clients, whereas export through the trading firms requires strict factory standards in terms of labour or human rights protection. The process is so long, tedious and expensive that many Thai producers do not like go through it."	Union Garment (C5)	Export Clothing
High commission Cost control Risk of losing business	"The reliance on trading firms causes the cost of goods sold to be higher due to the commission charges. The commission charged by the larger-sized trading firms ranges between 10-15%, whereas the commission charged by the small-sized trading firms is about 3%. As the trading firms would like to protect benefits for their own customers in regard to sourcing assistance, they intervene in the insight details of production costs of manufacturers, together with the formulation of specification and target price they want. Consequently, the manufacturers have to encounter price lowering and accept the target price just for survival."	Thanulux (C6)	Domestic Clothing
Commission Lack of end customer information	"The company will lose a certain percentage of its margins due to the commission charge. In addition, the trading firms have a tendency to protect their benefits first and will not give producers full information about the end customers. And if the trading firms are not good enough, it can harm the company by losing customers at the end."	Castle Peak (C8)	Export Clothing
Commission No linkage with end consumers Strict standards & regulation	"Apart from the high costs of marketing/lower profits due to the commission charge, relationships with trading firms also hinder us from having opportunities to contact buyers directly. We are unable to share any useful ideas with buyers. Finally, they require very strict compliance with factory standards, in terms of labour welfare protection."	Four Star (C9)	Export Clothing

Due to the many disadvantages of relationships with trading firms, nowadays producers try to sell their products directly to their end customers or through buying offices. Selling directly to clients and via buying offices has several advantages, such as reducing production costs as there is

no commission, better market information and favourable consumer behaviour from better linkages and more secure relationships with buyers.

Table 4.14: Statement responses to question 'What are the advantages of direct selling?'

Keyword	Example Statement	Company	Sector
No commission	"We use buying agents for small- and medium-sized customers because we don't want to share our profits with trading firms."	Theparerg (C4)	Export Clothing
No commission	"By distributing the products directly to the buying office, V.T. Garments do not need to pay any commission charge to trade intermediaries. The distribution through buying offices is equivalent to direct selling to customers, so the costs of goods sold are cheaper, as there is no commission charge."	VT Garment (C7)	Export Clothing
More secure relationship Better linkage & communication with customers	"Direct selling to customers has some advantages in the way that the relationship is more secure with better understanding and easier decision making so as to offer products meeting the requirements and standards of customers as much as possible."	Castle Peak (C8)	Export Clothing
No commission Better linkage Share information Stable relationship	"For buying offices, the producers will receive higher profits because there is no commission involved. The producer can also have direct contact with clients and share useful ideas and information with them. The relationship is also more stable and long term and restriction on factory standards is lower."	Four Star (C9)	Export Clothing

Though the roles of trading firms are very clear, the roles of buying offices vary (see table 4.15). Nike and Adidas implement a 'closed-end' policy, where they are intensely involved with the formulation of specification, raw material sourcing, jointly setting factory standards, and determination of cost structure. In contrast, GAP uses an 'open-end' policy, which only emphasises issues about factory standards and labour protection. The various roles of buying offices make Thai producers reluctant to work with them. With the investment they need to make to follow the request, there is no guarantee that they will become producers to the brand owner. Furthermore, producing for one or two major brands is very risky.

Table 4.15: Statement responses to question 'What are the roles of buying offices?'

Keyword	Example Statement	Company	Sector
Nike & Adidas *- Formulate specifications* *- Set standards* *- Sourcing support* *- Cost control* *GAP* *- Factory standards* *- Safety procedure* *- Human rights*	*"Nike and Adidas intensely get involved in the OEM-manufacturers as part of their companies. They will formulate specifications (style, pattern), factory standards and even control raw material and cloth consumption up to lead time. They know all about costs of production.* *GAP involves manufacturers less than Nike, Adidas e.g. it will not get deeply involved in costs of production. Instead, it will give more importance to factory standards and employment, in terms of safety and human rights protection."*	Theparerg (C4)	Export Clothing
Closed end *- Comply specifications* *- Set rules and regulations* *Open end* *- Monitor & partially control specification and regulations*	*"In general, there are two types of buying policy from these buying offices:* *- The first is the 'closed-end' buying policy in which manufacturers have to fully comply with all the specifications, rules and regulations of the buying offices so as to meet the end buyers' requirements.* *- Another is the 'open-end' buying policy in which manufacturers partially abide by the specifications, rules and regulations of the buying offices."*	VT Garment (C7)	Export Clothing

In addition to similarities in distribution channels, there are no differences in the dynamics between distributors and producers; firms in both chains have long-term relationships with their distributors. Contrary to the theory that governance in clothing manufacturers is mostly market-like or modular, relationships between Thai clothing manufacturers and their distributors are relational, with many years of collaboration.

Furthermore, the perception of Thailand's strategy and direction is diverse between the two chains. Firms in the export chain focus on price competitiveness, operational effectiveness and scale, whereas firms in the domestic chain focus on brand, design and niche products.

The export chain argues that since the skills and quality are not much different from those of manufacturers since they need to meet those requirements anyway, Thai producers should keep the cost of production as low as possible (see table 4.16). They argue that in an increasingly competitive global environment, price or cost competitiveness is becoming a key issue, but not through quality, as every country in the Asian region (e.g. Vietnam, China, Myanmar, Cambodia, Laos, and Cambodia) can produce a relatively similar quality. It is already very difficult for them to only act in compliance with the buyers' requirements for OEM. In order to control costs and achieve operational efficiency as well as achieving higher productivity, these OEM producers only engage in process development such as shortening their production and delivery time or reducing waste in production.

Table 4.16: Statement responses to question 'What are your strategies?'

Keyword	Example Statement	Company	Sector
Price Low cost of production Delivery speed	"To be able to survive in the highly competitive global situation, the Thai textile and garment manufacturers need to deploy a price-competitive strategy, focusing on low cost of production and high speed delivery. Nevertheless, that strategy is not sufficient to give companies a sustainable competitive advantage over rivals. If any factories have a vertical set-up business model (holistic integration consists of spinning, weaving, dyeing and garment), they will get competitive advantage over competitors due to lower cost of production. Furthermore, we do not want to focus on the marketing. Instead, we want to reduce costs as much as possible, since the low cost of production is the key success factor for OEM export business. If possible, the company wants to move the production base to Vietnam or Cambodia where the cost of production is lower."	Krungthon (C1)	Export Clothing
Small order Customer relationship Low cost of production	"There are three critical factors to be able to maintain Thailand's position in the global market. First, as an OEM manufacturer, to be able to survive and compete with China Thai companies should get small orders, as China dominates mass/big orders. This is a remaining gap for the company to fill. Second, Thai producers should focus on Customer Relationship Management (CRM) to gain and maintain customers. Last, since their skills and quality are not much different from those of manufacturers, Thai producers should keep the cost of production as low as possible. In an increasingly competitive global environment, price or cost competitiveness is becoming a key issue, not competitiveness through quality, as every country in the Asian region (e.g. Vietnam, China, Myanmar, Cambodia, Laos, Cambodia) can produce relatively similar quality."	Union Garment (C5)	Export Clothing
Quality Cost control Lead time Production process	"Instead of making our own brand we would like to be 'world-class garment manufacturers' by following a lean management system which focuses on 'highest quality, lower cost, shortest lead time by eliminating waste time and activity'. We will achieve this goal by maintaining positive open lines of communication with business partners in order to contribute to the smooth flow of information and efficient cooperation over the long term, pursuing cost-saving whilst producing the best quality products and adding value for customers, providing training to all employees with the skills and tools required, and promoting and supporting a culture of continuous improvement, and sustaining operational stability."	VT Garment (C7)	Export Clothing
Product quality Customer relation Efficiency	"The company imports 90% of its raw materials (fabrics) from Taiwan, Korea and China because the required fabrics cannot be found in Thailand. Nevertheless, in spite of the higher costs of production as a result of importation of raw materials, the customers still choose to buy from Castle Peak. This is because the company has a good reputation in delivering high quality products and has professional expertise in better understanding customers and being able to meet their demand, e.g. specification, design, pattern. The quality of our products is better than those from China, Vietnam, Indonesia, Sri Lanka and Bangladesh. We are keeping the highest quality and improving efficiency and productivity of labour to maintain our competitive export performance."	Castle Peak (C8)	Export Clothing

At the same time, clothing producers believe it will be difficult for Thai manufacturers to build brands because they do not know the demand or market size or the brand owners (see table 4.17). Export clothing manufacturers believe that design and product development roles remain with brand owners. Thai clothing producers cannot focus on brand building due to their lack of marketing skills and ability, and lack of capital and market information with a high risk of failure.

Table 4.17: Statement responses to question 'Why don't you make branded products?'

Keyword	Example Statement	Company	Sector
Lack of market information	"It is difficult for Thai manufacturers to build a brand because they do not know about the demand or market size or the brand owners. Compliance on the buyers' requirements for OEM is already tough enough for Thai manufacturers."	Mitsubishi (C3)	Export Clothing
High investment Lack of IPR Lack of HR in branding Lack of image	"The following factors obstruct the brand building of Thai manufacturers: - High costs, both the costs of marketing and intellectual property rights protection (trademark) - No image as 'selling points' of Thai garments - No niche or unique quality of garments - No salesmen - No good partner for a joint venture."	Union Garment (C5)	Export Clothing
High investment Lack of HR Lack of image	"It is not necessary for all Thai manufacturers/exporters to build a brand. The OEM and OBM manufacturers can, however, live together by supporting each other. We had experience of brand building in the past but it became an unsuccessful story. At that time, the company opened a branch office in the USA and at the end the company had to lose a lot of money. There are some difficulties/constraints of brand building as follows: - Brand building is so costly. Castle Peak does not produce a wide range of products, only outerwear (jackets and overcoats). It is thus not worthwhile for Castle Peak to build a brand just for one item and if producing many different products, they are different industries for that the company lacks those skills. - To build a brand successfully, not only does the company need sufficient capital but it has to readily prepare for any risks that might occur, for instance, marketing costs, overseas branch offices but also the sufficiency of qualified designers and a good Thai image."	Castle Peak (C8)	Export Clothing
Lack of HR High investment Risk of imitation	"It will be difficult for Thai producers to build their own brand. This is because the success of brand building depends on many issues such as quality and quantity of human resources, high investment, and risks and threats from counterfeits/imitation."	Four Star (C6)	Export Clothing
Lack of marketing skills Lack of brand building skills	"Though V.T. Garment is quite strong in its OEM manufacturing, they do not intend to create their own brand, due to lack of skill sets for marketing and brand building."	T Garment (C7)	Export Clothing
Limited market knowledge & information Lack of cooperation	"Currently, Thai manufacturers in the textile and clothing sector are developing faster than in the past. They employ IT more and develop machinery that leads to faster processes, shorter lead times, and less waste. However, Thai producers are losing their competitive advantage because they only pay attention to production and do not put great emphasis on creating a cluster, hence a lack of cooperation between upstream and downstream along the value chain. This causes them to have limited market knowledge and information. It will be difficult for Thai producers to upgrade their design and branding. Furthermore, the end buyers/customers require higher-standard products and more complicated conditions, which makes it difficult for Thai producers to compete in this new context. Most customers/buyers have their own brand and do not rely on producers to design for them. They have more consumer information and know the market better than Thai producers. Thai producers should focus on providing good quality products with competitive prices and deliver products on time."	Li & Fung	International Trader
No marketing abilities Lack of capital	"Thai people are not good at brand building that requires high marketing and promotion costs. The key survival factors for Thai clothing manufacturers in the so-called 'sunset industry' are improving their technology capability, reducing production scale, and approaching brand stores directly."	Mitsui	International Trader

Again, the two export firms in the domestic value chain agree that to compete in the global arena they have to develop and move up to ODM, focusing on value added and brand building (see

table 4.18). To become an ODM business, Thai producers need to focus on their strategies and have a clear direction. Key success factors include having their own R&D and design, brand building and management to gain brand recognition, and strong retail management and distribution channels. Both firms agree that brand building and focusing on a niche market are ways for Thai producers to remain competitive in global competition. They believe that Thailand can build brands by having clear strategies and a policy direction. Creating its own brands could be done by licensing or acquiring other well-established brands. There are only a few firms able to do so in Thailand.

Table 4.18: Statement responses to question 'Why do you make branded products?'

Keyword	Example Statement	Company	Sector
Focus on domestic market	*"It is likely that Thailand's exports cannot survive in the future, as Thailand surrenders to China, Indonesia, Vietnam, Taiwan and Korea in terms of new ideas/concepts on textile and garment fashion, a disadvantageous upstream sector (thread – the recycled yarns must be imported, leading to longer lead time and higher cost of production). Therefore, the only sustainable way to survive is to sell domestically."*	Thanulux (C6)	Domestic Clothing
Focus on value-added activities *Brand building* *Clear strategy & direction* *R&D* *Design* *Retail management* *Strong distribution*	*"Thai OEM manufacturers are less competitive than Chinese and Vietnamese OEM manufacturers due to their lower labour costs. Moreover, the OEM manufacturers have to follow the specifications of customers with 'no value added'. They are distant from design and technology and have to bear the largest burden in the value chain so as to manage the textile stock efficiently. So, to be able to survive sustainably in this industry, Thai manufacturers have to develop themselves and move up to ODM, focusing on value added and brand building.* *To become a successful ODM business like Central Trading depends on strategy and clear direction. Key success factors comprise having one's own R&D and design, brand building and management to gain brand recognition, and strong retail management and distribution channels."*	Central Trading (C10)	Domestic Clothing
Outsource production *Buy brand* *Design*	*"Thanulux is planning to move its positioning and role to develop from manufacturer to outsourcer in the future. It will play a more active role in being ODM and OBM rather than OEM. Thanulux already has an advantage by having licenses for various brands and also having its own brands. It would then be easier for the company to eventually move up to be OBM."*	Thanulux (C6)	Domestic Clothing
Joint-venture	*"The only way to enable Thai manufacturers to develop from OEM to ODM is to set up a joint venture with foreign countries to learn know-how, particularly marketing skill sets to be able to penetrate the international market."*	Union Garment (C2)	Export Clothing

From the above analysis and examination, it is very clear that there are two chains in the clothing sector: the domestic clothing chain and the export clothing chain.

Firms in the domestic clothing chain have diverse characteristics, markets, export channels, and business models. Those large and publicly listed firms that focus on the mass middle segment are mainly export drivers for this chain. They are able to buy or build brands to compete in international markets. Both domestic and international demand are key drivers for their growth. There are also small- to medium-sized firms that are not able to compete and export their products abroad, however they are able to have their own brands and focus on domestic niche markets. Their strategy is to make domestic sales with a better customer relation base in Thailand.

On the other hand, firms in the export clothing chain are small- to medium-sized companies with heterogeneous characteristics and business models. A major part of their production is aimed at traditional major export markets. Their performance highly depends on export markets and the global economy. Most of the companies focus on OEM, which makes them focus on cost control and operational effectiveness to comply with trade intermediaries.

Though both chains focus on making sales to different export markets, the domestic chain would be appealing to emerging markets and ASEAN, whereas the export chain would reach out to major foreign markets like the USA, EU and Japan. They also have similar types of distributor, i.e. international trading firms and buying offices. They need trading firms to expand their markets and buying offices so that they do not have to pay high commission fees to trading firms. Contrary to the theory that governance among clothing manufacturers is mostly market oriented or modular, the relationships between Thai clothing manufacturers and their distributors are relational, with many years of collaboration.

The missing sectors

The examination above illustrates that both the textile and clothing sectors can be reclassified into domestic and export value chains. In addition to the four chains discussed, there are other textile sectors that have always been neglected by policy makers: 'home textiles' and 'technical textiles'. Furthermore, another key sector, distribution channels, is always overlooked and dismissed by government agents and policy makers as part of the industry. These three sectors should be included in the textile and clothing industry and are described in the following section.

Home textile sector

Though the government has neglected this sector and there is very little research in the area, home textiles can generate an export income of US$ 365.5 million, accounting for 4.8% of total textile and clothing exports with an average growth of around 10% per year. The producers consist of many small- and medium-sized local and village businesses but are managed by professional companies (EXIM Bank Thailand). Government has supported the local home textile sector via the One-Village-One-Product policy, which encourages local people and villagers to develop local textile products for export. Major export markets are the USA (25.8%), Japan (11.9%), Australia (7.9%), China (3.8%) and Saudi Arabia (3.6%). Most of the companies in this sector are non-branded and OEM producers.

Technical textile sector

'Technical textiles' is a general term used to describe a broad range of textiles that are designed and manufactured primarily for their technical performance and functional properties rather than aesthetic and decorative characteristics. These textiles include non-wovens, wovens, knits and film composites. In 2010, technical textiles generated an export income of US$ 362.7 million or 4.7% of total textile and clothing exports. According to the expert interviews and literature review, it is believed that this sector is still small in Thailand and operated by large producers.

With the growing dominance of technical textiles, Techtextil, Messe Frankfurt GmbH has classified technical textiles into 12 groups from an application point of view as follows:

	Category	Applications
1	Agrotech	Agriculture, horticulture and forestry
2	Buildtech	Building and construction
3	Clothtech	Technical components of shoes and clothing
4	Geotech	Geotextiles civil engineering
5	Hometech	Components of furniture household textiles and floor coverings
6	Indutech	Filtration cleaning and other industrial
7	Medtech	Hygiene and medical
8	Mobiltech	Automobiles, shipping, railways and aerospace
9	Oekotech	Environmental protection
10	Packtech	Packaging
11	Protech	Personal and property protection
12	Sporttech	Sport and leisure

Distributors

Currently, there is hardly any research that touches on the distribution channels of Thailand's textile and clothing industry. However, from firm interviews, we found there are four different means by which clothing producers distribute their products on the market[6]: 1) direct sales or retailers, 2) individual trading agents, 3) international trading firms, and 4) overseas buying offices.

In the past, international firms without local knowledge had to contact Thai producers through Thai trading or wholesale firms. Recently, international trading firms and overseas buying offices have increasingly found ways to deal with local producers directly and become major buyers of Thai textile and clothing products. In general, major buyers in Thailand are retailers and branded marketers. These lead firms deal with various types of Thai textile and clothing producer and have diverse relationships with them. For example, a number of these buyers source directly from Thai producers, using local representative offices in Bangkok or buying offices in Hong Kong and Singapore. Other buyers use what Gereffi (1999) refers to as 'triangular' manufacturing. That is, buyers place orders with large regional garment manufacturers with whom they have had a long-standing relationship, many of whom are headquartered in Hong Kong and organise production through their own facilities in Thailand or pass on the orders to Thai suppliers. Other buyers also place orders with leading trade intermediaries, often based in Hong Kong or Singapore, who may also source through regional manufacturers. These various trade intermediaries have used their databases and relationships to find the lowest-cost producers in Thailand. They focus on high quality producers that meet their standards and price limits.

From the interviews, we found that most Thai producers, in both textile and clothing firms, use international trading firms as key distributors. Thai producers need to rely on international trading firms to enter into the global market because of their decent relationships, extensive networks and market information. In addition, these international trading firms, in addition to their intermediary role in business matching between manufacturers and buyers, support the producers in a variety of ways. For example, Li & Fung, one of the biggest international trading firms in Thailand, plays a more proactive role by placing importance on support activities such as:

- Study of demand and trend markets and providing its customers with significant information on the current market situation so that they are able to formulate policies to cope with such situations.
- Audit of factory standards in line with the human rights protection or welfare regulations.
- Coordination and support of its customers in terms of payment methods, e.g. LC, TT.

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[6] Interview with Thailand Textile Institute

Nowadays, people are trying to sell products directly to their end customers or through buying offices or independent agents. This is because they do not need to pay commission to international traders and like to have better relationships with, and understanding of, end customers. Since some manufacturers produce in small volumes, international trading firms are not willing to support them and it is more cost effective for producers to use individual agents or sell their products directly.

4.1.3 Section conclusion: Hypothesis on industrial organisational structure of textile and clothing industry

From the detailed industrial organisation information gathered and assessed, as well as qualitative accounts from literature reviews and expert interviews, it seems that the structure of the textile and clothing industry is not as simple as many policy makers believe. The industry does not operate as one simple value chain as many thought, and government's initiative of focusing on creating an industrial cluster via collaboration between the textile and clothing sectors might not be successful. From the analysis above, we found there are five value chains in Thailand, namely a) the export textile chain b) the domestic textile chain c) the export clothing chain d) the domestic clothing chain and e) the home and technical textile chain. An illustration of value chains is given in figure 4.2.

Figure 4.2: Five value chains of Thailand's textile and clothing industry

	Raw Material Sector	Component Sector	Textile Product Sector	Clothing Product Sector	Distributors	Export Value	2000-2010 CAGR	Export Market

US$ 742 m | US$ 1,053 m | US$ 1,188 m

16 14 L C
150 60 M,L C   595 52 S,M C,L
389 44 S,M C,L
2,388 809 S L

1 Export Textile

2 Domestic Textile

3 Export Clothing

4 Domestic Clothing

5 Home & Technical Textile

Import *Mill Tonnes*

Synthetic Fibers 387
Cotton 0.0

Synthetic Yarn 314
Cotton Yarn 61

Woven Fabric 159
Knitted Fabric 6

Dyeing, Printing & Finishing

Retailers/Direct
Traders
Agents
Buying Office

US$ 2,983 m
Synthetic US$ 2,236 m   ⬆ 7.1% p.a.
Cotton US$ 747 m   ⬆ 4.8% p.a.

Synthetic Fibers 918   514
Synthetic Yarn 626   445
Woven Fabric 483   462
Dyeing, Printing & Finishing

Cotton 0.8   390
Cotton Yarn 351   309
Knitted Fabric 263   263

Clothing for Export

Retailers/Direct
Traders
Agents
Buying Office

US$ 3,079 m
Woven US$ 1,161 m   54   ⬆ 1.2% p.a.
Knitted US$ 1,918 m   146   ⬇ 2.8% p.a.

Clothing for domestic
259   Woven   ⬆ 3.3% p.a.
77   Knitted   ⬆ 0.4% p.a.

Home, Technical and Other Textiles
US$ 1,487 m   ⬆ 7.4% p.a.

Synthetic Fiber:
- Indonesia, Vietnam, Turkey, China & Bangladesh

Synthetic Yarn:
- Turkey, Brazil & Japan

Cotton Yarn:
- China, Japan, Malaysia

Woven Yarn:
- UAE, Vietnam, & Laos Knitted: Cambodia, Laos, Vietnam

Clothing:
- USA, EU, Japan & Canada

Synthetic 77
Cotton 385

Synthetic 145
Cotton 18

Woven 137
Knit 7

Woven 13
Knit 24

a) **The export textile chain** consists mostly of synthetic fibre, yarn and fabric (particularly woven fabric) producers. Firms in the textile sector are usually large, with high investment, machinery and number of employees, which give them capacity to produce products for local usage and export to the international market. One of the reasons they are able to enter international markets is that they are usually well established or joint venture firms with plenty of experience. Firms from the textile sector seem to be able to operate in OBM and are willing to focus on and compete in product differentiation and branding. Some of them also produce specialised products that other people cannot replicate. Since producers in the textile sector are a small number of highly capital-intensive medium to large factories selling to highly diversified and fragmented export markets, they usually use international trading houses[7] like Li & Fung and Marubeni to sell their products to end customers. Textile firms adopt the trading-house approach because the export markets of Thai textiles have a good range of products and need various specialised traders and small agents to help them reach fragmented markets. Nowadays, since they are able to communicate and interact directly with their end consumers, these producers attempt to sell their products directly to their clients to avoid the commission costs to traders. The relationship between trade intermediaries and Thai producers are 'relational' i.e. the buyer has a long-term relationship with the seller.

b) **The domestic textile chain** consists of cotton and synthetic fibre, yarn and fabric. These companies have the capability to produce and sell their products primarily in Thailand. Some of them might also export a small fraction overseas. Firms in this chain are similar to those in the export textile chain, except they are smaller with less experience and ability to export abroad. Their production capacity and product quality cannot yet match those of the export textile chain. However, they are trying to improve the quality and variety of products to be able to enter international markets. Similar to the export firms, they employ mainly international traders as their key distributors. However, due to their lack of ability in marketing and communication, they tend to adopt smaller agents to distribute their products because they are cheaper than the traders. Similar to the export textile chain, they have a long-term relationship with their buyers.

c) **The export textile-clothing chain** consists of both knitted and woven clothing. Firms in the clothing sector are typically small, with low- to medium-level investment, standard machinery, but high numbers of employees. Furthermore, according to the interviews, firms in the clothing sector still utilise the OEM model and compete on price, process

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[7] Trading houses are independent companies matching domestic manufacturers and foreign buyers.

and efficiency. They perceive that they do not have the ability and skill sets to develop their own brand and compete with international players. Similar to the textile export chain, the clothing market focuses on several major buyers and employs trading firms, buying offices and direct sales to distribute their products.

Woven clothing shows a clear sign of decline, with average growth rates of -2.8% in value terms and -3.5% in volume terms. Though knitted clothing demonstrates signs of improvement with an average volume growth of 3.2%, there are also signs of price pressure from the market as the average export value growth is only 1.2%. Many companies that cannot endure price wars have significantly reduced and closed their operations. Those companies should be able to gain significant revenue from stable demand, however they need to compete in cost and this is where the China factor damages their growth potential.

d) **The domestic textile clothing chain** consists mainly of woven clothing. The characteristics of firms in the domestic clothing chain are quite diverse. They can be large, medium or small, new and creative companies, or joint ventures or local firms. There are various business models to compete with international and local competitors, but they all use brand and design to compete. Large and well-established companies look to acquire brands from overseas, while small and local firms try to create niche and creative products to compete with other players. The small local companies depend on agents who are interested in distributing their products abroad while the large firms use their own channels or trading companies to supply their products internationally.

Domestic consumption of woven clothing has a continual growth of around 3.3% p.a. while that of knitted clothing has been stagnant. It seems that many local products cannot compete with imported clothing, particularly knitted clothing. Imported knitted clothing accounts for 30.7% of domestic consumption with an average growth rate of 36.6%, while imported woven clothing accounts for 5.2% of total consumption with an average growth rate of 6.9% p.a.

e) **The other textile chain** consists of technical, home and other textiles. The chain makes a significant contribution to the overall industry and export value constantly increases. Since many home and technical textiles are end products in themselves and not raw material for further production, the structure and distribution channels of this chain are probably different from those of other chains. However, due to lack of information, the

study will focus on the aforementioned first four chains, though this particular chain will not be neglected by policy makers or government in the near future.

The findings derived from the literature review, expert interviews and firm interviews give us a better picture and understanding of the five value chains. We have a better understanding of their structure and characteristics from the literature review and expert interviews, and have gained an in-depth understanding of business models and governance between producers and trade intermediaries from the firm interviews. However, we need to validate and generalise these findings by conducting a survey. The survey will focus on the first four value chains and give us a better sense of how general these descriptions of different business models/dynamics are between segments. In addition, it will help us examine the value chains further by trying to assess and verify the differences between the four sectors, particularly types of distributor, governance/relationships and business models. We will then try to verify and prove that the difference in the export performance of these sectors is the result of the difference between types of distributor and manufacturer, i.e. business models.

4.2 Findings from the survey

The previous section illustrates how Thailand's textile and clothing industry has more than one value chain. In this section, we adopt a survey research method in an attempt to validate and reconfirm that the structure of the industry is far more complicated than government and policy makers think. The section will first illustrate the statistical results from the industry, which can be seen by government and policy makers alike, i.e. as one single chain and as a textile sector and clothing sector. We will then present further statistical results for the four value chains that truly reflect a more complicated structure and the different dynamics of each sector.

4.2.1 Illusion of aggregate data

Table 4.19: Comparison of means from survey results

	Textile	Clothing
No. of Samples	80	88
Year of Establishment	1985.9	1989.19
Years in Operation	25.1	21.81
Capital Size		
Small	39%	68%
Medium	34%	24%
Large	28%	8%
Employee Numbers		
Small	13%	14%
Medium	44%	39%
Large	44%	48%
Type of Business		
Family business	21%	26%
Partnership	74%	70%
Public listed	5%	3%
Type of Manufacturer		
Mixed	25%	27%
Exclusively no brand	29%	20%
Exclusively OEM	20%	27%
Exclusively ODM	5%	6%
Exclusively OBM	21%	19%
Sale Structure (1)		
Domestic	47%	15%
Export	53%	85%
Sale Structure (2)		
Export only	15%	55%
Export focus	34%	33%
Domestic focus	44%	11%
50:50	8%	1%
Export Market		
EU	24%	38%
USA	23%	29%
Japan	9%	12%
China	8%	1%
ASEAN	23%	11%
Other	13%	9%
Type of Distributor		
Retailer	34%	22%
Small agent	8%	9%
Trading agent	46%	52%
Buying office	9%	13%
Other	0%	3%

	Textile	Clothing
Governance		
Market	18%	20%
Turnkey	11%	27%
Relational	54%	36%
Captive	31%	23%
Subsidiary	6%	9%
Upgrading Process		
No change	4%	5%
Textile to garment	0%	0%
Garment to textile	4%	2%
Product upgrading	60%	52%
Process upgrading	34%	42%
Management system	44%	38%
Own brand	19%	23%
Challenges in Upgrading		
Not interested in upgrading	0%	3%
Lack of financial support	33%	31%
Lack of market knowledge	36%	36%
Unsupportive government policy	30%	24%
Lead firms block supplier	9%	2%
International law and regulations	9%	8%
No skill set	28%	31%
Technology constraint	40%	28%
Lack of raw material	56%	33%
Poor infrastructure	23%	23%
Invest in other business	0%	3%

The table illustrates the factors that the Thai government and policy makers see when they perceive the industry as a single value chain with only textile and clothing sectors. They see only that there are hardly any distinctions between characteristics, business models and distribution channels.

From the table, we see that the only distinct characteristics of the firms in these two sectors are investment size and structure of markets. In addition, a higher percentage of textile firms have relational governance with their distributors while a higher percentage of clothing firms are turnkey. There are no distinctions in other factors such as type of business and type of manufacturer. Furthermore, since the government and policy makers only look at the aggregate export data, they cannot see that firms in the two sectors have significantly different structures in the export market. They perceive that the key export markets are the EU, USA and Japan. In addition, they cannot differentiate what different types of upgrading the firms in these two chains go through.

4.2.2 Findings of disaggregated data

With such aggregate information, we cannot find any distinctions within characteristics, business models or markets of the industry. This again leads to a general one-size-fits-all policy that cannot solve problems at the appropriate point. We therefore attempt to disaggregate the data into four different types of value chain as discussed in the previous section i.e. a) export textile chain; b) domestic textile chain; c) export clothing chain; and d) domestic clothing chain. The results (see table 4.20) really suggest that there are differences in characteristics, export channels, business models and relationships with distributors between firms in the textile and clothing sectors, as well as among firms in the four chains.

Table 4.20: Comparison of means from survey results

	Textile Domestic	Textile Export	Clothing Domestic	Clothing Export	Remark
No. of Samples	35	45	10	78	
Year of Establishment	1990.4	1982.4	1986.6	1989.5	
Years in Operation	20.6	28.6	24.4	21.5	
Capital Size					
Small	43%	36%	40%	72%	*
Medium	34%	33%	40%	22%	
Large	23%	31%	20%	6%	*
Employee Numbers					
Small	23%	4%	30%	12%	
Medium	37%	49%	20%	41%	
Large	40%	47%	50%	47%	
Type of Manufacturer					
Mixed	20%	29%	10%	29%	
Exclusively no brand	46%	16%	40%	18%	
Exclusively OEM	11%	27%	10%	29%	
Exclusively ODM	9%	2%	20%	4%	
Exclusively OBM	14%	27%	20%	19%	
Sale Structure (1)					
Domestic	78%	23%	78%	7%	*
Export	22%	77%	22%	93%	*
Sale Structure (2)					
Export only	0%	27%	0%	62%	*
Export focus	0%	60%	0%	37%	
Domestic focus	100%	0%	100%	0%	*
50:50	0%	13%	0%	1%	*
Export Market					
EU	11%	33%	17%	41%	*
USA	15%	30%	6%	32%	
Japan	7%	11%	23%	10%	
China	10%	6%	2%	1%	*
ASEAN	36%	14%	36%	7%	*
Other	22%	6%	17%	8%	*
Type of Distributor					
Retailer	41%	30%	14%	24%	*
Small agent	14%	4%	22%	8%	
Trading agent	39%	51%	49%	53%	
Buying office	6%	11%	10%	14%	
Other	0%	0%	6%	2%	
Governance					
Market	26%	11%	50%	17%	
Turnkey	9%	13%	20%	28%	*
Relational	51%	56%	20%	38%	*
Captive	26%	36%	10%	24%	
Subsidiary	9%	4%	20%	8%	

	Textile Domestic	Textile Export	Clothing Domestic	Clothing Export	Remark
Upgrading Process					
No change	6%	2%	20%	3%	
Textile to garment	0%	0%	0%	0%	
Garment to textile	3%	4%	0%	3%	
Product upgrading	63%	58%	30%	55%	
Process upgrading	34%	33%	50%	41%	
Management system	49%	40%	20%	40%	
Own brand	29%	11%	10%	24%	
Challenges in Upgrading					
Not interested in upgrading	0%	0%	10%	0%	
Lack of financial support	20%	42%	10%	20%	
Lack of market knowledge	26%	44%	30%	26%	
Unsupportive government policy	34%	27%	50%	34%	
Lead firms block supplier	11%	7%	0%	11%	
International law and regulations	14%	4%	0%	14%	
No skill set	34%	22%	20%	34%	
Technology constraint	26%	51%	10%	26%	*
Lack of raw material	54%	58%	30%	54%	*
Poor infrastructure	14%	29%	30%	14%	
Invest in other business	0%	0%	20%	0%	*

*Blue highlighting denotes statistically different at 95% confidence within the sector and * denotes statistically different at 95% confidence between textile and clothing sectors*

Two textile chains

We surveyed 80 firms in this chain; 35 firms fall into the domestic chain while 45 are in the export chain. On average, firms in the domestic chain sell 78% domestically and export 22%, but none are 100% domestic. Firms in the export chain export 77% and sell 23% domestically, but 27% are 100% export. We have examined data from these firms and can reconfirm our findings from the interviews as follows:

Characteristics

The survey illustrates that there are distinctive characteristics between firms in domestic textile and export textile value chains. The export textile firms are statistically more experienced and larger relative to their counterparts. The results also confirm what we found from the interviews: that firms in the export textile chain tend to be larger with more employees and experience. On the other hand, firms in the domestic chain have less experience and are smaller.

The survey also reasserts that firms that export textiles have more experience in the market than those in the domestic market. On average, those in the export textile chain have been operating for 28.6 years compared with 20.6 years for their counterparts. This represents a statistical significance. Moreover, 44% of firms in the export chain are more than 30 years old compared with merely 17% in the domestic group. It is noteworthy that there are five firms that have more than 51 years of experience in the export textile chain. Firms in the export chain also tend to be relatively large in terms of initial investment. Figures show that 31% of the export textile firms are considered large compared with just 23% of domestic textile firms. In terms of the number of employees, only 4% of firms in the export chain have fewer than 50, 49% have between 50 and 200, and 47% have more than 200, while the figures for domestic firms are 23%, 37% and 40% respectively.

Business model

We also found that even though both chains adopt a no-brand, OEM and OBM production approach, there is a statistical difference in business models. Domestic firms choose to focus more on no-brand products, while those in the export chain position themselves as OBM and OEM. Around 46% of firms in the domestic sector are exclusively no-brand compared with only 16% in the export chain. Those in the export chain seem to focus more on exclusively OBM and OEM with 27% each, compared with 14% and 11% of the domestic chain, respectively, but there is no statistical difference between those features. Furthermore, their export markets are different, as those who export have their target markets in major global buyers; they export more than 60% to the EU and USA while domestic firms target ASEAN and other emerging markets. This is because the product quality of the export chain can meet high standards set by the EU and USA while those in the domestic chain are

unable to meet standards and regulations. Therefore, most of their products are thus only sold to developing countries. Again, this result is similar to what we found in the firm interviews.

Distribution channels

Firms in the two chains use multi-channels to distribute their products. Though it seems that export textile firms utilise more trading firms and buying offices than those in the domestic chain, firms in the domestic chain utilise retailers more than firms in the export chain; there is no statistical difference between the two sectors. However, similar to the results from firm interviews, there is a statistical difference in that domestic textile firms (14%) use more small agents than those in the export chain (4%).

Even though there are different structures between the two chains, firms in both chains have long-term relationships with their distributors. Statistically, 51% of domestic and 56% of export textile firms reflect that they have relational governance with their buyers. Export groups tend to have more captive relationships with their distributors than domestic groups, with 36% vs 26%. However, those in the domestic chain seem to face more market-driven relationships than those in the export chain without any statistical differences.

Upgrading

Statistically, firms in the domestic chain seem more likely to improve their own brand than those in the export chain. This does not mean that those in the export chain do not place any importance on branding, but the fact is that they have already established their own brand. However, there is not much distinction between other ways of upgrading in both chains. Firms in both chains would firstly begin with product upgrading followed by management system and process upgrading. Nonetheless, those in the domestic chain are trying to improve their own brand as well.

Two clothing chains

We surveyed 88 firms in the clothing chain, and are able to divide these firms into two groups. Ten were classified as domestic clothing and 78 as export clothing. On average, firms in the domestic chain sell 78% domestically while exporting only 22%, but none are 100% domestic. Firms in the export chain export 93% and sell 7% domestically, whereas 62% of them are absolute exporters. There are many distinct factors that tell us there are two chains in this sector. These differences include investment size, business model, export markets, type of distributor, governance and upgrading process.

Characteristics

It appears that firms in the domestic chain are relatively older and larger than those in the export chain. On average, firms in the domestic chain have been established for 24.4 years, while those in the export chain stand at 21.5 years. Furthermore, 50% of firms in the domestic chain are more than 30 years old compared with merely 13% of the export firms. In terms of initial investment, firms in the export chain are statistically smaller than firms in the domestic chain. Specifically, 72% of the export firms are small, i.e. investing less than US$ 1 million, compared with only 40% in the domestic chain. At the same time, 60% of firms in the domestic chain invest more than US$ 6.7 million, compared with 28% of export firms. Though firms in the export chain invest less than those in the domestic chain, there are more employees working for them. Statistics reveal that 88% of firms in the export chain employ more than 50 employees compared with 70% of firms in the domestic chain. This implies that domestic firms are using relatively higher investment but lower operating costs while those in the export chain need lower investment costs but higher working capital.

Business models

Firms in the domestic chain tend to employ exclusively production models more than those in the export chain as 90% of domestic firms have exclusive production model compared to only 71% of export firms, i.e. exclusively OEM, exclusively OBM, etc. The data also illustrate that firms in both chains focus on different business models. On the one hand, firms in the domestic chain focus on no brand and ODM. Statistics reflect that 40% are no-brand producers and 30% are ODM, compared to 31% and 17% of export firms. In addition, those in the export chain base their production on OEM, OBM and mixed models; 58% of the firms are OEM, 29% are OBM and 29% are mixed compared with 20%, 20% and 10% of domestic firms.

Furthermore, the export markets contain differences. Firms in the export chain focus on mainstream markets given that 73% of their exports go to the USA and EU, while firms in the domestic chain appeal to emerging markets with only 23% of their exports going to the USA and EU. The domestic chain export markets are also very diversified structurally, with 36% to ASEAN, 23% to

Japan, 16.5% to the EU and other countries. This implies that they have different types of product and design that need to be adapted in order to meet the different preferences of end customers.

Distribution channels

There are differences in preferred distribution channels between firms in the two chains. Firms in domestic clothing tend to have more exclusive relationships with their buyers than export firms. 60% of firms in the domestic chain have exclusive relationships with their buyers compared to 33% of firms in the export chain. Firms in the export chain seem to have mixed distribution channels but adopt international traders as their main distributors. In line with the outcome of firm interviews, firms in the domestic chain use more individual agents than firms in the export chain. Statistically, this is 22% against 8%. Meanwhile, firms in the export chain tend to use more retailers and buying offices than their counterparts, although statistical differences do not show up.

Firms in both value chains experience different dynamics statistically; firms in the export chain have more long-term relationships with their buyers than those in domestic firms as the latter would have to face market competition when they trade their products. 63% of firms in the export chain perceive that they have built good long-term relationships with their buyers compared with only 30% of firms in the domestic chain. In contrast, 50% of firms in the domestic chain believe that they have market relationships, e.g. competing on price, with their buyers compared to only 17% of firms in the export chain.

Upgrading and government policy

There seems to be a disparity on the upgrading process between firms in the two chains. Firms in the export chain tend to focus more on product upgrading (55% vs 30%), management systems (40% vs 20%) and improving their own brand (24% vs 10%), whereas firms in the domestic chain tend to focus more on process upgrading (50% vs 41%). Though there are differences between these two chains, there is no statistical difference between the data. However, there is a statistical difference on the basis that 20% of firms in the domestic chain have not upgraded anything for the past several years, but only 3% of firms in the export chain have done the same.

4.2.3 Survey findings conclusion

From the survey analysis, we can reconfirm what we found from the interviews: that the structure of the textile and clothing industry is not as simple as many policy makers believe. The industry does not operate as a single value chain as many thought. From the survey, we found that there are four value chains in Thailand, namely a) the export textile chain; b) the domestic textile chain; c) the export clothing chain; and d) the domestic clothing chain. A summary of the characteristics of firms in various chains follows as a result of the survey.

a) The export textile chain

Forty-five out of 80 textile firms are export oriented. On average, firms in the export chain export 78% and sell 22% domestically. Around 27% of firms export all of their products. The results of the survey reconfirm that firms in the export textile chain tend to be larger with more employees, more experience and operate as both OEM and OBM.

Firms in this chain seem to be more mature and have more experience than firms in other chains. The average number of years in operation is 28.6 years, which is a lot higher than that of the domestic textile producers' chain; 44% of firms in the export chain are more than 30 years old. More importantly, five companies from this group have operated for more than 50 years. This chain tends to have firms that invest heavily and use a lot of labour. It has the highest average level of investment compared with the four other chains. Fourteen companies, or 31% of all firms, made an initial investment of more than US$ 7 million. Though firms in the chain are supposed to rely on machinery and technology, they use a lot of workers as well. Only 4% of firms in the export chain have less than 50 employees, 49% between 50 and 200 employees, and 47% more than 200 people.

Besides, even though the survey shows that firms in the export chain adopt various types of manufacturing model, ranging from no-brand, OEM and OBM, a majority of the firms in the chain still focus on OEM and OBM. 61% of firms produce these types of product: 27% in exclusively OEM, 27% in exclusively OBM and 7% in mixed OEM and OBM. Though around 16% of firms produce no-brand products, this is significantly less than those in the domestic textile chain.

In terms of export markets, firms in the survey export more than 60% to the EU and USA while diversifying their markets in Japan, ASEAN and China. This is in accordance with the results of the firm interviews. However, Thailand's export statistics illustrate that Thailand only exports around 20% of its textile products to the USA and EU, while another 80% are distributed to a variety of countries.

Corresponding to the interview findings, main distributors for firms in the export chain are international trading firms, retailers and buying offices with which they have long-term relationships. 81% of the firms employ international trading firms and retailers as their distributors. Furthermore, 56% of the firms have long-term relationships, i.e. relational governance, with their traders compared with 13% and 11% that have modular and market governance, respectively.

b) The domestic textile chain

Thirty-five out of 80 surveyed firms fit into this category. This group supplies more than half of its production to both the domestic and export clothing chains in Thailand. On average, firms in the domestic chain sell 78% domestically and export 22%. None are 100% domestic.

The results of the survey reconfirm that firms in this group, though larger than those in the clothing chain, are relatively smaller and younger than those in the export chain. They produce no-brand products and export most of their products to ASEAN and emerging markets.

Similar to the results from interviews, the firms in this chain are less established and smaller than those in the export textile chain, with an average of 20.6 years in operation, which is the least among the four value chains. In terms of initial investment and number of employees, firms in this chain tend to be smaller than firms in the export textile chain, with about 43% having an initial investment less than 1 million Baht compared with 36% of the export chain, and 23% have less than 50 employees compared with 4% of their counterpart.

In the same way, firms in both export and domestic chains produce no-brand, OEM and OBM products, however while the export textile chain focuses on OEM and OBM models, firms in this chain centre around a no-brand model, with nearly half of the sample being exclusively no brand. 63% of firms in the domestic chain produce no-brand products, of which 73% are exclusively no brand. Only 14% and 11% are exclusively OBM and OEM respectively.

The export markets of domestic firms are quite diverse and focus on ASEAN and emerging markets. According to the survey, they export 35.6% to ASEAN, 21.7% to other emerging nations, 14.7% to the USA, 11.1% to the EU and 10.2% to China. This is different from the export structure of the export chain, which exports its products mainly to the USA and EU. The reason that firms in the domestic chain are not able to export more to the USA and EU is because they cannot meet the standards and quality required by those developed countries.

Firms in the domestic chain employ a variety of distribution channels. Unlike those in the export chain with its main channel through international traders, major channels for the domestic

chain are retailers and international trading firms, with around 40% of the products going through each channel. Though small agents are not the main channels for these firms, the percentage of products flowing through the channels in this chain is higher than in the export chain – 14.0% compared with 3.7%. With this difference in distribution channel structure, governance of the chain is less relational and more market oriented, though relational governance still represents the main connection model, with 51% of firms having relational governance.

c) The export clothing chain

Seventy-eight out of 88 clothing firms fall into this group. Firms in this chain export 93% of their products and only sell 7% domestically; 62% of them export 100%. The survey confirms that firms in this chain are small, labour intensive, OEM and export to mainstream markets like the EU, USA and Japan.

Firms in this chain take on small investments, but use a lot of labour. 72% of the firms are classified as small in terms of investment size, i.e. initial investment less than US$ 1 million, but around 50% of the firms employ more than 200 employees. Firms in this chain have relatively less experience than those in the domestic clothing chain. The average number of years in operation is only 21.47 years compared with 24.40 years for firms in the domestic chain. Around 71% of firms in the whole survey have been in operation for 11-30 years. Furthermore, firms in this chain are dominated by OEM; 58% are exclusively OEM or mixed OEM and OBM/ODM. However, a good number of firms are no brand and OBM, 31% are no brand and 29% are OBM.

Firms in this chain export to major global importers, such as the EU and USA. On average they export 41% to the EU and 32% to the USA. Similar to the results from the interviews, the key distributors for firms in this sector are trading agents, retailers and buying offices. 76.2% of the firms use both distributors as their main channel.

Though a long-term relationship is the major proportion of governance in this chain as suggested from the interviews, there are also various types of governance: 38% are in a long-term relationship with their distributors, 28% are modular and only 24% are captive governance.

d) The domestic clothing chain

As we have already discussed in the previous section, firms in this chain are diverse and have different characteristics. In the survey, we only focus on those identified within the list from the Ministry of Industry that have factories to produce textile and clothing products. It is therefore important to note that many small clothing boutiques are omitted from the survey.

Only 10 out of 88 clothing firms are classified into this group. On average, firms in the chain sell 78% of their products domestically and export 22%, but none of them sell 100% domestically. As in the interviews, the survey results illustrate that firms in this group are a little bit older than those in the export clothing group. They are also small- and medium-sized firms. In addition, firms in the domestic chain have been established for an average of 24.4 years compared with 21.5 years for those in export clothing. Furthermore, 50% of firms in the domestic chain have operated for more than 30 years. Only 40% of the firms are classified as small with an investment of less than US$ 1 million, whereas another 40% invest US$ 1.0 - 6.7 million. However, they hire fewer people than those in the export chain, as 30% of the firms in the group hire less than 50 employees.

Firms in the chain tend to adopt a single exclusive model; 90% of the firms only have exclusive production model. However, instead of focusing on OBM and ODM as shown in the results of the interviews, 40% of the firms are exclusively without brand, 20% are exclusively OBM, 20% are exclusively ODM and only 10% are exclusively OEM.

In contrast with the export chain, the export markets of firms in the domestic chain are very diversified, with 36% of exports going to ASEAN, 23% to Japan, 16.5% to the EU and 16.5% to other countries. This is comparable with the interview results.

Once again, firms in this chain tend to have international traders as their main distributors. Statistically, 49% employ traders as their main distributors. In line with the interviews we found that the firms in this chain prefer small agents. Numerically, 22% have small agents as their distributors compared with 7.6% of those in the export chain. 14% is distributed via retailers and 9.5% via buying offices.

Again, unlike the interviews which show they have relational governance with their buyers, around 50% of the firms surveyed have market-related governance whereas only 20% have relational governance and 20% each have turnkey and subsidiary governance.

4.3 Conclusion of overview of Thailand's textile and clothing industry structure

This chapter attempts to argue that, in contrast to a single value chain viewed by government and policy makers, the textile and clothing industry is far more complex and we need to look at different perspectives to be able to disaggregate the information. We have examined the industry information and data in various ways, including research reviews, data analysis, expert interviews, firm interviews and a survey. From the methods presented in previous sections, we can deduce that Thailand's textile and clothing industry has at least four value chains (see table 4.21). These value chains have different characteristics, export markets, distribution channels and business models. The following table summarises the features of the four chains.

Table 4.21: Characteristics of four value chains

		Domestic Textile	Export Textile	Domestic Clothing	Export Clothing
Characteristics	Years in operation	- Moderate experience	- Most experience	- High experience target mass consumer - Less experience focus niche market	- Moderate experience
	Investment size	- Mixed	- Mixed - Large firm with joint venture	- Vary depending on segment - Many small to medium firms	- Small
	Employment size	- Mixed	- Medium - Large	- Mixed	- Medium - Large
Business Model	Sale structure	- Export 20 Domestic 80	- Export 80 Domestic 20	- Export 20 Domestic 80	- Export 10 Domestic 90
	Product	- Cotton textile Synthetic textile Woven fabric Knitted fabric	- Synthetic textile Woven fabric	- Mainly woven	- Mainly knitted
	Type of manufacturer	- No brand - Mixed no brand & OEM	- OEM - OBM	- Vary depending on segment	- OEM - Some no brand & OBM
Distribution Channel	Intermediary	- Retailers - Trading agents - Small agents	- Trading agents - Retailers - Buying office	- Trading agents - Small agents - Direct	- Trading agents - Retailers - Buying office
	Governance	- Relational - Market	- Relational	- Market - Relational	- Relational - Turnkey
	Export market	- ASEAN - Other emerging	- EU - USA	- ASEAN	- EU - USA
Other	Competitiveness	- Marketing abilities - Variety of product	- Quality of product - Marketing abilities - Variety of product	- Marketing abilities	- Abilities of skilled labour - Marketing abilities - Lead time & delivery time
	Challenge for upgrading	- Lack of raw material - Lack of skill sets - Unsupportive government policy	- Lack of raw material - Technology constraint - Lack of market knowledge - Lack of financial support	- Unsupportive government policy - Poor infrastructure - Lack of raw material - Lack of market knowledge - Invest in other business	- Lack of market knowledge - Lack of financial support - Lack of raw material

4.3.1 The domestic textile chain

Firms in this chain are very important and are the basis of Thailand's textile and clothing industry. They produce key raw materials including cotton and synthetic textiles and woven and knitted fabric for clothing producers. Domestic textile firms tend to be a bit younger and have less experience in the markets than those in the export textile sector. They are also smaller in terms of capital and employee numbers, and look like they are unable to scale, though they are still larger than those in the clothing sector. Firms in this chain with no-brand products find it difficult to compete and sell their products on the international market. With low quality or standards and lack of marketing ability, firms in this chain can only export their products to ASEAN, China and emerging markets. They rely on various and mixed channels to distribute their business, including international traders, however compared with their export focus counterpart, they rely heavily on retailers and small agents to distribute their products. This is because it is more cost effective for these types of distributor rather than employing international trading firms that charge higher commission. The key for competitiveness in this chain relies on marketing ability, product design and product variety. The more different products a firm can produce, the more sales they can make. Finally, since they are the upstream of the industry, they find that lack of raw material is an important area that obstructs them from upgrading. They believe that they do not have any skill sets to compete with others. Besides, the ongoing government policy also puts emphasis on other players and sectors in the industry and does not have any proper measures to support their upgrading.

4.3.2 The export textile chain

Firms in the export textile chain have the most experience and largest sizes among the four chains. Many firms in this category were established by international partners at the beginning of the industry's development to provide yarns and fabric, particularly synthetic and woven, to support production of the parent company. Business models for firms in this chain are to produce high-quality OEM or OBM products that meet international standards. Key export products are synthetic textiles and woven fabric. Since producers in the textile sector are a small number of medium to large companies, they are able to use international trading firms like Li & Fung to sell their products to end consumers. However, since they are trying to reduce the costs incurred from middlemen, these firms are attempting to sell the products directly to retailers or buying offices. And since they have been in the market for so long, they tend to have long-term relationships with their trade intermediaries. Similar to domestic textile firms, marketing ability is an important factor in competing in the global dynamic landscape; furthermore they face global demand for a variety of products. However, since they export their products mainly to the EU and USA, the quality of

products becomes a key factor in competing too. Firms in export textiles seem to have better competitive advantages over their domestic producers, including lead time, productivity and production capacity. They also receive better support in product design from lead firms. Unlike firms in the domestic chain, firms in the export chain perceive that to be able to compete or upgrade, they need better technology, better marketing knowledge and financial support from the government. However, the export textile chain badly requires financial support for its working capital to buy a large inventory of raw material and needs to improve technology to compete.

4.3.3   The domestic clothing chain

Firms in this chain vary in characteristics and business models. This variation depends on market segmentation of the firms. Small and medium firms tend to adopt either no-brand or OBM and ODM production models and focus on niche domestic markets. This type of firm does not sell its products abroad, either because it does not intend or plan to do so, or it does not have the ability to pursue such a strategy. There are many firms like this in Thailand and they are very fragmented, however they are not classified as 'manufacturers' by the Ministry of Industry. Those firms that have strong local demand with distinctive design are also trying to expand abroad, but they lack financial support and market knowledge.

On another spectrum, there are large firms that produce mass products for the domestic market. They build their own brands or buy brand licenses from abroad. They are large scale with high experience in the domestic market. This type of firm has the ability to expand abroad, but still relies on the domestic market as a money generator. They use various channels to distribute their products, including trading firms, small agents and even direct selling. They can expand their markets to neighbouring countries first because the consumers have similar preferences to those of Thai people and it is easier for them to understand and enter such markets.

Firms in this segment feel that they lack support for upgrading from the government. Many see that government focuses on firms in export clothing firms rather than firms in this chain. Poor infrastructure and lack of raw material are also important factors affecting competitiveness. Since they focus on the domestic market, they also lack the market knowledge to compete globally. Finally, since many firms in this sector cannot compete, they use the clothing sector as a money-making machine and use the money to invest in other businesses with higher returns.

4.3.4 The export clothing chain

Firms in this segment are quite homogenous. They produce clothing to serve international markets, especially for the EU and USA. Most of them are small firms with a lot of employees. They produce mostly OEM products with some no-brand rather than OBM. Although they have a long-term relationship with their buyers, they are forced to produce with very low profit margins and need to do whatever it takes, even making a loss, to retain the relationship with those clients. Those who are able to abide by the rules and regulations will survive in this competitive market. Key for competitive advantage of these firms is their ability to find skilled labour that can help them meet high product standards and improve production processes so that they shorten or meet delivery times. They do not need to be concerned about the market. This is because trading agents, retailers and buying offices are those responsible for such marketing and selling obligations. They also tend to receive more support in production design than those in domestic clothing firms. They also tend to do more product and own-brand upgrading than those in domestic focus firms.

These four different value chains depict that there are diverse, dynamic strategic issues and problems in one industry. This whole new outlook on industry structure will be used to help us identify factors associated with growth and constraint.

The next chapter will focus on testing various theoretical variables associated with GVC and business models. We would like to see whether any of these variables can explain different performances between sectors in Thailand. And if these factors cannot explain the differences we will examine what causes differences in performance between these two industries.

Chapter 5: Theoretical test and performance analysis

The previous chapter illustrates that textile and clothing industry structure is complicated. From the data, interviews and survey, we found there are four types of value chain: domestic textile, export textile, domestic clothing and export clothing. While the last chapter attempts to identify what the industry looks like, this chapter tries to identify key factors that determine export growth between the textile and clothing sectors. Hence, this chapter tries to answer another question: '*Are variables associated with the value chain framework related to the export performance patterns associated with the two sectors of the industry?*'.

The first section of this chapter will examine variables associated with the global value chain framework, such as lead firm, governance, upgrading and manufacturing model, and whether these variables can differentiate industrial upgrading and/or growth and performance patterns of firms in each sector of the industry. We will test hypotheses from the global value chain literature against our findings using the following criteria: 1) Does the variable relate to the expected outcome? 2) Are the results distinct from other types? 3) Are the results distinct from the sample average? If the results for each variable do not pass one of the tests at 95% confidence, or if these factors are heterogeneously distributed across firms in different ways, they cannot therefore be key factors that explain the growth, decline or constraint patterns of the textile and clothing industry. The results illustrate that the main categories used in GVC analysis often do not lead to different outcome measures, especially on the tests of whether these variables are associated with improved financial performance, or distribution among sectors with aggregate performance differences. There is some consistency between categories and upgrading, but it is weak and often not exclusive to that category. These findings make GVC constructs of limited value in understanding growth and constraints of the textile and clothing industry.

Since the GVC framework does not allow us to better understand and differentiate causes of growth and constraint in the industry, in section two we will investigate the empirical data to identify a group of variables associated with the growth and performance patterns of the two sectors. We will examine growth and no-growth firms in the predetermined four types of value chain in the industry that we identified from previous chapters.

From the analysis we found that large export textile firms are a major driver for aggregate export growth. Their extremely high growth rate and large size are key contributors to textile export growth. Large firm size, together with the significant growth rate, helps offset the decrease in textile exports from non-performing export textile firms. On the other hand, a high percentage of export clothing firms have had strong revenue growth. However, the impact of revenue growth of these firms on the aggregate data is quite trivial because their revenue size and growth rate are significantly

lower than those of high-growth textile firms. Furthermore, clothing exports have a lower rate of survival in the market, which implies that many clothing firms that cannot compete and face a significant decline have a higher probability of closing down than textile firms.

However, we are unable to differentiate characteristics or business models of well- and badly performing firms. The findings show that, though there are distinctions between the two groups, they are weak and unclear. We basically see the same results and conclusions as those achieved for GVC variables. We are able to see that some firms perform better than others, but we are unable to see variables that are clearly associated with positive.

The analysis of this chapter illustrates that there is weakness in 'macro-' or 'aggregate-' level analysis. We are unable to find strong relationships and connections between variables and performance, no matter how we reclassify or recategorise variables according to various theoretical frameworks. So, rather than focus on aggregate-level analysis, government and policy makers should focus on specific characteristics, strategies or business models of firms that differentiate them from others.

5.1 Global value chain test

This section will test and examine the relationship between variables associated with the global value chain framework and the expected results i.e. upgrading, experience with lead firms and performance. The key context of GVC theory (figure 5.1) pays attention to lead firms that have authority and power to control and determine resource allocation over domestic manufacturers by asserting various governance types. These governance types, as defined by GVC, have an influence on industrial upgrading and performance (Humphrey and Schmitz, 2000). In addition, GVC advocates state that various types of industrial upgrading can lead an OEM firm to become OBM, which is usually the most profitable segment of a GVC. This section is to see whether the differential dynamics of GVC-related variables have any impact or are able to explain different export performances of Thailand's textile and clothing industry. We therefore need to test each group of variables to identify any such relationship.

Figure 5.1: Global value chain framework and relationship between variables
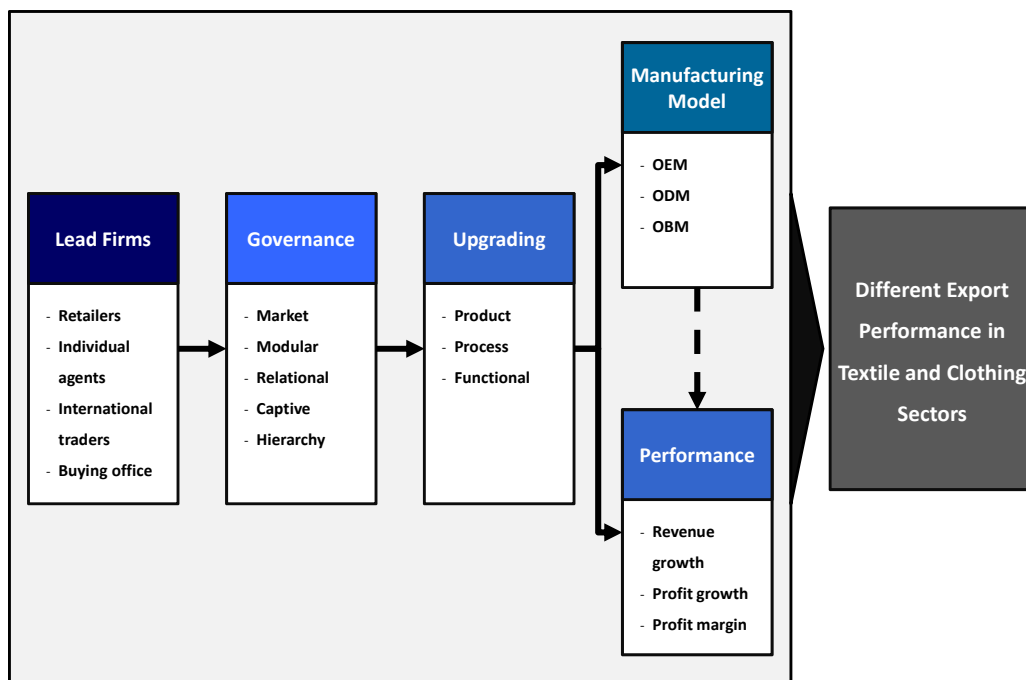
We will examine the four following categories that relate to the global value chain framework and which we believe to have an impact on performance of the industry:

1) Governance category: Hierarchy, Captive, Relational, Modular, Market
2) Intermediary category: Retail, Trading Agent, International Trader, Buying Office
3) Upgrading category: Product, Process, Functional, Mixed, No Upgrading
4) Manufacturing type category: No Brand, OEM, ODM, OBM

The research examines these categories because they are significant variables in the GVC framework. Global value chain advocates clearly state that governance has an impact on upgrading and performance; we therefore need to test such a relationship and reconfirm whether there are distinct results.

Furthermore, we will examine the intermediary category because, in GVC theory, lead firms are those that exercise power over and have relationships with domestic producers. Since GVC advocates have never stated that there is a relationship between types of lead firm and governance, the analysis will attempt to see whether there are any distinct relationships between these two key variables. We would also like to see whether firms that employ various intermediaries have different forms of upgrading or performance.

Similarly, in analysing the intermediary category, we would like to see whether any upgrading types have strong positive or negative relationships with any types of firm or performance. Furthermore, we would like to see whether there are any clear upgrading types with certain types of governance and trade intermediary.

Finally, GVC and industrial policy advocates always assume that upgrading from OEM to OBM benefits producers; we would therefore like to test whether there is any relationship between type of manufacturing and financial performance and whether any type of manufacturing has a strong relationship with other variables related to the GVC framework.

The results of these examinations will help us understand key variables that determine differential growth patterns between Thailand's textile and clothing sectors. Note that we used various financial indicators, such as revenue, profit and net profit margin, to determine performance. This is different from measures that use only revenue of firms to determine export growth. However, we are trying to explain how growth patterns on the aggregate reflect revenue growth but more revenue does not mean better performance from a firm's perspective, hence we would like to check growth using a few other measures.

5.1.1 Test methodology

Variables that have been previously collected are classified into three groups, namely internal consistency variables, export performance variables and differential dynamic variables, in order to test and analyse them for each type of governance, intermediary, upgrading or manufacturing within each category. These three groups of variables are consistent with the requirements needed to examine the global value chain theory. This research attempts to find answers to three main questions. First, whether or not firms with various governance types have various experiences with, and upgrading from, their lead firms, i.e. internal consistent analysis. Second, whether or not various governance types have any impact on performance as the GVC theory asserts, hence export performance analysis and differential dynamics are employed to examine such impacts. Finally, whether or not textiles and clothing have similar growth or export patterns, so the differential dynamic analysis is again employed to examine growth and export patterns. The details of each analysis are as follows:

1) Internal consistency variables
    - The 'internal consistency' test is simply a test to check whether the relationships described in the global value chain theory correspond to the textile and clothing industry in Thailand. The test examines different governance, trade intermediary or manufacturing types and sees how these various categories affect the distribution of different types of upgrading experience, support and limitation from lead firms, as well as challenges occurring as a result of upgrading. The 'internal consistency' is used to confirm the theorised relationship between governance, trade intermediary and manufacturing types and different kinds of upgrading experience.

2) Export performance test
    - As export performance is an important practical and policy concern, the 'export performance test' is conducted to see whether those firms that are in a more favourable setting for upgrading perform better than those that are not. This group includes tests on revenue growth, net profit growth and net profit martin. In order to identify export performance, firm samples that export more than 50% are used.
    - Only 123 export-focused firms are used for the export performance test from a total of 168 firm samples. This is because only the export performance is being focused on herein and revenue or profit of exports from the total amount cannot be segregated. Instead of using the entire survey samples that have been gathered, only firms that focus merely on export markets, i.e. those firms that export at least

50% of their products, are selected to examine the results of the export performance test and growth bias test under the differential dynamic test.

3) Differential dynamic variables

- There are two sub-tests under the differential dynamic test: the sector bias check and the growth bias check. The sector bias check looks at whether any categories have a clear sector bias in general and whether that bias, given what is understood of the reviewed literature, is towards the right sector. This confirms whether any typologies are more prone to textiles or clothing, and high export or low export.

- The second check, growth bias, is an examination of whether or not in the distribution of firms in each category there is a high percentage of 'growth firms' i.e. those that have positive growth or positive profit. We are trying to see if this category has any unique properties to capture firms that clearly contribute positively to growth, or clearly damage growth.

As in the export performance test, only 123 export-focused firms from a total of 168 samples are used, as this study is only concerned with the performance of export-focused firms in the industry.

In order to conclude what variables in each analysis have a strong association with the GVC framework, the variables should fulfil some predetermined criteria. Theoretically, for a variable to be significantly different from others it should firstly be different from the results of other groups and, secondly, different from the total average. These criteria should be sufficient to test those variables that do not have any expected results. However, the GVC framework has already determined expected results for the governance group but not for other groups, therefore, for the governance category examination, an additional expectation test is needed to test whether the variables from the governance group are comparable to what we expected. Consequently, the following three criteria are required:

1. **Typology is related to outcome expectation**: This checks whether a category is associated with the right perceptions from a theoretical point of view, meaning does it appear to be positively or negatively associated with the outcomes captured by the survey in the way expected?

2. **Result is comparatively distinct from other typologies**: This checks whether the results have any different patterns from other variables. For this category, whether or not the different sub-categories produce a different distribution of responses is

identified. It will only matter that a particular governance category has more than 50% associated with that variable if a different distribution of responses is produced, because all other sub-categories may have the same distribution, indicating that this variable is no different from the others.

3. **Result is comparatively distinct from the sample average**: This checks whether the variables are different from the distribution at aggregate level. For this category, whether each sub-category has a different distribution from the aggregate picture is identified. If a sub-category is no different from the overall distribution, the variable therefore has no distinct relationship.

An answer Yes/No is then assigned to refer to whether or not the underlying data supports the associated hypothesis. The results are compared to each criterion using various statistical and qualitative methods to derive the Yes/No result.

- In the 'Typology is related to outcome expectation' category, a percentage of the sample firms is evaluated, i.e. the distribution range or result average, to define the results as low, medium or high. If the results fall into the expected 'distribution range' or 'average', the answer will be 'Yes', otherwise it will be 'No'. Different variable groups have different distribution ranges or result averages as follows:

Table 5.1 Distribution range for testing variables

Variables Group	Evaluation Method	Low	Medium	High
Internal Consistency Test				
- Upgrading	Percentage of the sample firms	<25%	25-75%	>75%
- Support from lead firms	Results average	<0.25	0.25-0.75	>0.75
- Challenge from lead firms	Percentage of the sample firms	<25%	25-75%	>75%
Export Performance Test				
- Revenue growth	Results average	<0%	0-5%	>5%
- Net profit growth	Results average	<0%	0-5%	>5%
- Net profit margin	Results average	<0%	0-5%	>5%
Differential Dynamic Test				
- Percentage of textile firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of clothing firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of export firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample
- Percentage of well-performing firms	Percentage of the sample firms	Less than ±10% of total sample	±10% of total sample	More than ±10% of total sample

- There are three thresholds because extreme cases are included. Moreover, the thresholds are quite high because the sample size is small and as statistical tests will often not show anything with small sample sizes, at least this way we can quickly see if the distribution of the small sample exhibits any strong tendencies. We are basically interpreting distributions that fall into the 'middle' as not being subject to the expected theoretical associations.

- In the 'Result is comparatively distinct from other typologies' category, ANOVA analysis is used to identify firms that are different from other groups within the 95% confidence, i.e. the P-value is less than the significant level of 5%. If it is different, then the answer will be 'Yes', otherwise it will be 'No'. However, if the P-value is less than the significant level of 10%, a note will be written next to the result.

- In the 'Result is comparatively distinct from sample average' category, 'Welch's t-test' is used to determine the mean difference between two groups with unequal sample sizes to identify the difference between the results of the sub-category and the aggregate result. The statistical formula is as follows:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2}} \sqrt{\frac{n_1 + n_2}{n_1 n_2}}}$$

where, $\overline{X}$ is sample mean, S^2 is sample variance and n sample size.

Similarly, the difference within 95% confidence is employed. If it is different, then the answer will be 'Yes', otherwise it will be 'No'. However, if the P-value is less than the significant level of 10%, a note will be written next to the result.

However, 'Welch's t-test' cannot be used to determine the mean difference in the differential dynamic test, since the figure is a contribution percentage of each sector. As a result, only the differences between the results are examined in order to determine the significant difference. For the results to be 'comparatively distinct from other typologies', the differences between the 'absolute figure' have to be more than 20% compared to other governance types. Moreover, in order for the results to be 'comparatively distinct from sample average' the differences between 'the absolute figure of the result' and 'the absolute figure of the sample average' have to be more than 20% compared to other governance types.

For the **governance category,** in order to conclude that each variable in each sub-category supports the global value chain framework, each variable needs to fulfil the three criteria. If the 'Typology is related to outcome expectation' criterion is identified as 'No', the conclusion will be 'No', thereby there is no need to look further at the other two categories. The results will, however, be

'Maybe' if the first criterion is 'Yes' and one of the other two criteria is 'No'. The table below illustrates all possible results.

Table 5.2 Possible results from analysing three criteria

	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
1	No	No	No	No
2	No	Yes	No	No
3	No	No	Yes	No
4	No	Yes	Yes	No*
5	Yes	Yes	Yes	Yes
6	Yes	No	Yes	Maybe
7	Yes	Yes	No	Maybe
8	Yes	No	No	No

*but these results mean it supports other hypotheses

Since GVC framework does not have expected outcome for trade intermediary, upgrading or manufacturing categories, thus, the first criteria are not conducted as typologies related to outcome expectations, and only the other two criteria are tested. Each variable with only two criteria – 1) Result is comparatively distinct from other typologies and 2) Result is comparatively distinct from sample average – are tested to examine whether or not they are important and significantly different from others, using a similar method used in the governance category. Additionally, the ANOVA analysis is employed to test between various typologies, while the statistic formula is used to determine the mean difference between variables and sample average.

In order to conclude that each variable in the export performance test and differential dynamic test is important and significantly different from others, each variable needs to fulfil the two criteria, i.e. 'Yes' in those two boxes. The table below illustrates all possible results.

Table 5.3 Possible results from analysing two criteria

	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Variable is significant & different
1	No	No	No
2	Yes	No	Maybe
3	No	Yes	Maybe
8	Yes	Yes	Yes

5.1.2 Findings for the governance category

Figure 5.2: Governance analysis and key variables
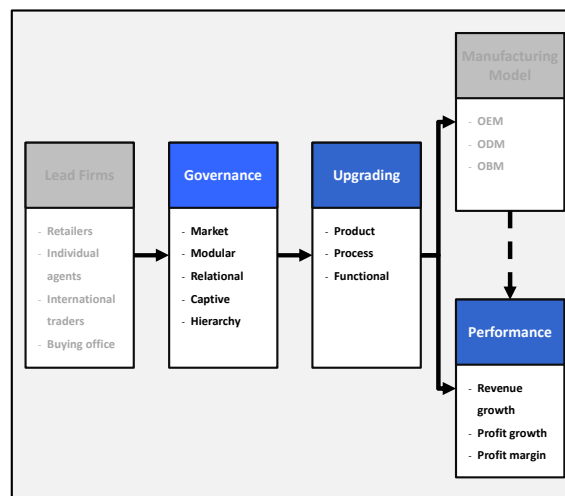
This first section of the analysis focuses on the governance category, which is the centre of attention in the GVC framework. We will focus on testing whether various governance types have an impact on upgrading, which will, in turn, have an effect on performance. Other related variables will be present and briefly discussed but we will not discuss them in detail; this is because attention will be given to governance, upgrading and performance.

Governance is defined as the relationship between producers and global buyers. Gereffi et al. (2005) have distinguished five different types of value chain: 1) market, 2) modular, 3) relational, 4) captive and 5) hierarchy. Humphrey and Schmitz (2000) argue that different forms of value chain have an influence on performance and industrial upgrading. They argue that in the **captive** value chain, local producers experience fast product and process upgrading but make little progress in functional upgrading (e.g. moving into design, branding and marketing functions in the chain). In the **market-based** value chain, process and product upgrading tend to be slower (not fostered by global buyers), but the road to functional upgrading is more open. However, the upgrading cannot be done without substantial investment from local producers and needs support from local institutions. The **relational** value chain offers ideal upgrading conditions but is the least likely for developing country producers because of the high level of (complementary) competences required. Though Humphrey and Schmitz do not mention modular chain and upgrading, other GVC advocates (Sturgeon and Lester, 2004; Sturgeon, 2002, 2003, Ozatagan, 2011) argue that firms with **modular** governance have a balanced relationship with their lead firms and are most likely to support knowledge transfer to build supplier capabilities in developing countries. This leads to not only upgrading in process-related innovation but also in design, product and process development, as well as marketing and branding.

The proposed theoretical framework implies that firms with different governance types should have different upgrading patterns and experiences with the lead firms i.e. trade intermediaries. In this section, we are therefore trying to test whether governance is associated with upgrading patterns and expected experiences. We expect to see a difference in upgrading pattern and type of upgrading experience with each type of governance; if the results are not able to describe this, we can conclude that type of governance is not a factor in differentiating upgrading. From the framework discussed we can interpret and expect the following possible outcomes that might occur from the test illustrated in the table below.

Table 5.4: Governance test results expectation[1]

	Variables	Hierarchy*	Captive	Relational	Modular	Market
Internal Consistency	Upgrading					
	- Product	- High	- High	- Medium	- Medium/High	- Low
	- Process	- High	- High	- Medium	- Medium/High	- Low
	- Functional	- Low	- Low	- Medium/High	- Low/Medium	- Low/Medium
	Support from lead firms	- Medium	- Medium	- Medium	- Low	- Low
	Challenges in upgrading	- Medium/High	- Medium/High	- Low/Medium	- Low/Medium	- Medium/High
Performance	Revenue growth	- Medium	- Medium	- High	- High	- Low
	Net profit growth	- Medium	- Medium	- High	- High	- Low
	Net profit margin	- Medium	- Medium	- High	- High	- Low
Differential Dynamic	Structure of sector	- Mixed textile & clothing	- Mixed textile & clothing	- Textile	- Textile	- Clothing
		- More export	- More export	- More export	- More export	- More domestic
		- Mid % of better performing firms	- Mid % of better performing firms	- High % of better performing firms	- High % of better performing firms	- Low % of better performing firms

*adopted hypothesis from captive governance

We expect a high percentage of sample firms to perform product and process upgrading in **captive** governance with some support from lead firms. This governance is frequently characterised by a high degree of monitoring and control by the lead firm and we expect them to set specific rules and standards for manufacturing firms. Since the core competence of these lead firms tends to be in areas outside of production, i.e. design, branding and marketing, we expect to see a medium to high percentage of firms facing blocks or limitation from lead firms in functional upgrading in this type of governance.

On the other hand, firms with **market** governance have less support from lead firms, because the arms-length transactions require little or no formal cooperation between them. We expect firms with this type of governance to focus on functional upgrading, e.g. branding and design. However, due to the large financial investment and high level of competence required, we might not see that

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[1] Refer to page 152 for definitions of High, Medium and Low

they are not able to perform a functional upgrade; hence, we only expect to see less than 75% of firms perform it. We expect to see limitation in financial support or lack of skill sets from the survey results.

In **relational** governance, where buyers and producers tend to develop long-term relationships, we expect to see a reasonable percentage of firms attempt all types of upgrading, particularly functional upgrading, since there will be no obstruction from lead firms to compete in design and branding. However, we expect to see many challenges in upgrading, especially lack of skill sets and marketing networks.

Finally, in **modular** governance, where manufacturers have a balanced relationship with their lead firms, we would probably see a medium to high percentage of firms perform product and process upgrading since these manufacturers have to upgrade themselves to provide a better service or product to the lead firms. However, we expect to see a low to moderate percentage of firms perform functional upgrading due to blocks from lead firms and reluctance of manufacturers to encroach upon the core competences of their customers.

Governance category characteristics summary

Table 5.5: Governance category characteristics summary

		Hierarchy	Captive	Relational	Modular	Market	Mixed	Total
Sample Size		7.00	37.00	61.00	20.00	16.00	27.00	168.00
Characteristics	Sector							
	% Textiles	43%	51%	57%	15%	38%	52%	48%
	% Clothing	57%	49%	43%	85%	63%	48%	52%
	Local	14%	26%	33%	21%	44%	31%	14%
	Export	86%	74%	67%	79%	57%	69%	86%
	Export Only Firms	57%	43%	30%	55%	25%	26%	36%
	Years in Operation	22.4	25.5	21.1	24.6	19.3	27.5	23.4
	Initial Investment Size							
	- Less than US$ 1 mil	71%	49%	56%	65%	69%	37%	54%
	- US$ 1 mil – US$ 6 mil	0%	32%	34%	20%	13%	33%	29%
	- More than US$ 6 mil	29%	19%	10%	15%	19%	30%	17%
	No. of Employees							
	- Less than 50	14%	5%	13%	15%	38%	7%	13%
	- 50 to 200	43%	46%	57%	30%	6%	26%	41%
	- More than 200	43%	49%	30%	55%	56%	67%	46%
Business Model	Sale Structure							
	- Export	86%	74%	67%	79%	57%	65%	69%
	- Domestic	14%	26%	33%	21%	44%	35%	31%
	Type of Manufacturer							
	- Exclusively No Brand	43%	16%	23%	50%	38%	7%	24%
	- Exclusively OEM	29%	35%	15%	25%	19%	30%	24%
	- Exclusively ODM	0%	16%	3%	0%	6%	0%	5%
	- Exclusively OBM	0%	19%	26%	10%	25%	19%	20%
	- Mixed	29%	14%	33%	15%	13%	44%	26%
Distribution Channel	Intermediary							
	- Retail	24%	20%	39%	24%	16%	25%	28%
	- Individual Agent	9%	3%	7%	6%	32%	10%	9%
	- International Trader	37%	71%	42%	57%	33%	41%	49%
	- Buying Office	1%	6%	10%	13%	18%	19%	11%
	- Other	14%	0%	0%	0%	0%	5%	1%
	Export Market							
	- EU	16%	36%	27%	42%	31%	32%	31%
	- USA	31%	26%	20%	35%	25%	32%	26%
	- Japan	27%	12%	11%	6%	3%	9%	10%
	- China	16%	3%	4%	0%	5%	6%	4%
	- ASEAN	0%	20%	18%	17%	15%	14%	17%
	- Other	10%	2%	19%	1%	21%	7%	11%

The table above illustrates the results from the survey. It illustrates the characteristics, business models, distribution channels and financial performance of various governance types. Around 36% of the firms from the survey have long-term relationships (relational) with their buyers. Another 22% have long-term but captive relationships with them. Around 10-16% of firms in the

survey have modular, market or mixed governance. Only a small proportion – 4% – have hierarchy governance i.e. a subsidiary of their traders.

At a high level, there are no strong differences between characteristics of firms with different types of governance. There are only a few outstanding, which can be identified as follows:

- **Captive** governance firms appear to be more ODM than those with other types of governance and are least 'exclusively no brand'. Key distribution channels, which are significantly different from those of other groups and the total, are through international traders.

- **Relational** governance firms appear to be mostly textile firms. It appears that firms in this group tend to be medium sized in terms of the number of employees.

- **Modular** governance firms are in the clothing sector with the highest proportion of no-brand products.

- **Market** governance firms are mostly small in terms of the number of employees. Firms with this type of governance tend to have a high percentage of distribution channels via individual agents.

- **Mixed** governance firms tend to be larger. They tend to focus on mixed manufacturing and OEM and are highly unlikely to be no-brand producers.

Governance internal consistency test results summary

Table 5.6: Governance internal consistency test results summary

Internal Consistency	Hierarchy	Captive	Relational	Modular	Market	Mixed	Total
Sample Size	7.00	37.00	61.00	20.00	16.00	27.00	168.00
Upgrading							
- Product	57%	68%	56%	35%	56%	56%	56%
- Process	43%	30%	39%	35%	25%	56%	38%
- Functional	14%	5%	34%	5%	38%	15%	21%
Support/Limits from Lead Firm							
- Finance	0.14	0.32	-0.10	0.00	0.25	-0.19	0.04
- HRD	0.57	0.00	-0.03	0.00	0.25	-0.11	0.02
- Product design	0.14	0.62	0.25	0.50	-0.06	0.37	0.35
- Manufacturing & technology	0.57	0.16	0.10	0.05	0.25	0.04	0.13
- Market information	0.43	0.49	0.15	0.00	0.44	0.15	0.24
- R&D	0.29	0.05	0.11	0.00	0.25	0.00	0.09
- Rules & regulations	0.43	-0.08	-0.10	-0.10	0.13	-0.19	-0.07
Challenges in Upgrading							
- Not interested in upgrading	0%	3%	0%	5%	6%	0%	2%
- Lack of financial support	0%	51%	34%	15%	25%	22%	32%
- Lack of market knowledge	43%	54%	51%	15%	19%	4%	36%
- Unsupportive government policy	29%	8%	36%	10%	19%	48%	27%
- Lead firms block suppliers/trading firms	14%	5%	7%	0%	13%	0%	5%
- International law and regulations (FTA, Quota)	14%	14%	3%	0%	19%	11%	8%
- No skill set	29%	30%	34%	20%	38%	19%	29%
- Technology constraint	29%	41%	44%	10%	19%	30%	34%
- Lack of raw material	14%	27%	84%	15%	0%	33%	44%
- Poor infrastructure	14%	5%	44%	0%	19%	19%	23%
- Invest in other business with higher return	0%	3%	0%	0%	6%	4%	2%

The table above presents the summary of the results of the **internal consistency** test for governance categories. The following section will examine the internal consistency of firms in various groups, to see whether upgrading type and experience correspond with expected outcomes from the GVC theoretical framework. We will go through the results by each governance type.

- *Hierarchy governance: internal consistency test results summary*

Table 5.7: Hierarchy governance: internal consistency test results summary

Internal Consistency Test	Total average	Hierarchy	Expected findings	Expected findings	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
Sample Size	168	7						
Upgrading								
- Product	56%	57%	- High	>75%	No	No	No	No
- Process	38%	43%	- High	>75%	No	No	No	No
- Functional	21%	14%	- Low	<25%	Yes	No	No	No
Support from Lead Firms								
- Finance	0.04	0.14	- Medium	0.25-0.75	No	No	No	No
- HRD	0.02	0.57	- Medium	0.25-0.75	Yes	Yes	Yes	Yes
- Product design	0.35	0.14	- Medium	0.25-0.75	No	No	No	No
- Manufacturing & technology	0.13	0.57	- Medium	0.25-0.75	Yes	Yes	No	May Be
- Market information	0.24	0.43	- Medium	0.25-0.75	Yes	No	No	No
- R&D	0.09	0.29	- Medium	0.25-0.75	Yes	No	No	No
- Rules & regulations	-0.07	0.43	- Medium	0.25-0.75	Yes	No	No	No
Challenges in Upgrading								
- Not interested in upgrading	2%	0%	- Med/High	>25%	No	No	No	No
- Lack of financial support	32%	0%	- Med/High	>25%	No	Yes	No	No
- Lack of market knowledge	36%	43%	- Med/High	>25%	Yes	Yes	No	May Be
- Unsupportive government policy	27%	29%	- Med/High	>25%	Yes	No	No	No
- Lead firms block suppliers/trading firms	5%	14%	- Med/High	>25%	No	No	No	No
- International law and regulations	8%	14%	- Med/High	>25%	No	No	No	No
- No skill set	29%	29%	- Med/High	>25%	Yes	No	No	No
- Technology constraint	34%	29%	- Med/High	>25%	Yes	No	No	No
- Lack of raw material	44%	14%	- Med/High	>25%	No	Yes	No	No
- Poor infrastructure	23%	14%	- Med/High	>25%	No	No	No	No
- Invest in other business with higher return	2%	0%	- Med/High	>25%	No	No	No	No

Though there is no such theoretical framework to predict relationships between hierarchy governance and upgrading, we believe this kind of governance is very close to captive governance. The only difference is that in hierarchy, lead firms have legislative and operational control over the manufacturers while there are no such controls in captive governance. We therefore use expected results from captive governance to examine the results from hierarchy governance and expect product and process upgrading in this type of governance with some support from lead firms. Since firms with this type of governance have some kind of upgrading and good support from lead firms, we expect that firms in this category might perform reasonably well compared with firms with other types of governance.

Upgrading

The results seem not to support what the literature says about product and process upgrading. Though a high proportion – 57% – of firms with hierarchy governance have product support from lead firms, this is significantly lower than the 75% we expected and the results are not significantly different from the results for other groups. As a result, **we cannot confirm that hierarchy governance allows firms to perform product upgrading more than firms with other forms of governance, as suggested by the literature.**

Similarly, the percentage of firms that perform process upgrading is significantly lower at 43% than the 75% we expected. Though this group has the highest percentage of firms in process upgrading, these numbers are not significantly different from other sub-categories, such as relational and modular governance at 39% and 35% respectively, or from the total average of 38%. We are therefore able to conclude that **hierarchy governance does not allow firms to perform process upgrading more than other governance types.**

In addition, we cannot conclude that firms with this type of governance perform functional upgrading less than firms with other governance types. The results show that 14% of firms in this chain perform functional upgrading, which corresponds with what we expect in this group. This is a lot higher than those with captive (5%) and modular (5%) governance, but a lot lower than those with relational (34%) and market (38%) governance. However, this is not statistically significantly different from other groups and is no different from the total result of 20%. So, again, we can confirm that **hierarchy governance firms do not perform less functional upgrading than firms with other governance types.**

Support from lead firms

In terms of support from lead firms, contrary to the belief that hierarchy governance firms have reasonable support from their parent company, the results illustrate that support from those firms is quite low or no different from that of firms with other governance types. The results seem to indicate that there is some kind of support in many areas such as HRD and manufacturing and technology. HRD support, which receives the highest score compared to other governance types, is significantly different from the average and other groups at the 95% level. At the same time, there 'may be' moderate support in manufacturing and technology, because it is significantly different from other groups but not from the average. So we can conclude that **there is moderate support in HRD from lead firms in this group but no support from other groups.**

Challenges in upgrading

As we expected, a good number of firms with hierarchy governance face challenges in upgrading, particularly lack of market knowledge. However, the variable is not significantly different from the average. Further, other variables, such as lack of skill sets, technology constraints and unsupportive government policies, are not significantly different from other sub-categories or from the average. **We therefore conclude that though some firms face challenges in upgrading, these are no more than in other governance categories.**

Hierarchy conclusion

Contrary to the expected outcome that a high percentage of firms with hierarchy governance perform product and process upgrading and a small fraction of firms focus on functional upgrading, the results for hierarchy governance firms illustrate that they are not statistically different from firms with other governance types or from the total.

The results cannot confirm that firms with this type of governance have significant support from lead firms either. The results indicate that firms in this group only receive support from lead firms in human resource development and 'may' receive support from lead firms in manufacturing and technology. There is no strong indication that they receive stronger or weaker support in finance, product design, market information, R&D and rules and regulations than firms with other governance types.

Finally, the results do not indicate any difference in challenges in upgrading from firms in other groups.

- *Captive governance: internal consistency test results summary*

Table 5.8: Captive governance: internal consistency test results summary

Internal Consistency Test	Total average	Captive	Expected findings	Expected findings	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
Sample Size	168	37						
Upgrading								
- Product	56%	68%	- High	>75%	No	Yes	No	No
- Process	38%	30%	- High	>75%	No	Yes	No	No
- Functional	21%	5%	- Low	<25%	Yes	Yes	Yes	Yes
Support from Lead Firms								
- Finance	0.04	0.32	- Medium	0.25-0.75	Yes	Yes	Yes	Yes
- HRD	0.02	0.00	- Medium	0.25-0.75	No	Yes	No	No
- Product design	0.35	0.62	- Medium	0.25-0.75	Yes	Yes	No	May Be
- Manufacturing & technology	0.13	0.16	- Medium	0.25-0.75	No	No	No	No
- Market information	0.24	0.49	- Medium	0.25-0.75	Yes	Yes	No	May Be
- R&D	0.09	0.05	- Medium	0.25-0.75	No	No	No	No
- Rules & regulations	-0.07	-0.08	- Medium	0.25-0.75	No	No	No	No
Challenges in Upgrading								
- Not interested in upgrading	2%	3%	- Med/High	>25%	No	No	No	No
- Lack of financial support	32%	51%	- Med/High	>25%	Yes	Yes	Yes	Yes
- Lack of market knowledge	36%	54%	- Med/High	>25%	Yes	Yes	Yes	Yes
- Unsupportive government policy	27%	8%	- Med/High	>25%	No	Yes	Yes	No
- Lead firms block suppliers/trading firms	5%	5%	- Med/High	>25%	No	No	No	No
- International law and regulations	8%	14%	- Med/High	>25%	No	No	No	No
- No skill set	29%	30%	- Med/High	>25%	Yes	No	No	No
- Technology constraint	34%	41%	- Med/High	>25%	Yes	Yes	No	May Be
- Lack of raw material	44%	27%	- Med/High	>25%	Yes	Yes	No	May Be
- Poor infrastructure	23%	5%	- Med/High	>25%	No	Yes	Yes	No
- Invest in other business with higher return	2%	3%	- Med/High	>25%	No	No	No	No

From the theoretical framework, we expect to see product and process upgrading in **captive** governance with some support from lead firms, particularly on setting up specific rules and standards in manufacturing firms. However, we expect to see a block or limitation from lead firms in functional upgrading in this type of governance; this is because the core competence of these lead firms tends to be in areas outside of production, i.e. design, branding and marketing.

Upgrading

The findings do not support Humphrey and Schmitz's (2000) argument that in the captive value chain, local producers experience fast product and process upgrading. The results illustrate that 68% of captive governance firms perform product upgrading; this number is the highest among all groups, but is lower than expected at 75%. Furthermore, compared with the results from other sub-categories and from the average, there are no significant differences at the 95% and 90% levels. So we can conclude that **captive governance does not allow a higher percentage of firms to perform product upgrading than other governance types.**

The results are the same for process upgrading. They show that 30% of captive governance firms conduct process upgrading. The results are not statistically different from other sub-categories and averages. We therefore conclude that **captive governance does not allow a higher number of firms to perform process upgrading than other governance types.**

However, the results support the proposition that captive governance firms have less functional upgrading than those with other governance types. The results show that only 5% of firms in this category have performed a functional upgrade in the last few years. This is the smallest percentage compared to all other sub-groups, apart from modular governance. The results also illustrate a significant difference from the average of 21%. We can therefore conclude that **captive governance firms have less functional upgrade than those in other sub-categories.**

Support from lead firms

We are also able to conclude that there is some support from lead firms in this type of governance. Firms with captive governance have significant support from lead firms, including financial (0.32), and may have significant support in product design (0.62) and market information (0.24). These variables achieve the highest results compared with other groups. Statistically, these figures are significantly different from those of other groups and/or from the average. In fact, this type of governance receives most support from lead firms compared to other groups. We therefore conclude that **the results support the theoretical framework that firms with captive governance may receive some support from lead firms.**

Challenges in upgrading

In addition, we see signs of challenges and limitations for firms with captive governance in upgrading. They reasonably lack financial support and market knowledge allowing them to upgrade to another level. 54% and 51% of firms with this type of governance identify that they have upgrading challenges in terms of market knowledge and financial support. These are the highest percentages among all governance types and are significantly different from those of other groups, particularly

those with modular governance. Furthermore, these two figures are well above the average and are significantly different from the average at the 95% level. We can therefore conclude that **a higher percentage of firms with captive governance face challenges in financial support and market knowledge in comparison with firms that have other governance types.**

Captive conclusion

From the survey, we found evidence that supports the theoretical framework that a low percentage of firms with captive governance have functional upgrading; this number is particularly low compared to that of firms with relational governance. However, the results also indicate that, contrary to the theory, the percentage of captive governance firms that perform product and process upgrading is no higher than those in other sub-categories.

Furthermore, we found that firms with captive governance receive some support from lead firms, such as finance, production design and market information. We did not, however, find any difference in other types of support from lead firms.

Finally, though firms with this type of governance receive good support from lead firms, many captive governance firms still face many key challenges in upgrading, including lack of financial support and market knowledge.

- *Relational governance: internal consistency test results summary*

Table 5.9: Relational governance: internal consistency test results summary

Internal Consistency Test	Total average	Relational	Expected findings	Expected findings	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
Sample Size	168	61						
Upgrading								
- Product	56%	56%	- Medium	25%-75%	Yes	No	No	No
- Process	38%	39%	- Medium	25%-75%	Yes	No	No	No
- Functional	21%	34%	- Med/High	>25%	Yes	Yes	Yes	Yes
Support from Lead Firms								
- Finance	0.04	-0.10	- Medium	0.25-0.75	No	Yes	No	No
- HRD	0.02	-0.03	- Medium	0.25-0.75	No	Yes	No	No
- Product design	0.35	0.25	- Medium	0.25-0.75	Yes	Yes	No	May Be
- Manufacturing & technology	0.13	0.10	- Medium	0.25-0.75	No	No	No	No
- Market information	0.24	0.15	- Medium	0.25-0.75	No	Yes	No	No
- R&D	0.09	0.11	- Medium	0.25-0.75	No	No	No	No
- Rules & regulations	-0.07	-0.10	- Medium	0.25-0.75	No	No	No	No
Challenges in Upgrading								
- Not interested in upgrading	2%	0%	- Low/Med	0-75%	Yes	No	No	No
- Lack of financial support	32%	34%	- Low/Med	0-75%	Yes	No	No	No
- Lack of market knowledge	36%	51%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Unsupportive government policy	27%	36%	- Low/Med	0-75%	Yes	Yes	No	May Be
- Lead firms block suppliers/trading firms	5%	7%	- Low/Med	0-75%	Yes	No	No	No
- International law and regulations	8%	3%	- Low/Med	0-75%	Yes	Yes	No	May Be
- No skill set	29%	34%	- Low/Med	0-75%	Yes	No	No	No
- Technology constraint	34%	44%	- Low/Med	0-75%	Yes	Yes	No	May Be
- Lack of raw material	44%	84%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Poor infrastructure	23%	44%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Invest in other business with higher return	2%	0%	- Low/Med	0-75%	Yes	No	No	No

Humphrey and Schmitz (2000) put forward that the relational value chain offers ideal upgrading conditions but is least likely to be employed by developing country producers because of the high level of (complementary) competences required. The proposition implies that relational governance firms should perform various types of upgrading since they are very close to buyers and share much information between them.

Upgrading

We found that the percentage of firms that conduct product and process upgrading in relational governance are not statistically different from those with other governance types. Though 56% of relational governance firms say they have performed product upgrading in the recent years, it is less than those with hierarchy (57%) and captive (68%) governance. Similarly, in process upgrading, 39% of relational governance firms have performed such upgrading compared to 43% of those with hierarchy and 35% with modular governance. Therefore, we can conclude that **relational governance does not allow a moderate percentage of firms to perform process and product upgrading, compared with firms with other governance types**.

In contrast, a reasonable percentage of relational governance firms perform functional upgrading compared with those with other governance types. One of the highest percentages of firms with this type of governance – 34% – develop their own brand, compared with the average of 21%. This is higher than hierarchy (14%), captive (5%) or modular (5%) governance firms. This is also much higher than the average of 21%. The results are also statistically different from the average at the 95% level. We can therefore conclude that **a higher percentage of firms perform functional upgrading in relational governance, compared with other groups.**

Support from lead firms

Furthermore, we see no difference in terms of support from lead firms; this is not what we expect. Relational governance firms only receive low to mediocre levels of support from lead firms in market information (0.15) and manufacturing and technology (0.10). However, the levels of support are lower than with other governance types and lower than the average. In addition, we see some signs of limitation in finance (-0.1) and HRD (-0.03) but higher R&D support (0.11) than average (0.09). However, the statistical analysis illustrates that there is no significant variable difference between relational governance firms and those with other governance types and no significant difference from the average. The results only illustrate that there 'may be' some support in product design from lead firms. So, contrary to the literature, the results illustrate that **lead firms provide no support for relational governance firms in some areas; they only suggest that there may be some support in product design in this group.**

Challenges in upgrading

The results illustrate that a key challenge for firms with this type of governance is lack of raw material (84%), lack of market knowledge (51%) and poor infrastructure (44%). Unlike firms with other types of governance, a high percentage of firms with this type of governance see a lack of raw material and poor infrastructure as key challenges in upgrading. Though we expect a low percentage of firms to face a challenge from lack of raw material, the results illustrate that a very high percentage

of firms confront the challenge, with 84% of firms seeing this variable as a key challenge. This is the highest among all governance types and is significantly different from other groups and from the average at the 95% level. Poor infrastructure is another challenge that relational governance firms state is an important factor. Though this is not as high as lack of raw material it is, again, highest among all governance types and significantly different from other groups and from the average at the 95% level. Lack of market knowledge is also another challenge for relational governance firms; it is the second highest score behind captive governance. However, it is again significantly different from other groups and from the average at the 95% level. One interesting result illustrates that unsupportive government policy may be a key challenge in upgrading but it is not significantly different from the average. So we can conclude that **a high percentage of relational governance firms face challenges in upgrading from lack of raw material, poor infrastructure and lack of market knowledge.**

Relational conclusion

Though relational governance firms have a high proportion of products and a medium level of process upgrading, these figures are not significantly different from the results of other groups. We therefore conclude that relational governance does not allow many firms to perform process and product upgrading, compared with firms with other types of governance. However, we have found that relational governance allows a reasonable number of firms to perform functional upgrading compared with other governance types.

However, contrary to the literature, the data only suggest that there may be some support in product design in this group, the results illustrate that there is no support from lead firms for relational governance firms in other areas.

In addition, relational governance firms face challenges in upgrading from lack of raw material, poor infrastructure and lack of market knowledge.

- *Modular governance: internal consistency test results summary*

Table 5.10: Modular governance: internal consistency test results summary

Internal Consistency Test	Total average	Modular	Expected findings	Expected findings	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
Sample Size	168	20						
Upgrading								
- Product	56%	35%	- Med/High	>25%	Yes	Yes	Yes	Yes
- Process	38%	35%	- Med/High	>25%	Yes	No	No	No
- Functional	21%	5%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
Support from Lead Firms								
- Finance	0.04	0.00	- Low	0-0.25	Yes	No	No	No
- HRD	0.02	0.00	- Low	0-0.25	Yes	Yes	Yes	Yes
- Product design	0.35	0.50	- Low	0-0.25	No	Yes	Yes	No
- Manufacturing & technology	0.13	0.05	- Low	0-0.25	Yes	Yes	Yes	Yes
- Market information	0.24	0.00	- Low	0-0.25	Yes	Yes	Yes	Yes
- R&D	0.09	0.00	- Low	0-0.25	Yes	No	No	No
- Rules & regulations	-0.07	-0.10	- Low	0-0.25	Yes	No	No	No
Challenges in upgrading								
- Not interested in upgrading	2%	5%	- Low/Med	0-75%	Yes	No	No	No
- Lack of financial support	32%	15%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Lack of market knowledge	36%	15%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Unsupportive government policy	27%	10%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Lead firms block suppliers/trading firms	5%	0%	- Low/Med	0-75%	Yes	No	No	No
- International law and regulations	8%	0%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- No skill set	29%	20%	- Low/Med	0-75%	Yes	No	No	No
- Technology constraint	34%	10%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Lack of raw material	44%	15%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Poor infrastructure	23%	0%	- Low/Med	0-75%	Yes	Yes	Yes	Yes
- Invest in other business with higher return	2%	0%	- Low/Med	0-75%	Yes	No	No	No

GVC advocates (Sturgeon and Lester, 2004; Sturgeon, 2002, 2003; Ozatagan, 2001) argue that modular governance firms have a balanced relationship with their lead firms and are most likely to support knowledge transfer to build supplier capabilities in developing countries. This leads to not only upgrading in process-related innovation but also in design, product and process development, as well as in marketing and branding. We therefore expect to see high levels of product and process upgrading but low levels of functional upgrading.

Upgrading

The results appear to show that there might be a mediocre percentage of firms that perform product and process upgrading. However, the figures are well below average, while the percentage of modular governance firms that perform product upgrading (35%) is the lowest. This suggests that modular governance does not allow a high percentage of firms to perform product upgrading. Moreover, the upgrading result is different from those of firms with other governance types and from the average. We therefore conclude that **modular governance does not allow a high percentage of firms to perform product upgrading.**

Furthermore, the results suggest that modular governance firms have low levels of functional upgrading compared with firms in other groups. They illustrate that there is a very small proportion (5%) of those with modular governance that have performed functional upgrading in recent years. This is equal to those with captive governance and remains one of the lowest among all governance types. This figure is statistically very different from that of other groups, especially those with relational governance and from the average. We therefore suggest that **there is low levels of functional upgrading for modular governance firms.**

Support from lead firms

The low level of upgrading could be due to a lack of support from lead firms. The data illustrate that firms with this type of governance have lower support in all areas apart from product design. **We can conclude that lead firms provide less support to firms with this type of governance in HRD, market information and manufacturing & technology.** This is because there is statistical difference at the 95% level between modular governance and other governance types and statistical difference at the 95% level between modular governance and the average.

Challenges in upgrading

However, as in the theoretical framework, a low percentage of firms in this group face challenges from lead firms in modular governance. The data illustrate that a small percentage of firms in this chain see challenges in upgrading. We can conclude that **a small number of modular governance firms face challenges in lack of raw material, international law and regulations, technology constraints and poor infrastructure**, since there are significant differences between modular governance and other governance types at the 95% level or between modular governance and the average.

Modular conclusion

Instead of a high percentage of firms performing product and functional upgrading in this group, the results appear to show that not many firms carry out such upgrading. The figures are well below average; the percentage of firms that conduct product and functional upgrading is one of the lowest and process upgrading is close to other types. This suggests that participation in functional and product upgrading is low in firms with this type of governance.

Furthermore, the results illustrate that there are low levels of support from lead firms for firms with this type of governance. This includes HRD, market information and manufacturing and technology support.

Finally, firms in modular governance do not face many challenges; a low percentage of firms face the challenges of lack of material, poor infrastructure, lack of financial support, lack of market knowledge, and technology constraint from upgrading.

- *Market governance: internal consistency test results summary*

Table 5.11: Market governance: internal consistency test results summary

Internal Consistency Test	Total average	Market	Expected findings	Expected findings	Typology is related to outcome expectation	Result is comparatively distinct from other typologies	Result is comparatively distinct from sample average	Support theoretical framework
Sample Size	168	16						
Upgrading								
- Product	56%	56%	- Low	0-25%	No	No	No	No
- Process	38%	25%	- Low	0-25%	Yes	No	No	No
- Functional	21%	38%	- Low/ Medium	0-75%	Yes	Yes	No	May Be
Support from Lead Firms								
- Finance	0.04	0.25	- Low	0-0.25	Yes	No	No	No
- HRD	0.02	0.25	- Low	0-0.25	Yes	No	No	No
- Product design	0.35	-0.06	- Low	0-0.25	Yes	Yes	No	May Be
- Manufacturing & technology	0.13	0.25	- Low	0-0.25	Yes	No	No	No
- Market information	0.24	0.44	- Low	0-0.25	No	Yes	No	No
- R&D	0.09	0.25	- Low	0-0.25	Yes	No	No	No
- Rules & regulations	-0.07	0.13	- Low	0-0.25	Yes	No	No	No
Challenges in Upgrading								
- Not interested in upgrading	2%	6%	- Med/High	>25%	No	Yes	No	No
- Lack of financial support	32%	25%	- Med/High	>25%	No	No	No	No
- Lack of market knowledge	36%	19%	- Med/High	>25%	No	Yes	No	No
- Unsupportive government policy	27%	19%	- Med/High	>25%	No	Yes	No	No
- Lead firms block suppliers/trading firms	5%	13%	- Med/High	>25%	No	No	No	No
- International law and regulations	8%	19%	- Med/High	>25%	No	Yes	No	No
- No skill set	29%	38%	- Med/High	>25%	Yes	No	No	No
- Technology constraint	34%	19%	- Med/High	>25%	No	No	No	No
- Lack of raw material	44%	0%	- Med/High	>25%	No	Yes	Yes	No
- Poor infrastructure	23%	19%	- Med/High	>25%	No	Yes	No	No
- Invest in other business with higher return	2%	6%	- Med/High	>25%	No	Yes	No	No

The theoretical framework suggests that market governance firms tend to be slower in process and product upgrading because they are not fostered by global buyers, but the road to functional upgrading is more open. However, the upgrading cannot be done without substantial investment from local producers and needs support from local institutions.

Upgrading

The findings do not support such a theoretical framework. First, we found that in 56% of market governance firms, this is no better or worse than the results from firms with other governance types such as hierarchy or relational. Nor is there any significant difference from the total average. So we can conclude that **market governance does not allow a low percentage of firms to perform product upgrading.**

In addition, even though the results illustrate that market governance firms have one of the lowest percentages in process upgrading (25%) among all governance types, the statistical analysis

does not indicate a significant difference from other governance types or from the sample average. We therefore conclude that **market governance does not allow a low percentage of firms to perform process upgrading.**

Moreover, there is a sign that market governance firms perform functional upgrading; 38% of firms with this type of governance have performed it in recent years. This is the highest percentage among all governance types. However, the statistical analysis only indicate a significant difference from firms with other governance types but not significant difference from the sample average. We therefore conclude that **there may be a low-moderate percentage of market governance firms that perform functional upgrading**.

Support from lead firms

The low degree of upgrading could stem from less support from lead firms. The data illustrate that market governance firms receive less support from lead firms. The respondents answered that when they receive support from lead firms, it includes financial (0.25), HRD (0.25), manufacturing and technology (0.25), R&D (0.25) and rules and regulations (0.13) support. Moreover they provide reasonable support in market information (0.44). However, there is no statistical difference in these variables between market governance firms and other governance types or between market governance firms and the total average. So, we can conclude that there is no less support from lead firms for market governance firms. However, the figure illustrates that support in product design from lead firms may be limited. The result for market governance firms (-0.06) is the lowest among all governance types. It is also significantly different from other governance types but not from the average. We therefore conclude that **product design may be limited in market governance firms.**

Challenges in upgrading

Finally, the results illustrate no difference in upgrading challenges between market governance firms and those with other types of governance. A small percentage of market governance firms say they face challenges in upgrading. However, these variables are not statistically different from other governance types or from the average. Firms in this group do not indicate lack of raw material as a key challenge in upgrading; this is significantly different from other groups and from the average. We therefore conclude that **a low percentage of market governance firms see lack of raw material as a challenge in upgrading but we cannot accept that moderate or high percentage firms face other challenges in upgrading.**

Table 5.12: Internal consistency test results conclusion for the governance category

Internal Consistency	Hierarchy		Captive		Relational		Modular		Market	
	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result
Sample Size	7		37		61		20		16	
Upgrading										
- Product	- High	No	- High	No	- Medium	No	- Med/High	Yes	- Low	No
- Process	- High	No	- High	No	- Medium	No	- Med/High	No	- Low	No
- Functional	- Low	No	- Low	Yes	- Med/High	Yes	- Low/Med	Yes	- Low/ Medium	May Be
Support/Limits from Lead Firm										
- Finance	- Medium	No	- Medium	Yes	- Medium	No	- Low	No	- Low	No
- HRD	- Medium	Yes	- Medium	No	- Medium	No	- Low	Yes	- Low	No
- Product design	- Medium	No	- Medium	May Be	- Medium	May Be	- Low	No	- Low	May Be
- Manufacturing & technology	- Medium	May Be	- Medium	No	- Medium	No	- Low	Yes	- Low	No
- Market information	- Medium	No	- Medium	May Be	- Medium	No	- Low	Yes	- Low	No
- R&D	- Medium	No	- Medium	No	- Medium	No	- Low	No	- Low	No
- Rules & regulations	- Medium	No	- Medium	No	- Medium	No	- Low	No	- Low	No
Challenges in Upgrading										
- Not interested in upgrading	- Med/High	No	- Med/High	No	- Low/Med	No	- Low/Med	No	- Med/High	No
- Lack of financial support	- Med/High	No	- Med/High	Yes	- Low/Med	No	- Low/Med	Yes	- Med/High	No
- Lack of market knowledge	- Med/High	May Be	- Med/High	Yes	- Low/Med	Yes	- Low/Med	Yes	- Med/High	No
- Unsupportive government policy	- Med/High	No	- Med/High	No	- Low/Med	May Be	- Low/Med	Yes	- Med/High	No
- Lead firms block suppliers/trading firms	- Med/High	No	- Med/High	No	- Low/Med	No	- Low/Med	No	- Med/High	No
- International law and regulations (FTA, Quota)	- Med/High	No	- Med/High	No	- Low/Med	May Be	- Low/Med	Yes	- Med/High	No
- No skill set	- Med/High	No	- Med/High	No	- Low/Med	No	- Low/Med	No	- Med/High	No
- Technology constraint	- Med/High	No	- Med/High	May Be	- Low/Med	May Be	- Low/Med	Yes	- Med/High	No
- Lack of raw material	- Med/High	No	- Med/High	May Be	- Low/Med	Yes	- Low/Med	Yes	- Med/High	No
- Poor infrastructure	- Med/High	No	- Med/High	No	- Low/Med	Yes	- Low/Med	Yes	- Med/High	No
- Invest in other business with higher return	- Med/High	No	- Med/High	No	- Low/Med	No	- Low/Med	No	- Med/High	No

*indicates 90% level of confidence that the variable is significantly different from the same variable in other governance types

Governance category: internal consistency test results conclusion

The conclusion of the internal consistency test results for the governance category is shown in the above table. We clearly see that **only modular governance differentiates between the upgrading experience and perceptions on upgrading but other governance types do not differentiate between the upgrading experience and perceptions on upgrading. We see that different governance types generate little difference in upgrading and their experience with lead firms. Though there are some areas, particularly in functional upgrading and support from lead firms, that seem to be distinctive, they are neither strong nor unique to that type of governance.** The conclusion of the findings is as follows:

The survey results suggest that there are no statistical differences in product and process upgrading among various governance types. On average, 56% and 38% of all types of firm perform product and process upgrading, respectively. All types of firm tend to focus on product upgrading since it is the easiest and can see the impact on their sales immediately. Only firms in modular governance have significantly less focus on product upgrading. However, firms are still unwilling to commit or spend high investment on process upgrading to cut costs or increase efficiency. Note that only 35% of modular governance firms focus on product upgrading; this is rather low, but not statistically different to other governance types. This is because modular governance firms only receive product specifications or orders from buyers and only focus on the production process (see table 5.12).

However, **there could be differences in functional upgrading between captive, relational and modular governance firms.** We see that a low percentage of captive and modular governance firms tend to have functional upgrading, which confirms the GVC framework. This is because, as claimed by Humphrey and Schmitz (2000), lead firms with these governance types tend to have core competence in design, branding and marketing, and tend to limit firms in this chain to performing functional upgrade. At the same time, a moderate percentage of relational governance firms perform functional upgrading. Though these firms seem to have room to perform functional upgrading, they tend to lack many skills and the financial support to do it. This could be because they have had too much security and comfort with their lead firm for too long.

There **may be some statistical difference in terms of support and limitation from modular lead firms but there is no statistical difference** for relational and market governance firms, while hierarchy and captive governance firms seem to receive better support from them. The results support the view of global value chain advocates that we should see some

support from lead firms for captive governance firms. This could be because hierarchy and captive governance firms have a very close operation and probably financial relationship with them. Lead firms therefore have strong interest in and support for firms in these groups. However, contrary to what GVC advocates anticipate, we are unable to see modest support for relational governance firms but less support for modular or market governance firms. We see low levels of support in relational and modular groups and some modest support in the market group, though not significantly statistically different. This could be because firms with relational or modular governance are already equipped with better skill sets and capabilities than those with market governance, therefore there is more support for market governance firms (see table 5.12).

Finally, there might be some areas in which firms with different governance types face distinctive challenges in upgrading. It looks as though captive governance firms face more challenges in finance and market information than those in other groups, while modular governance firms may face lower challenges in similar areas. However, **we cannot see statistical differences in terms of challenges in upgrading from different governance types.** All firms seem to face similar challenges in upgrading; these include lack of raw material, lack of market knowledge, technology constraints and lack of financial support.

The idea of GVC theory is that governance has an impact on upgrading and experience with lead firms, which then has further impact on performance. The results illustrate that we can dismiss the idea that governance type has an impact on upgrading and experience with lead firms, which are sources of differential performance. We are unable to see different upgrading and experiences in distinct governance types. By denying the first part of the GVC theory that governance is associated with upgrading, we can disregard the second half, i.e. governance has an impact on performance. However, just to reconfirm these findings, we will examine the direct relationship between governance and performance in the next section. We will also try to examine the relationship between governance and performance in both the textile and clothing sectors.

Export performance test

Though the GVC framework proposes that different governance types have impact on upgrading and performance, it does not clearly explain or illustrate the relationship between governance and performance. This section attempts to identify such a relationship. However, we need to assume that firms with governance that have a better setting for the support of upgrading perform better than those that do not. We therefore have the following hypothesis (see table 5.4):

a) **Modular and relational governance** firms should **perform best** among all governance types. This is because modular governance firms tend to have high levels of product and process upgrading, while having the freedom to perform functional upgrading. They should also have low-level challenges from lead firms in upgrading.

b) **Hierarchy and captive governance** firms should **perform reasonably well** as they have high levels of product and process upgrading but low levels of functional upgrading. Though they receive strong support from lead firms, firms with these governance types also face many challenges in upgrading.

c) **Market governance** firms should be the **worst performers**. This is because they face market competition with low levels of product, process and functional upgrading. They also receive low to no support from lead firms and face high competition and challenges in upgrading.

In order to test whether various governance types have a relationship with export performance, we only use those samples that export more than 50%. This is because we cannot separate their revenue and profit figures into domestic and export. We therefore only use those that have high export value as a proxy to this analysis. The table below illustrates the results.

Table 5.13: Governance: export performance results summary

Export Performance	Hierarchy	Captive	Relational	Modular	Market	Mixed	Total
Sample Size	6	31	44	16	7	19	123
Revenue Growth							
- Mean	63%[AB]	-3%[A]	-3%[A]	3%[A]	27%	-8%[A]	2%
- Median	4%	0%	-2%	2%	-14%	-6%	-2%
- Min	-15%	-32%	-41%	-38%	-37%	-50%	-50%
- Max	258%	33%	79%	47%	300%	11%	300%
Net Profit Growth							
- Mean	-153%	-14477%	-749%	22%	-2057%	-261%	-4079%
- Median	-44%	0%	0%	2%	-137%	15%	0%
- Min	-671%	-448647%	-25860%	-171%	-11072%	-6274%	-448647%
- Max	23%	3526%	462%	464%	411%	1203%	3526%
Net Profit Margin							
- Mean	-25%	0%	-8%	1%	-21%	-3%	-5%
- Median	-4%	0%	0%	1%	-3%	0%	0%
- Min	-109%	-13%	-335%	-5%	-120%	-22%	-335%
- Max	6%	14%	19%	7%	0%	4%	19%

A = significantly different from other typologies at 95% level
B = significantly different from sample average at 95% level

At first glance, we notice different performances among firms with different governance types.

In terms of revenue growth, it seems that hierarchy and modular governance firms tend to have higher growth than other groups. At the same time, those with captive, relational and mixed governance have negative revenue growth. In terms of profit growth and profit margin, modular governance firms appear to perform better than others. On average, firms in the modular group have positive profit growth of 22% while others have large negative growth, and firms in the modular group have positive profit margin while other groups have negative margin.

However, we see that the financial results for each type of governance are very scattered and varied, hence a firm's performance does not depend on type of governance. For example, in the captive chain a firm has revenue growth of 33% while another has -32%. Similarly, a firm in the relational group has revenue growth of 79% while another has -41%. If there is a relationship between governance and performance, we should be able to see that a group of well-performing firms gathers under a particular type of governance and another group of badly performing firms is concentrated under another type. Moreover, the significant test at the 95% and 90% levels illustrates that there is no significant difference between type of governance and governance with the total average. This means we cannot confirm the hypothesis that there is a relationship between financial performance and various governance types.

Furthermore, the range between the maximum and minimum of each variable in each type of governance is huge. This again suggests that the opportunity to upgrade and obtain support from lead firms does not lead to better performance of firms with different types of governance. Hence, **we cannot find a relationship between governance and performance.**

Governance category: export performance test results conclusion

Table 5.14: Export performance conclusion for governance category

Export Performance	Hierarchy		Captive		Relational		Modular		Market	
	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result	Expected Findings	Result
Sample Size	6		31		44		16		7	
Performance										
- Revenue growth	- Medium	Maybe High	- Medium	Maybe Medium	- High	Maybe Low	- High	Maybe Medium	- Low	Maybe High
- Net profit growth	- Medium	No	- Medium	No	- High	No	- High	No	- Low	No
- Net profit margin	- Medium	No	- Medium	No	- High	No	- High	No	- Low	No

The results reconfirm what we found earlier that **different governance types do not differentiate firm performance**, particularly in profit growth and profit margin. We see that the financial results for each type of governance are very scattered and varied, hence a firm's performance does not depend on type of governance. If there is a relationship between governance and performance, we should be able to see that a group of well-performing firms gathers under a particular type of governance and another badly performing group of firms is concentrated under another type of governance (see table 5.14).

The results have further dismissed the GVC theory that "governance has an impact on upgrading and experience with lead firms and has further impact on performance". This could also imply that governance is not a key variable that differentiates performance in the textile and clothing sectors. However, we will examine such a relationship to reconfirm the hypothesis in the following section.

Governance category: differential dynamic test

This test is conducted to confirm whether any type of governance is likely to comprise clothing vs textile, or high export vs low export, or high growth vs low growth, etc. The GVC framework does not propose any relationship in this area, however we can imply the following possible relationship between governance and sector or export structure.

From the previous chapter we found that export of textiles is growing faster than that of clothing, and those in the export sector are doing better than those who focus on the domestic sector. The theory suggests that modular and relational governance structures have the best upgrading potential. We might therefore see more textile or export in modular or relational governance firms. Furthermore, since lead firms in market governance provide the least support and such a structure does not encourage upgrading, we expect to see domestic-focused textile or clothing firms in this structure. We also see a good mix of export clothing and textiles in hierarchy and captive governance firms, since they provide a well-balanced environment for manufacturers to upgrade.

We therefore have the following hypothesis (see table 5.4):

a) **Modular and relational governance** firms should be **textile rather than clothing firms,** particularly as we expect to see those textile firms that focus on export.

b) **Hierarchy and captive governance** firms should **be clothing firms that focus on export.**

c) **Market governance** firms should be **textile or clothing firms that focus on the domestic market.**

Governance category: differential dynamic test results summary

Table 5.15: Governance: differential dynamic test results summary*

Differential Dynamic Test	Hierarchy	Captive	Relational	Modular	Market	Mixed	Total
Export Focused Sample							
Sample Size	6	31	44	16	7	19	123
Structure of Sector							
- % of textile	33%	45%[A]	43%[A]	6%[AB]	14%	42%[A]	37%
- % of clothing	67%	55%[A]	57%[A]	94%[AB]	86%	58%[A]	63%
Market Structure Test							
% of export focused firm	86%	84%	72%	80%	44%	70%	73%
% of export only firm	57%	43%	30%	55%	25%	26%[A]	36%
Growth Bias Test							
- % of firms that have positive revenue growth	50%	39%	34%	56%	14%	26%[A]	37%
- % of positive revenue growth for textiles	0%	21%	26%	0%	0%	25%	22%
- % of positive revenue growth for clothing	75%	53%	40%[A]	60%[AB]	17%	27%[A]	45%
- % of firms that have positive profit growth	17%	42%	48%	50%	29%	58%	46%
- % of textile firms that have positive profit growth	50%	36%	26%	0%	0%	63%[A]	36%
- % of clothing firms that have positive profit growth	0%	47%	64%	53%[A]	33%	55%	51%
- % of firms that have positive margin	33%	42%[A]	55%[A]	75%[A]	14%	58%[A]	51%
- % of textile firms that have positive margin	50%	43%	53%[A]	0%	0%	63%[A]	49%
- % of clothing firms that have positive margin	25%	41%[A]	56%[A]	80%[AB]	17%	55%[A]	53%

*Exclude hierarchy and market from the analysis due to small sample size
A indicates results comparatively distinct from other typologies
B indicates results comparatively distinct from sample average

The tables above illustrate various structures and mixes of sector, growth and export in different governance types. To examine whether each variable is 'significantly different' from other governance types we adopt two criteria: 'Result is comparatively distinct from other typologies' and 'Result is comparatively distinct from sample average'.

We use chi-square and Fisher's exact test to examine whether the results are 'comparatively distinct from other typologies' and adopt McNemar's test, which shows the significance of the difference between two independent proportions, to test whether the results are 'comparatively distinct from the sample average'.

From the analysis, we might not be able to conclude the results for hierarchy and market governance. This is because the sample size is quite small: six for hierarchy and seven for market. We cannot generalise the results for such a small sample size. Though other governance types are quite small they are sizable enough to give us a good indication for this research paper. The details of the analysis are as follows:

Modular governance

Since modular governance provides one of the best environments for upgrading and performance, and the textile sector has been doing well in the export market, we expect to see more textile firms in this group. However, the results show otherwise. We found that the majority of modular governance firms are in clothing (94% vs 6%); actually this is the highest percentage of clothing firms among all governance types. There is only one textile firm in the modular governance group; we therefore deny the hypothesis that there are more textile firms in the group.

Furthermore, we expect to see more exports in the modular governance group but cannot accept such a hypothesis. Though they have a high export focus – only lower than those in the hierarchy group – the difference between firms with modular and other governance types is not significant. The results are also not much different from the total sample. We therefore deny the hypothesis that modular governance firms export more.

In terms of performance, only one textile firm falls into this group. We are therefore unable to interpret the results for the textile category. In the clothing category, clothing modular governance firms tend to do better than average in revenue growth and profit margin, but have similar results to other categories in terms of profit growth. The data illustrate that a high percentage of modular governance firms have a positive revenue growth and a positive margin. This is significantly different from the average and from other groups. The results seem to suggest that modular governance firms have higher abilities than firms in other groups and perform better, which could have a significant impact on profit margin.

Relational governance

We expect to see a higher percentage of textile relational governance firms. However, the results are not much different from the average and are similar to those of the captive governance group. We therefore cannot deny or accept the hypothesis that there is a higher percentage of relational governance textile firms.

We are able to reject the hypothesis that there is a higher percentage of export-focused firms in the relational governance group. The results show that this group exports the least and there is no significant difference between structure of exports from the average or other governance types. So there is not a higher percentage of relational governance export-focused firms than other groups.

The results do not support that there are firms that do better in relational governance than in other governance types either. Clothing firms perform worse than those in modular governance but do not perform better in revenue growth than others; instead the percentage of such firms is lower

than the total but is not statistically different. However, it seems that relational governance has different effects on various sectors, i.e. a negative impact on textiles and a positive impact on clothing. A very low percentage of textile firms have positive growth; in contrast a high percentage of clothing firms achieve positive growth. In addition, the profit margin is no different from the total. So we cannot confirm or deny that relational governance firms do better than those with other governance types.

Hierarchy governance

Though there is no theory that explains the relationship between hierarchy and upgrading, we assume that the hierarchy relationship is very similar to the captive one, i.e. a reasonable environment for upgrading, and lead firms give some support. We therefore expect a reasonably good performance, and expect to see clothing or export-focused firms with this type of governance.

We are unable to conclude any results for hierarchy governance firms because of the small sample size; we can only give an indication of what might be the case for such firms. We are unable to accept the hypothesis that there are more clothing firms with this type of governance. This is because, though there is a higher percentage of clothing firms with modular or relational governance, the percentage with hierarchy governance is no different from the total.

However, we see a high export percentage with this type of governance. Firms export, on average, 86%, which is the most among all governance types and well above the total average. Furthermore, 57% of firms with this type of governance only export their products. This indicates that hierarchy governance firms could be export focused rather than domestic focused. However, due to the very small sample of seven firms, we decline to confirm such findings.

The performance results indicate an ambiguous picture for clothing firms. 75% with this type of governance achieve higher revenue growth, the highest among all governance types. However, when we look at profit growth, clothing firms have no profit growth. Furthermore, clothing firms have the lowest producing positive margin. These figures suggest that firms with hierarchy governance, though they perform well in revenue growth, do not do well in profit making. This is possibly because their headquarters need to fully utilise the capacity of their subsidiary production base, but they also perform transfer pricing in order to take money back to their countries. However, the number of samples is very small. We therefore cannot reject or accept the aforementioned findings.

Captive governance

While we expect to see a higher percentage of captive governance clothing firms, the results suggest otherwise. Only 55% of the sample are in the clothing sector; this is less than average and the lowest among all groups. However, since the results are not much different from the average, we cannot accept or deny such a hypothesis.

Furthermore, we cannot accept the hypothesis that there should be more captive governance export firms. The results indicate that 84% of such firms are export focused and 43% are export only and these figures are among the highest of all governance types. However, the results do not differ much from other governance types or from the total sample. We therefore reject the hypothesis that captive governance firms export more.

In terms of performance, some indicators suggest that captive governance firms perform reasonably well in revenue and profit growth. However, these figures are not the highest and are no different from other types of governance or significantly different from the total sample. Furthermore, profit margins are not significantly different from the average. We therefore cannot conclude that captive governance firms perform differently from other groups.

Market governance

Again, due to the low number of responses, we are unable to conclude our analysis from the findings. However, the results seem to suggest that there is a higher percentage of clothing firms in this group – higher than average and second highest after the modular group. Firms in this group focus on the domestic market rather than export because they are unable to export. Furthermore, they seem to have different abilities to compete. Firms in the clothing sector tend to underperform compared to firms in other groups. Clothing firms in this group tend to perform the worst in most areas including revenue growth, profit growth and positive net margin. The results therefore indicate that market governance firms tend to have the least ability and the worst performance compared to firms in other groups. However, since there is such a small response in the survey, we cannot confirm such findings.

Governance category: differential dynamic test results conclusion

Table 5.16: Differential dynamic conclusion for governance category

	Expected Result	Result	Remark
Hierarchy	- More clothing	No	
	- More export	Maybe	Highest export and export only but not much different
	- Mid % of better performing firms	No	Perform worst in profit growth and margin
Captive	- More clothing	No	Seem to have more textiles than average
	- More export	No	No different
	- Mid % of better performing firms	No	No different from average
Relational	- Textiles	Maybe	Higher than modular but not much different from others or from the average
	- More export	No	Less than others and average
	- High % of better performing firms	Maybe	No in terms of profit growth but may be in terms of net profit margin
Modular	- Textiles	No	More clothing
	- More export	Maybe	High export but less than hierarchy group and not much different from average
	- High % of better performing firms	Maybe	Yes for clothing, in terms of revenue growth and margin No for textiles… no growth and all made loss but only one textile firm in this governance
Market	- Mixed textiles and clothing	No	No; more clothing
	- More domestic	Maybe	Highest but no different
	- Low % of better performing firms	Maybe	Yes for clothing but no for textiles

Since the sample sizes for hierarchy, modular and market governance are very small, we are unable to conclude the results with confidence. However, we see that there may be sector bias in modular and market governance, which have a higher percentage of clothing firms. Furthermore, market governance firms tend to focus on the domestic market and are unable to export. There could also be growth bias in these governance types, for example, market governance firms tend to have lower performance than others, while modular governance firms tend to perform better. At the same time hierarchy governance firms are the best in revenue growth but it seems there is not much profit left in Thailand because their headquarters have incentive to take money back to their own countries. However, the sample size is very small and we are therefore unable to interpret such information. We are able to conclude that **there are no differences between governance and differential dynamics. This again reconfirms that governance has no strong relationship with firm performance.**

Governance category conclusion

In the above analysis, we are unable to see a clear relationship between governance and upgrading type as argued by GVC advocates. The results show that we cannot differentiate product and process upgrading in various governance types. We see an indication that some governance types are more open to functional upgrading, i.e. relational governance, while others, i.e. captive and modular governance, are not very open to it. Furthermore, we can only see that lead firms that adopt captive governance are more supportive while those in modular governance are less supportive to their domestic producers than those that adopt other governance types. However, we are unable to see any differences from other groups. Finally, there might be more challenges from lead captive governance firms and less from modular, however there are no clear unique differences between the groups. This leads us to conclude that, **though there might be some relationship between governance and upgrading it is not strong and we can deny the GVC suggestion that the relationship is strong.**

In addition to the results above, we are unable to see a clear association between lead firm and governance. There is no one-to-one relationship between them. Various types of lead firm are well spread across all governance types. Though we might be able to see that some governance types have a higher percentage of particular types of lead firm, for instance 71% of captive governance firms are international traders, other groups are also made up mainly of international traders. **We cannot therefore see a strong relationship between lead firms and governance.**

The theory also suggests that upgrading will induce different manufacturing types and performance of firms. However, the analysis also found that **there is no clear relationship between these variables.** In the differential dynamic test, we found that particular governance types may provide better opportunities for better performing firms. For example, a higher percentage of modular governance clothing firms can achieve a positive margin while textile firms with the same type of governance are not able to achieve profit growth or positive net margin. But this is still not a strong finding and needs further examination.

Though there is some indication that governance might have an effect on performance, this does not mean we can accept the GVC framework. The theory asserts that lead firms assert power using a particular type of governance, which induces a specific upgrading manner and further induces differentiated performance. But the results show that type of governance does not have a clear association with upgrading, lead firm or manufacturing. So, though we might see that governance has some relationship with performance, we are unable to say that other variables have a relationship with firm performance.

In the next sections, we attempt to examine the relationship between other variables associated with GVC – such as trade intermediaries and type of manufacturing – with upgrading, experience with lead firms, challenges in upgrading and financial performance. GVC advocates have briefly mentioned that these variables have some impact on upgrading and financial performance of firms. However, they have never said what these different impacts are or quantified them. We will try to see whether there is significantly different upgrading and financial performance between firms in various trade intermediaries and types of manufacturing group. If there is, what direction does the impact take?

5.1.3 Findings for the intermediary category

Global value chain advocates also assert that, in addition to type of governance, international trade intermediaries (such as traders, retailers, branded marketers and branded manufacturers) seem to pose a great control over the dynamics and trade of the global market. They believe that global buyers play a significant role in directing production networks across exporting or developing countries. These lead firms control access to major resources (such as product design, new technologies, brand names or consumer demand) that generate the most profitable returns in the industry. Nonetheless, GVC advocates have never clearly expressed the relationship between types of lead firm, upgrading type or performance.

Moreover, the empirical evidence shows that there is no one-to-one relationship between trade intermediaries and governance structure, hence the same intermediaries can choose to relate to suppliers via different arrangements. For example, retailers can exercise relational, modular and captive governance with their producer, while international traders exercise captive, relational and modular governance with theirs. This overlap in governance in each type of trade intermediary can cause unclear results in upgrading and experience with lead firms.

Figure 5.3: Intermediary analysis and key variables
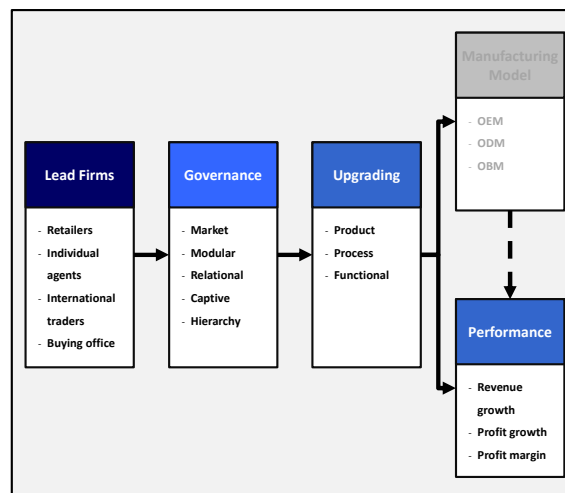
These two concerns – lack of empirical evidence and no one-to-one relationship – raise the question about whether different types of intermediary may help account for different effects on performance and industrial upgrading. This section, therefore, will try to examine whether there is any statistical difference between upgrading, experience and financial performance among different trade intermediary types. And if there is, what type of upgrading, experience and impact of financial performance do these trade intermediaries impose on firms (figure 5.3)?

Intermediary category characteristics

Table 5.17: Intermediary category characteristics summary

		Retail	Trading Agents	International Trader	Buying Office	Mixed	Total
Sample Size		28	4	53	10	73	168
Characteristics	Sector						
	% Textile	64%	50%	45%	30%	45%	48%
	% Clothing	36%	50%	55%	70%	55%	52%
	Local	43%	63%	31%	20%	25%	31%
	Export	57%	38%	69%	80%	75%	69%
	Export Only	18%	25%	34%	40%	44%	36%
	Years in Operation	22.89	9.75	23.75	27.00	23.53	23.38
	Initial Investment Size						
	- Less than US$ 1 mil	54%	100%	51%	30%	58%	54%
	- US$ 1 mil – US$ 6 mil	36%	0%	32%	20%	26%	29%
	- More than US$ 6 mil	11%	0%	17%	50%	16%	17%
	No. of Employees						
	- Less than 50	4%	75%	17%	0%	12%	13%
	- 50 to 200	50%	0%	34%	30%	47%	41%
	- More than 200	46%	25%	49%	70%	41%	46%
Governance Structure							
	- Exclusively Hierarchy	4%	0%	2%	0%	7%	4%
	- Exclusively Captive	14%	0%	36%	20%	16%	22%
	- Exclusively Relational	54%	0%	30%	20%	38%	36%
	- Exclusively Modular	14%	0%	17%	20%	7%	12%
	- Exclusively Market	4%	100%	6%	20%	8%	10%
	- Exclusively Mixed	11%	0%	9%	20%	23%	16%
Business Model	Sale Structure						
	- Export	57%	38%	69%	80%	75%	69%
	- Domestic	43%	63%	31%	20%	25%	31%
	Type of Manufacturer						
	- Exclusively No Brand	25%	75%	36%	20%	14%	24%
	- Exclusively OEM	25%	25%	26%	0%	25%	24%
	- Exclusively ODM	4%	0%	4%	0%	8%	5%
	- Exclusively OBM	18%	0%	19%	20%	23%	20%
	- Mixed	29%	0%	15%	60%	30%	26%
Distribution Channel	Export Market						
	- EU	28%	25%	30%	47%	31%	31%
	- USA	19%	0%	32%	28%	26%	26%
	- Japan	8%	5%	11%	7%	12%	10%
	- China	2%	8%	2%	2%	7%	4%
	- ASEAN	31%	0%	17%	14%	12%	17%
	- Other	11%	63%	8%	1%	11%	11%

The table above illustrates the results from the survey. It illustrates the characteristics, business models, distribution channels and financial performance of various governance types.

The results from interviews found that, unlike international trade intermediaries put forward by Gereffi (1997), manufacturers in Thailand face at least four types of international trade intermediary: retail, individual trade agents, international traders and buying offices. Around 43% of Thai firms use mixed distribution channels. 31.5% of the sample use international traders and 17% use retail as their main distributors. Only four and 10 firms in the sample have individual trading agents and buying offices as their sole distributors, respectively.

In the categories that have sufficient samples to analyse, i.e. retail, international traders and mixed group, we found no difference in investment size and number of employees. Most firms in these groups are small in size of investment but employ many workers. Only firms in the retail group seem to employ a relatively high number of employees.

Though it seems that retail establishes more relational governance than other distributors, while international traders use captive and the mixed group uses mixed governance, there are no clear differences in governance between different trade intermediary types. In addition, various types of trade intermediary have a well-distributed mix of manufacturer type, hence there is no clear relationship between trade intermediary and type of manufacturing.

The following is an analysis of the relationship of trade intermediaries with upgrading, experience with lead firms, performance and differential dynamics.

Intermediary category: internal consistency test results summary

Table 5.18: Intermediary category internal consistency test results summary

Internal Consistency	Retail	Trading Agents	International Trader	Buying Office	Mixed	Total
Sample Size	28	4	53	10	73	168
Upgrading						
- Product	46%	75%	58%	70%	55%	56%
- Process	36%	25%	36%	80%	36%	38%
- Functional	18%	50%	19%	50%	18%	21%
Support/Limits from Lead Firm						
- Finance	-0.14	0.50	0.11	0.30	-0.01	0.04
- HRD	-0.18^A	0.50	0.17	0.30	-0.08^A	0.02
- Product design	0.29	0.00	0.40	0.20	0.37	0.35
- Manufacturing & technology	-0.14	0.50	0.15	0.30	0.18	0.13
- Market information	-0.07^{AB}	0.50	0.32	0.40	0.27^A	0.24
- R&D	-0.07^A	0.50	0.21	0.50	-0.01	0.09^A
- Rules & regulations	-0.21	0.50	0.06	0.10	-0.15	-0.07
Challenges in Upgrading						
- Not interested in upgrading	4%	0%	2%	0%	1%	2%
- Lack of financial support	21%^{A}	50%	25%^{A}	10%	42%^{A}	32%
- Lack of market knowledge	21%^{A}	0%	34%	10%	49%^{A}	36%
- Unsupportive government policy	21%	0%	19%^{A}	30%	36%^{A}	27%
- Lead firms block suppliers/trading firms	0%	0%	8%	10%	5%	5%
- International law and regulations (FTA, Quota)	7%	0%	15%^{A}	10%	4%^{A}	8%
- No skill set	11%^{AB}	25%	40%^{A}	60%	25%	29%
- Technology constraint	36%	25%	26%^{A}	0%	44%^{A}	34%
- Lack of raw material	68%^{AB}	0%	28%^{AB}	30%	51%^{A}	44%
- Poor infrastructure	21%	50%	11%^{A}	0%	33%^{A}	23%
- Invest in other business with higher return	0%	25%	0%	10%	1%	2%

Upgrading

The results seem to illustrate that firms in individual trading agent groups have high levels of product upgrading but low levels of process upgrading. This could be because many trading agents used to work for international trading firms. These people have knowledge of market demand and trends but lack production process knowledge, hence they only focus on product upgrading. In addition, firms in the buying office group tend to have high levels of product and process upgrading. This is because buying offices need to closely control and monitor the product and production process and domestic producers therefore need to respond to such actions, hence higher levels of upgrading. However, due to the small sample size of these groups, we cannot confirm that there are differences in product and process upgrading between various types of trade intermediary. Furthermore, we are unable to see differences in product and process upgrading in retail, international trader and mixed groups, which have a sufficient number of samples to perform the statistical test. We can therefore conclude that **there are no statistical differences in product and process upgrading among firms in various categories.**

The results illustrate that those in retail, international trader and mixed groups have low levels of functional upgrading; the figures are around 18-19%. For the retail group, this could be because many retailers are able to sell no-brand products or because nowadays many retail companies are keen to produce textile or clothing products under their own name and are not prepared to help producers create their own brand. On the other hand, traders only act as middlemen between OEM producers and branded marketers; they do not have any incentive to encourage producers to develop their own branding, hence low functional upgrading. At the same time, buying office and trading agent groups seem to allow firms to conduct functional upgrading since these groups have one of the highest percentages of firms performing such upgrading. Firms in the buying office group try to perform functional upgrading because they have learnt about market behaviour and trends from their buying office and therefore try to enter higher-value-added activities in OBM. Trading agents also need to encourage producers to develop their own brand so that they can easily penetrate new markets. Nonetheless, there are no statistical differences among any of the groups, hence **there is no difference in functional upgrading among different trade intermediary types**.

Support from lead firms

There is **no statistical difference in terms of support and limitation from various types of trade intermediary.** Firms in almost every groups receive strong support in product design and market information. They also perceive that they are hindered in upgrading because lead firms impose various rules and regulations. The results suggest that retail firms limit market information to domestic producers. In addition, the results indicate that retail firms provide low support or even limitation to domestic producers, particularly in finance, HRD and product design, though we cannot confirm the difference from a statistical point of view. This could be because retailers have a specific role in selling products to the end consumer and therefore support producers to a lesser degree. They only set rules and regulations for domestic producers to meet. This high standard might be difficult for domestic producers to follow, hence they feel some limitation. In addition, it appears that small trading agents provide high levels of support. This is because they have a lesser network than other distributors and need to differentiate themselves from their competitors, hence they provide a unique service to their partners. However, the sample size for trading agents is too small to confirm such findings.

Challenges in upgrading

In terms of challenges, again, there are no significant statistical differences. Over all, firms tend to have challenges from lack of raw material, lack of market knowledge and technology constraints. The results only suggest that firms in the retail group have fewer challenges in terms of lack of skill sets but have issues with raw material, while firms in the international trader group have fewer problems with lack of raw material but might have problems with skill sets, which is quite similar to the buying office group. We therefore conclude that **there is no relationship between different types of trade intermediary and challenges in upgrading.**

Intermediary category: internal consistency test results conclusion

Table 5.19: Internal consistency conclusion for intermediary category

Internal Consistency	Retail	Trading Agents	International Trader	Buying Office	Mixed
Sample Size	28	4	53	10	73
Upgrading					
- Product	No	No	No	No	No
- Process	No	No	No	Yes	No
- Functional	No	No	No	Yes	No
Support/Limits from Lead Firm					
- Finance	No	No	No	No	No
- HRD	May Be	No	May Be	No	May Be
- Product design	No	No	No	No	No
- Manufacturing & technology	No	No	No	No	No
- Market information	Yes	No	May Be	No	May Be
- R&D	May Be	No	No	May Be	May Be
- Rules & regulations	No	No	No	No	No
Challenges in upgrading					
- Not interested in upgrading	No	No	No	No	No
- Lack of financial support	May Be	No	May Be	May Be	May Be
- Lack of market knowledge	May Be	No	No	No	May Be
- Unsupportive government policy	No	No	May Be	May Be	May Be
- Lead firms block suppliers/trading firms	No	No	No	No	No
- International law and regulations (FTA, Quota)	No	No	May Be	May Be	May Be
- No skill set	Yes	No	May Be	Yes	No
- Technology constraint	No	No	May Be	Yes	May Be
- Lack of raw material	Yes	May Be	Yes	May Be	May Be
- Poor infrastructure	No	May Be	May Be	May Be	May Be
- Invest in other business with higher return	No	No	No	No	No

The results indicate there may be a high level of process and functional upgrading for the buying office group. However, the sample size is too small to validate the conclusion and, furthermore, there are no clear differences in upgrading and other types of intermediary. Furthermore, we are unable to see that different types of trade intermediary provide distinct support to or limit firms they work with. Nonetheless, there may be some difference in upgrading challenges but these are insignificant and we cannot confirm that there are strong differences between types of trade intermediary and upgrading challenge.

Intermediary category: export performance test results summary

Table 5.20: Intermediary category: export performance results summary

Export Performance	Retail	Trading Agents	International Trader	Buying Office	Mixed	Total
Export Focused Sample						
Sample Size	16	1	40	9	57	123
Revenue Growth						
- Mean	-8%	300%	-6%	-2%	6%	2%
- Median	-7%	300%	-3%	-2%	0%	-2%
- Min	79%	300%	18%	43%	258%	300%
- Max	-50%	300%	-37%	-37%	-35%	-50%
Net Profit Growth						
- Mean	7%	-11072%	-11461%	-537%	-482%	-4079%
- Median	5%	-11072%	-5%	31%	0%	0%
- Min	392%	-11072%	1098%	1654%	3526%	3526%
- Max	-179%	-11072%	-448647%	-6274%	-25860%	-448647%
Net Profit Margin						
- Mean	-1%	-120%	-9%	-1%	-3%	-5%
- Median	0%	-120%	0%	0%	0%	0%
- Min	19%	-120%	9%	7%	14%	19%
- Max	-13%	-120%	-335%	-22%	-109%	-335%

We tested the relationship between trade intermediary and performance by focusing only on firms that focus on the international market, i.e. that export more than 50%.

There seem to be different results for revenue growth, net profit growth and net profit margin. Firms in mixed intermediaries seem to perform better than other groups with an average of 6% and median of 0% compared with negative figures for other groups. At the same time, firms in the retail group tend to perform better in net profit growth (average of 7% and median of 5%) and net profit margin (average of -1% and median of 0%). However, we cannot confirm such findings because there is no significant difference between these numbers.

Like the results from the governance group, the financial results for each type of trade intermediary are very scattered and varied, and there are big gaps between maximum and minimum value in all types of category. The means and medians also diverge. For example, firms in the international trading group have a range of revenue growth between -37% and 18%, an average of -6%; the net profit growth is between -448,647% and 1,098% with an average of -326%. This implies that performance is very uneven and should not have any strong relationship with the type of trade intermediary. Note that there might be differences in financial indicator in the trading agent and buying office groups, but the sample size is too small and we are unable to conclude such findings. We therefore conclude that **there is no clear relationship between firm performance and type of trade intermediary.**

Intermediary category: export performance test results conclusion

Table 5.21: Export performance test results conclusion for intermediary category

Internal Consistency	Retail	Trading Agents	International Trader	Buying Office	Mixed
Sample Size	**16**	**1**	**40**	**9**	**57**
Performance					
- Revenue growth	No	No	No	No	No
- Net profit growth	No	No	No	No	No
- Net profit margin	No	No	No	No	No

The results from the analysis above suggest that, similar to the results from the governance group, **there is no clear relationship between firm performance and type of trade intermediary**.

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Intermediary category: differential dynamic test results conclusion

Table 5.22: Differential dynamic test results conclusion for intermediary category

Differential Dynamic Test	Retail	Trading Agents	International Trader	Buying Office	Mixed	Total
Export Focused Sample						
Sample Size	**16**	**1**	**40**	**9**	**57**	**123**
Structure of Sector						
- % of textile	44%	0%	38%	22%	37%	37%
- % of clothing	56%	100%	63%	78%	63%	63%
Market Structure Test						
% of export focused firms	57%	25%	75%	90%	785	73%
% of export only firms	18%	25%	34%	40%	44%	36%
Growth Bias Test						
- % of firms that have positive revenue growth	38%	100%	30%	44%	39%	37%
- % of positive revenue growth for textiles	43%	n.a.	20%	0%	19%	22%
- % of positive revenue growth for clothing	33%	100%	36%	57%	50%	45%
- % of firms that have positive profit growth	50%	0%	38%	67%	47%	46%
- % of textile firms that have positive profit growth	71%	n.a.	27%	0%	33%	36%
- % of clothing firms that have positive profit growth	33%[A]	0%	44%[A]	86%[AB]	56%	51%
- % of firms that have positive margin	56%	0%	48%	33%	56%	51%
- % of textile firms that have positive margin	57%	n.a.	53%	0%	48%	49%
- % of clothing firms that have positive margin	56%	0%	44%	43%	61%	53%

We do not include trading agents and buying offices in the analysis due to the low sample size

A indicates results comparatively distinct from other typologies

B indicates results comparatively distinct from sample average

The results illustrate that Thai firms only focus on three types of trade intermediary: international trader, retailer and mixed distributors. Thai firms only use a small percentage of trading agents and buying offices. We are not able to analyse the results from trading agents and buying office groups because of the small sample sizes. In addition, we are unable to validate growth results in the retail group when categorised into textile and clothing sectors since the sample size is also too small.

The results illustrate that textile firms may trade via retail more than clothing firms. This is because a higher percentage of textile firms (44%) trade via retail compared with 37% of the total sample. This could be because the textile product is an end product in itself and does not need to pass through international traders. Furthermore, it seems that clothing firms tend to use buying offices more than textile firms, but as suggested above, the sample size is small and we might not be able to conclude the results confidently.

Furthermore, those who focus on the export market seem to employ international trading firms and buying offices more than those who focus on the domestic market. 75% of firms that use international traders, 90% of firms that use buying offices and 78% of firms in the mixed group are export focused compared with 57% of retail and 25% of trading agents.

Different types of trade intermediary have different effects on performance. Retail has a positive relationship with the textile sector, and a high percentage of textile firms in retail seem to perform better than others in terms of revenue growth and profit growth but not in terms of profit margin. Though there is no difference for the clothing sector, it seems that a high percentage of firms in the mixed group perform better than others, but not significantly.

Table 5.23: Differential dynamic conclusion for trade intermediary category

Differential Dynamic Test	Retail	Trading Agents	International Trader	Buying Office	Mixed
Export Focused Sample					
Sample Size	**16**	**1**	**40**	**9**	**57**
Structure of Sector					
- % of textile	No	No	No	No	No
- % of clothing	No	No	No	No	No
Market Structure Test					
% of export focused firms	No	No	No	No	No
% of export only firms	No	No	No	No	No
Growth Bias Test					
- % of firms that have positive revenue growth	No	No	No	No	No
- % of positive revenue growth for textiles	No	No	No	No	No
- % of positive revenue growth for clothing	No	No	No	No	No
- % of firms that have positive profit growth	No	No	No	No	No
- % of textile firms that have positive profit growth	No	No	No	No	No
- % of clothing firms that have positive profit growth	May Be	No	May Be	Yes	No
- % of firms that have positive margin	No	No	No	No	No
- % of textile firms that have positive margin	No	No	No	No	No
- % of clothing firms that have positive margin	No	No	No	No	No

The results illustrate that there are no differences in the proportion of textile and clothing sectors in various intermediary categories. However, we see that those in retail have a domestic bias while mixed firms tend to be export biased. Further, there seems to be some relationship between type of intermediary and firm performance, where textile firms tend to perform distinctively better in the retail group than in other groups. But there are no strong differences from other groups or from the average.

In addition, mixed clothing firms have more chance to achieve positive profit growth while those in retail have less chance. However, the differences are not strong.

Conclusion for trade intermediary category

The results clearly show that various lead firms do not assert a distinct governance type with their producers; they use various types of relationship to deal with them. We can clearly see this from the scattered distribution between types of intermediary and governance structure. Major governance types that Thai firms face are relational and captive. We therefore conclude that there is no relationship between lead firms and governance.

Furthermore, there is no relationship between lead firms and type of upgrading. However, it seems that a lower percentage of firms in the retail group perform product and functional upgrading. We are unable to see a clear distinction between the percentages of firms in all groups. A high percentage of firms in all groups focus on product upgrading while a small percentage focus on functional upgrading. We therefore conclude that there is no relationship between lead firms and upgrading.

We are also unable to see a relationship between type of lead firm and performance. Each intermediary group has diverse and scattered results in terms of revenue growth, profit growth and profit margin. However, in the differential dynamic analysis, we see some indication that a higher percentage of firms in the retail category can achieve revenue growth and profit growth. This could indicate that some form of intermediary gives firms in that group a chance to perform better.

However, since the lead firms category does not have a clear and strong relationship with governance and upgrading, which is a key theme in GVC literature, we are unable to say that governance and upgrading have a strong effect on firm performance. We can only say that the type of lead firm could have some 'direct' impact on performance but does not have any effect via governance and upgrading, as asserted by GVC advocates.

5.1.4 Findings for the upgrading category

GVC literature claims that participating in GVCs may induce local firms to 'upgrade' in such a way that they may start producing better and more efficient products or move towards more skilled activities (Porter, 1990; Kaplinsky, 2000). The literature argues that upgrading could have two types of effect on firms. First, Humphrey and Schmitz (2000) argue that different forms of value chain have an influence on industrial upgrading which will have an impact on performance. The literature implies that firms in a particular type of governance will have faster or more progress in upgrading, and the situation should have a positive impact on firm performance. Second, Mathews and Cho assert that upgrading in global value chains can take firms from low value added such as OEM to higher value added such as ODM and OBM manufacturing types, as we see East Asian countries 'move up' the apparel value chain from ODM to OBM. In the global apparel value chains, being an OBM can better indicate the most profitable segment and performance.

Figure 5.4: Upgrading analysis and key variables
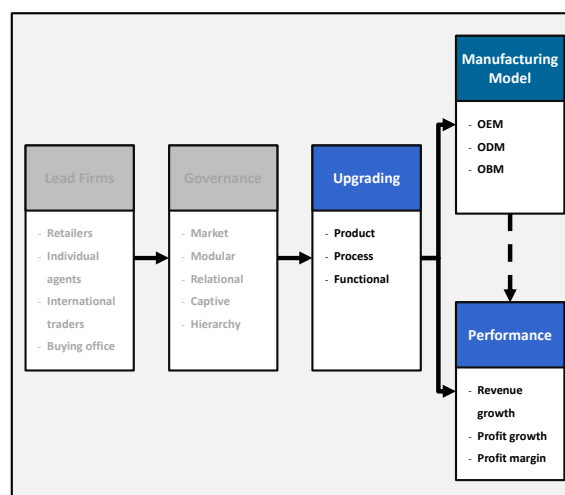
This section will therefore look at the empirical evidence and examine whether upgrading has an effect on manufacturing type and/or performance. We will also look at whether there is any relationship between lead firm and governance and upgrading type.

Upgrading category characteristics

Table 5.24: Upgrading category characteristics summary

		Product	Process	Functional	Mixed	No Upgrade	Total
Sample Size		48	27	12	50	31	168
Characteristics	Sector						
	% Textile	50%	41%	42%	50%	48%	48%
	% Clothing	50%	59%	58%	50%	52%	52%
	Local	26%	36%	35%	34%	26%	31%
	Export	74%	64%	65%	66%	74%	69%
	Export Only	48%	22%	33%	26%	45%	36%
	Years in Operation	23.27	23.19	19.92	25.94	20.90	23.38
	Initial Investment Size						
	- Less than US$ 1 mil	54%	52%	42%	52%	65%	54%
	- US$ 1 mil – US$ 6 mil	38%	11%	50%	32%	16%	29%
	- More than US$ 6 mil	8%	37%	8%	16%	19%	17%
	No. of Employees						
	- Less than 50	15%	11%	8%	14%	13%	13%
	- 50 to 200	38%	22%	58%	46%	48%	41%
	- More than 200	48%	67%	33%	40%	39%	46%
Governance Structure							
	- Exclusively Hierarchy	7%	5%	0%	0%	5%	4%
	- Exclusively Captive	15%	33%	67%	21%	11%	22%
	- Exclusively Relational	34%	23%	22%	47%	45%	36%
	- Exclusively Modular	24%	13%	0%	6%	7%	12%
	- Exclusively Market	15%	8%	11%	12%	5%	10%
	- Exclusively Mixed	5%	20%	0%	15%	27%	16%
Business Model	Sale Structure						
	- Export	74%	64%	65%	66%	74%	69%
	- Domestic	26%	36%	35%	34%	26%	31%
	Type of Manufacturer						
	- Exclusively No Brand	15%	33%	17%	28%	29%	24%
	- Exclusively OEM	33%	26%	25%	16%	19%	24%
	- Exclusively ODM	15%	4%	0%	2%	0%	5%
	- Exclusively OBM	17%	11%	33%	26%	19%	20%
	- Mixed	21%	26%	25%	28%	32%	26%
Distribution Channel	Intermediary						
	- Retail	28%	30%	35%	24%	31%	28%
	- Individual Agent	6%	8%	6%	12%	10%	9%
	- International Trader	60%	50%	38%	44%	45%	49%
	- Buying Office	6%	11%	21%	17%	8%	11%
	- Other	0%	2%	0%	1%	3%	1%
	Export Market						
	- EU	31%	35%	15%	31%	36%	31%
	- USA	30%	26%	21%	23%	27%	26%
	- Japan	10%	16%	12%	9%	8%	10%
	- China	2%	2%	0%	8%	6%	4%
	- ASEAN	20%	12%	32%	13%	17%	17%
	- Other	7%	8%	20%	17%	6%	11%

The table above illustrates the results from the survey. It illustrates the characteristics, business models, distribution channels and financial performance of various upgrading types. We see that Thai firms have various types of upgrading, from product to function. However, around 30% of the sample performs mixed upgrading while 29% performs product upgrading and 16% process upgrading. It is interesting that few Thai firms perform functional upgrade (7%); more importantly, we see that nearly 20% of the sample makes no attempt to upgrade.

The results illustrate that there is no significant difference in terms of initial investment and number of employees for various groups. Firms that perform upgrading or no upgrading have a similar distribution of investment and number of employees. Only the process upgrading focus group seems to have a higher percentage of larger firms.

Furthermore, there are no differences in manufacturing type and governance structure. This category seems to have comparable types of producer well spread across all groups, where mixed, OEM and no brand are the main types of manufacturing for all groups. In terms of governance structure, relational governance is the most important followed by captive and mixed. However, those who are in the functional upgrading group seem to have exclusively captive governance, while those in the mixed and no upgrading groups seem to have exclusively relational governance with their lead firms.

The following is an analysis of the relationship of upgrading with experience with lead firms, performance and differential dynamics.

Upgrading category: internal consistency test results summary

Table 5.25: Upgrading internal consistency test results summary

Internal Consistency	Product	Process	Functional	Mixed	No Upgrade	Total
Sample Size	48.00	27.00	12.00	50.00	31.00	168.00
Support/Limits from Lead Firm						
- Finance	0.19A	-0.22A	0.00	0.08	-0.03	0.04
- HRD	-0.02	-0.22A	0.17	0.22A	-0.10A	0.02
- Product design	0.71AB	0.22A	0.08A	0.26A	0.13A	0.35
- Manufacturing & technology	0.15	-0.04	0.17	0.28	0.00	0.13
- Market information	0.42	0.07	0.00	0.26	0.19	0.24
- R&D	0.15	-0.11	0.00	0.20	0.03	0.09
- Rules & regulations	-0.10	-0.22	-0.08	0.06	-0.06	-0.07
Challenges in Upgrading						
- Not interested in upgrading	2%	0%	0%	0%	6%	2%
- Lack of financial support	44%A	19%A	33%	20%A	42%A	32%
- Lack of market knowledge	44%	41%	33%	28%	35%	36%
- Unsupportive government policy	15%A	33%	17%	42%AB	19%A	27%
- Lead firms block suppliers/trading firms	8%	4%	8%	6%	0%	5%
- International law and regulations (FTA, Quota)	21%AB	4%A	8%	4%A	0%A	8%
- No skill set	29%	19%	42%	34%	26%	29%
- Technology constraint	42%	26%	33%	38%	23%	34%
- Lack of raw material	38%	41%	67%A	54%A	32%A	44%
- Poor infrastructure	8%AB	26%A	42%A	30%A	23%	23%
- Invest in other business with higher return	0%	0%	8%A	4%	0%	2%

Support from lead firms

There is **no statistical difference in terms of support and limitation from various types of upgrading.** Firms in the product upgrading and mixed groups seem to have better support from lead firms, while firms in the process upgrading group seem to have the least support and probably perceive limitation from lead firms. This could be because firms in the process upgrading group focus on being labour intensive and could be inefficient. This forces lead firms to closely monitor firms in the process upgrading group, which could be supported by the results that show firms in the process upgrading group see that lead firms do not support their human resources development. Furthermore, we can see that the product upgrading group could be the result of strong support in product design from lead firms.

Challenges in upgrading

We are unable to see significant differences in terms of challenges from lead firms. Overall, firms tend to have challenges from lack of raw material, lack of market knowledge and technology constraints. The results only suggest that firms in the product upgrading group perceive they are blocked by rules and regulations but less limitation from poor infrastructure, while firms in the mixed group perceive that unsupportive government policy is the key challenge in upgrading. We therefore conclude that **there is no relationship between different types of upgrading and challenge from upgrading.**

Upgrading category: internal consistency test results conclusion

Table 5.26: Internal consistency test results conclusion for upgrading category

Internal Consistency	Product	Process	Functional	Mixed	No Upgrade
Sample Size	**48.00**	**27.00**	**12.00**	**50.00**	**31.00**
Support/Limits from Lead Firm					
- Finance	May Be	May Be	No	No	No
- HRD	No	May Be	No	May Be	May Be
- Product design	Yes	May Be	May Be	May Be	May Be
- Manufacturing & technology	No	No	No	No	No
- Market information	No	No	No	No	No
- R&D	No	No	No	No	No
- Rules & regulations	No	No	No	No	No
Challenges in Upgrading					
- Not interested in upgrading	No	No	No	No	No
- Lack of financial support	May Be	May Be	No	May Be	May Be
- Lack of market knowledge	No	No	No	No	No
- Unsupportive government policy	May Be	No	No	Yes	May Be
- Lead firms block suppliers/trading firms	No	No	No	No	No
- International law and regulations (FTA, Quota)	Yes	May Be	No	May Be	May Be
- No skill set	No	No	No	No	No
- Technology constraint	No	No	No	No	No
- Lack of raw material	No	No	May Be	May Be	May Be
- Poor infrastructure	Yes	May Be	May Be	May Be	No
- Invest in other business with higher return	No	No	May Be	No	No

The results indicate **there is no strong difference in terms of support or limitation from various types of upgrading**. However, we are able to see that those that perform product upgrading receive product design support from lead firms. At the same time, firms that perform process upgrading may receive limited HRD and financial support but firm firms that perform mixed upgrading do receive HRD and product design support.

There is no difference in upgrading challenge between various upgrading types. Only those that perform product upgrading perceive strong challenges from international law and regulations but fewer challenges from poor infrastructure, while those in mixed groups perceive limitation from unsupportive government policy. Over all, firms tend to have challenges from lack of raw material, lack of market knowledge and technology constraints.

Upgrading category: export performance test results summary

Table 5.27: Upgrading: export performance test results summary

Export Performance	Product	Process	Functional	Mixed	No Upgrade	Total
Export Focused Sample						
Sample Size	**36.00**	**18.00**	**8.00**	**36.00**	**25.00**	**123.00**
Revenue Growth						
- Mean	-1%	-7%	-6%	6%	12%	2%
- Median	-1%	-8%	-6%	-2%	0%	-2%
- Min	79%	33%	11%	258%	300%	300%
- Max	-50%	-37%	-19%	-41%	-38%	-50%
Net Profit Growth						
- Mean	-12392%	-1690%	-1390%	68%	-657%	-4079%
- Median	0%	-14%	-13%	27%	-13%	0%
- Min	3526%	94%	176%	1654%	464%	3526%
- Max	-448647%	-25860%	-6274%	-1319%	-11072%	-448647%
Net Profit Margin						
- Mean	0%[A]	0%[A]	-51%[AB]	0%[A]	-11%[A]	-5%
- Median	0%	0%	-10%	0%	0%	0%
- Min	19%	6%	9%	7%	5%	19%
- Max	-13%	-6%	-335%	-9%	-120%	-335%

A indicates results comparatively distinct from other typologies
B indicates results comparatively distinct from sample average

GVC researchers claim that upgrading should have an impact on performance. We examined the relationship between various types of upgrading. The results appear to indicate that firms in product and mixed upgrading perform better in revenue growth, net profit growth and net profit margin. Firms in both upgrading groups have better means and medians for these indicators. Furthermore, firms in the process upgrading group tend to have worst performance in all indicators, even worse than those that do not upgrade. Notice that firms in functional upgrading seem to have the lowest margin compared with other groups but the sample size is so small we are unable to confirm such findings.

However, **we cannot conclude that there is a relationship between upgrading and performance.** This is because for each type of upgrading the financial results are very scattered and varied, and there are big gaps between maximum and minimum value in all types of category. For example, a firm in the product upgrading group has the best performance on average with revenue growth of -50%; this is lower than the worst performing firm in the process upgrading group, and is the lowest of all samples.

Upgrading category: export performance test results conclusion

Table 5.28: Export performance conclusion for upgrading category

Internal Consistency	Product	Process	Functional	Mixed	No Upgrade
Sample Size	**36.00**	**18.00**	**8.00**	**36.00**	**25.00**
Performance					
- Revenue growth	No	No	n.a.	No	No
- Net profit growth	No	No	n.a.	No	No
- Net profit margin	No	No	n.a.	No	No

The results from the analysis above suggest that, similar to the results from other groups, there is no clear relationship between firm performance and type of upgrading. This is contrary to what is claimed by GVC advocates, that different forms of governance have an impact on upgrading which will then have further impact on performance. We therefore conclude that **there is no clear relationship between type of upgrading and firm performance.**

Upgrading category: differential dynamic test results conclusion

Table 5.29: Differential dynamic conclusion for upgrading category

Differential Dynamic Test	Product	Process	Functional	Mixed	No Upgrade	Total
Export Focused Sample						
Sample Size	**36.00**	**18.00**	**8.00**	**36.00**	**25.00**	**123.00**
Structure of Sector						
- % of textile	39%	33%	25%	33%	44%	37%
- % of clothing	61%	67%	75%	67%	56%	63%
Market Structure Test						
% of export focused firms	75%	67%	67%	72%	81%	73%
% of export only firms	48%ᴬ	22%ᴬ	33%	26%ᴬ	45%	36%
Growth Bias Test						
- % of firms that have positive revenue growth	42%	33%	25%	39%	32%	37%
- % of positive revenue growth for textiles	29%	33%	0%	8%	27%	22%
- % of positive revenue growth for clothing	50%	33%	33%	54%	36%	45%
- % of firms that have positive profit growth	42%ᴬ	44%	38%	67%ᴬᴮ	24%ᴬᴮ	46%
- % of textile firms that have positive profit growth	36%	50%	0%	42%	27%	36%
- % of clothing firms that have positive profit growth	45%ᴬ	42%	50%	79%ᴬᴮ	21%ᴬᴮ	51%
- % of firms that have positive margin	58%	56%	25%	56%	40%	51%
- % of textile firms that have positive margin	57%	83%	50%	33%	36%	49%
- % of clothing firms that have positive margin	59%	42%	17%	67%	43%	53%

*We exclude firms in functional upgrading in the analysis due to the small sample sizes
A indicates results comparatively distinct from other typologies
B indicates results comparatively distinct from sample average

The results show that the textile and clothing sectors have comparable types of upgrading, particularly product process and mixed upgrading. However, it seems that the clothing sector tends to have higher functional upgrading. On the other hand, a higher percentage of textile firms tend not to perform any upgrading. Nevertheless, we are unable to see significant sectoral bias between those upgrading groups. We can therefore conclude that there is no relationship between upgrading and type of sector.

Furthermore, there is no difference in the percentage of export-focused firms in various upgrading types. Both export and domestic firms are well distributed across all types of upgrading.

In terms of performance, different types of upgrading have a distinct impact on different sectors. Process upgrading tends to support a higher percentage of textile firms in achieving higher revenue growth, and firms in this group have a significantly high percentage in achieving a positive margin. On the other hand, the mixed upgrading group provides better opportunities for clothing firms to grow and have a higher profit margin. No upgrading results in lower percentage of firm in achieving positive profit growth, but no significant differences in margin and revenue growth.

Table 5.30: Differential dynamic conclusion for upgrading category

Differential Dynamic Test	Product	Process	Functional	Mixed	No Upgrade
Export Focused Sample					
Sample Size	**36.00**	**18.00**	**8.00**	**36.00**	**25.00**
Structure of Sector					
- % of textile	No	No	No	No	No
- % of clothing	No	No	No	No	No
Market Structure Test					
% of export focused firms	No	No	No	No	No
% of export only firms	May Be	May Be	No	May Be	No
Growth Bias Test					
- % of firms that have positive revenue growth	No	No	No	No	No
- % of positive revenue growth for textiles	No	No	No	No	No
- % of positive revenue growth for clothing	No	No	No	No	No
- % of firms that have positive profit growth	May Be	No	No	Yes	Yes
- % of textile firms that have positive profit growth	No	No	No	No	No
- % of clothing firms that have positive profit growth	May Be	No	No	Yes	Yes
- % of firms that have positive margin	No	No	No	No	No
- % of textile firms that have positive margin	No	No	No	No	No
- % of clothing firms that have positive margin	No	No	No	No	No

The results indicate that various upgrading types do not differentiate performance of firms. Firms that perform product, process or functional upgrading seem to have similar sector and growth structure. However, firms that perform a combination of upgrading indicate better performance; for example, textile firms that perform process upgrading and clothing firms that conduct mixed upgrading have more chance of achieving higher profit growth. At the same time, clothing firms that do not upgrade have a lower chance of profit growth. We therefore conclude that **there may be some association between upgrading type and sector performance.**

Conclusion for upgrading category

The results clearly show that various upgrading types do not have an effect on the type of manufacturing. Each manufacturing model is well distributed across every type of upgrading. Furthermore, we are unable to see a clear relationship between upgrading and financial performance in the export performance analysis. However, in the differential dynamic analysis, we are able to see that a combination type of upgrading may give firms better opportunities for differential performance. Furthermore, a particular upgrading type may be more suitable for one sector than another. For example, textile firms with process upgrading have more chance to achieve higher profit growth but clothing firms in the same group do not. At the same time, clothing firms should do better if they perform mixed upgrading.

In addition, contrary to GVC advocates' claim that different types of lead firm allow various patterns of upgrading, we are unable to see any strong relationship between upgrading and type of lead firm. Again, international traders are the main distributors for all groups, while retail is the second most important. Moreover, there is no relationship between governance and upgrading as asserted by GVC advocates. Only the functional group has a distinct captive relationship with lead firms.

The lack of relationship between lead firms and governance in terms of upgrading implies that though there is some relationship between upgrading and performance, governance and lead firm should not have any association with performance. This means that the GVC framework does not hold true in this particular empirical data.

5.1.5 Findings for the manufacturing category

In addition to governance, lead firms and upgrading, GVC advocates propose that certain results of upgrading, i.e. OEM, ODM and OBM, are more successful than others. Gereffi and Memedovic (2003) explain in their paper that clothing manufacturers in the East Asian newly industrialised economies (NIEs) consider moving up the value chain from original equipment manufacturing (OEM) to original brand manufacturing (OBM) as one of the key directions for sustaining their business. In the OEM or intermediary stage, business functions are mainly associated with production or sourcing and coordinating the production networks for overseas buyers, and products are marketed under the buyers' brand names. Shifting from OEM (or intermediary operation) to OBM, clothing manufacturers need to expand their functional capabilities from production and coordination to higher-value-added activities, such as design, brand building and brand marketing. In the global apparel value chains, being an OBM can indicate better the most profitable segments and performance.

Figure 5.5: Manufacturing analysis and key variables
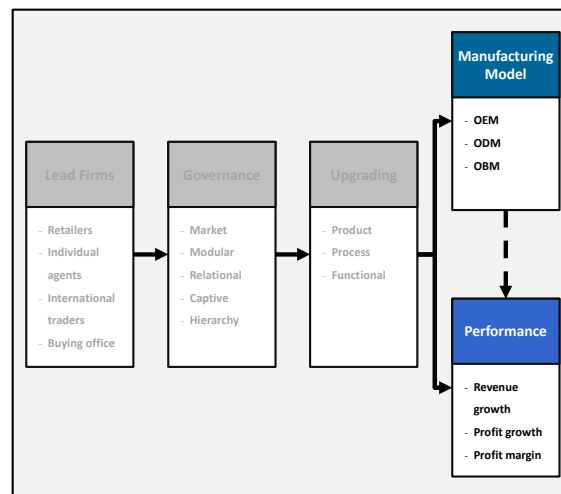
This section will examine whether there is any relationship between type of manufacturing and performance. We also examine whether any GVC variables, such as lead firm, governance and upgrading have any strong relationship with manufacturing type.

Manufacturing category characteristics

Table 5.31: Manufacturing category characteristics summary

		No Brand	OEM	ODM	OBM	Mixed*	Total
Sample Size		41	40	9	34	44	168
Characteristics	Sector						
	% Textile	56%	40%	44%	50%	45%	48%
	% Clothing	44%	60%	56%	50%	55%	52%
	Local	45%	19%	46%	28%	26%	31%
	Export	55%	81%	54%	72%	74%	69%
	Export Only	24%	50%	33%	35%	34%	36%
	Years in Operation	22.05	27.13	19.67	24.38	21.18	23.38
	Initial Investment Size						
	- Less than US$ 1 mil	56%	60%	33%	50%	55%	54%
	- US$ 1 mil – US$ 6 mil	22%	28%	56%	38%	23%	29%
	- More than US$ 6 mil	22%	13%	11%	12%	23%	17%
	No. of Employees						
	- Less than 50	32%	8%	11%	12%	2%	13%
	- 50 to 200	32%	25%	56%	50%	55%	41%
	- More than 200	37%	68%	33%	38%	43%	46%
Governance Structure	-						
	- Exclusively Hierarchy	7%	5%	0%	0%	5%	4%
	- Exclusively Captive	15%	33%	67%	21%	11%	22%
	- Exclusively Relational	34%	23%	22%	47%	45%	36%
	- Exclusively Modular	24%	13%	0%	6%	7%	12%
	- Exclusively Market	15%	8%	11%	12%	5%	10%
	- Exclusively Mixed	5%	20%	0%	15%	27%	16%
Business Model	Sale Structure						
	- Export	55%	81%	54%	72%	74%	69%
	- Domestic	45%	19%	46%	28%	26%	31%
Distribution Channel	Intermediary						
	- Retail	19%	29%	21%	34%	33%	28%
	- Individual Agent	16%	7%	9%	9%	4%	9%
	- International Trader	54%	56%	53%	50%	37%	49%
	- Buying Office	9%	8%	6%	7%	21%	11%
	- Other	2%	0%	0%	0%	3%	1%
	Export Market						
	- EU	23%	46%	16%	21%	38%	31%
	- USA	22%	29%	17%	32%	25%	26%
	- Japan	12%	8%	18%	10%	10%	10%
	- China	4%	1%	16%	7%	3%	4%
	- ASEAN	22%	14%	23%	17%	13%	17%
	- Other	17%	2%	10%	13%	12%	11%

*77% are OEM mixed with other manufacturing types, 5% are mixed ODM and OBM, 18% are mixed with at least three manufacturing types.

The table above illustrates the results from the survey. It illustrates characteristics, business models, distribution channels and financial performance of various manufacturing types.

The results illustrate that there may be distinct characteristics in terms of firm size in various manufacturing groups but they are not statistically different. OEM and mixed groups seem to require less investment but have a significantly higher number of employees. OEM groups seem to have a higher percentage of export firms compared to other groups, while no brand and ODM focus more on the domestic market.

Furthermore, various types of domestic manufacturer tend to have a similar mix of distributors. The main channels are through international trade and retail; only the mixed group seems to use buying offices more.

There is also no distinct type of governance among various manufacturing types. Firms in all groups, except OEM, have more relational governance with their lead firms. OEM firms have a higher captive relationship but also a higher percentage of relational relationships. We therefore confirm that there is no clear relationship between type of manufacturing and governance structure.

Manufacturing category: internal consistency test results summary

Table 5.32: Manufacturing category internal consistency test results summary

Internal Consistency	No Brand	OEM	ODM	OBM	Mixed	Total
Sample Size	41	40	9	34	44	168
Upgrading						
- Product	49%[A]	58%	89%[A]	56%	55%	56%
- Process	44%	35%	11%	35%	43%	38%
- Functional	22%	13%[A]	11%	32%[A]	20%	21%
Support/Limits from Lead Firm						
- Finance	0.12	-0.08	0.33	0.18	-0.11	0.04
- HRD	0.20[A]	-0.18[A]	0.22	0.03	-0.02	0.02
- Product design	0.29	0.50	0.44	0.24	0.32	0.35
- Manufacturing & technology	0.24	0.13	0.22	0.12	0.02	0.13
- Market information	0.32	0.18	0.44	0.35	0.11	0.24
- R&D	0.20	-0.05	0.22	0.06	0.11	0.09
- Rules & regulations	0.10[A]	-0.33[AB]	0.22[A]	0.0[A]	-0.11	-0.07
Challenges in Upgrading						
- Not interested in upgrading	5%	0%	0%	3%	0%	2%
- Lack of financial support	20%[A]	43%[A]	33%	35%	30%	32%
- Lack of market knowledge	27%[A]	35%	33%	50%[A]	36%	36%
- Unsupportive government policy	20%[A]	13%[A]	33%	32%[A]	41%[A]	27%
- Lead firms block suppliers/trading firms	7%	3%	11%	6%	5%	5%
- International law and regulations (FTA, Quota)	10%	5%	11%	9%	9%	8%
- No skill set	32%	35%	11%	32%	23%	29%
- Technology constraint	20%[A]	50%[A]	22%	41%[A]	30%	34%
- Lack of raw material	29%[A]	40%	44%	56%[A]	52%[A]	44%
- Poor infrastructure	20%	23%	0%	24%	30%	23%
- Invest in other business with higher return	5%	0%	0%	3%	0%	2%

A indicates results comparatively distinct from other typologies
B indicates results comparatively distinct from sample average

Upgrading

The survey results suggest **there is no statistical difference in product upgrading among firms of various manufacturing types.** They suggest that no-brand firms seem to do less product upgrading than firms in other groups. This is because no-brand firms only produce products guided by buyers or sometimes they have no incentive to upgrade and only copy other people's products. The results also suggest that firms in ODM have the highest level of product upgrading. This is because ODM manufacturers differentiate from their product designs and need to determine what products to create; they therefore tend to have higher levels of product upgrading. However, the results are not statistically different among various manufacturing types.

In terms of process upgrading, unlike the findings in product upgrading, the ODM category has the lowest percentage of firms performing process upgrading but the no-brand category is among those that perform process upgrading the most, with 44%. Again, since the number of samples in ODM is quite small – nine – and there is no statistical difference among all groups, we therefore conclude that **there is no relationship between different types of manufacturing and process upgrading.**

There is no difference in functional upgrading among different manufacturing types. The results illustrate that OBM firms perform functional upgrading the most as generally believed, but it is still quite a low figure at 32%; furthermore, there is no statistical difference from other groups. This could be because firms in other groups have tried to perform such upgrading in recent years with the belief that brand building should provide better financial return; at the same time OBM firms performed such upgrading long ago and do not perform such a task at present. We also see unexpected results in that more no-brand groups conduct functional upgrading than OEM and ODM groups. This could be because no-brand firms are trying to catch up other firms. Note that ODM groups tend to have low levels of functional upgrading. This is because they focus on design and sell products under a retailer or marketer brand name.

Support from lead firms

There is no statistical difference in terms of support and limitation from various types of manufacturing. The results, though not statistically different, suggest that firms in the ODM group seem to have higher levels of support from lead firms, particularly in market information, product design and finance. This is because ODM firms sell and design products under the brand of retailers and marketers. These buyers need a close relationship and interaction with ODM producers to achieve the standard and quality required, hence high levels of support. OEM firms seem to have the lowest level of support from, or are even limited by, lead firms. OEM firms are limited or blocked by lead firms in finance, HRD and probably R&D. This also confirms, statistically, that they are limited in terms of rules and regulations by lead firms. This is because OEM producers focus on production, and not design or branding; they therefore only follow the product design, specification and quality required by their buyers. These buyers do not therefore need to support OEM producers; they only set prices, standards and rules that OEM producers need to meet and follow. However, we cannot confirm such findings since there is no statistical difference between firms in all manufacturing groups.

Challenges in upgrading

There are no significant differences in challenges from lead firms. Overall, firms tend to have challenges from lack of raw material, lack of market knowledge and technology constraints. The results, however, illustrate that a high percentage of OBM firms face many challenges in upgrading, particularly because of lack of market knowledge and material. OBM firms, similar to no-brand firms, tend to have a higher incidence of quitting the industry and investing in other business. In addition, we found that a high percentage of OEM firms have technology constraints which is significantly different from the no-brand group but not different from the average. However, the findings do not indicate any statistical differences from other groups and/or from the average and we therefore conclude that **there is no relationship between type of manufacturing and challenge from upgrading.**

Table 5.33: Internal consistency conclusion for manufacturing category

Internal Consistency	No Brand	OEM	ODM	OBM	Mixed
Sample Size	41	40	9	34	44
Upgrading					
- Product	May Be	No	May Be	No	No
- Process	No	No	No	No	No
- Functional	No	May Be	No	May Be	No
Support/Limits from Lead Firm					
- Finance	No	No	No	No	No
- HRD	May Be	May Be	No	No	No
- Product design	No	No	No	No	No
- Manufacturing & technology	No	No	No	No	No
- Market information	No	No	No	No	No
- R&D	No	No	No	No	No
- Rules & regulations	May Be	Yes	May Be	May Be	No
Challenges in Upgrading					
- Not interested in upgrading	No	No	No	No	No
- Lack of financial support	May Be	May Be	No	No	No
- Lack of market knowledge	May Be	No	No	May Be	No
- Unsupportive government policy	May Be	May Be	No	May Be	May Be
- Lead firms block suppliers/trading firms	No	No	No	No	No
- International law and regulations (FTA, Quota)	No	No	No	No	No
- No skill set	No	No	No	No	No
- Technology constraint	May Be	May Be	No	May Be	No
- Lack of raw material	May Be	No	No	May Be	May Be
- Poor infrastructure	No	No	No	No	No
- Invest in other business with higher return	No	No	No	No	No

The findings illustrate that there is no significant relationship between type of manufacturing and upgrading and experience of upgrading. We are unable to see distinct upgrading types in various manufacturing types. Furthermore, though there might be limitation from lead firms in the OEM category, this is the only concern out of seven, so we are unable to conclude that there is a strong relationship between support and type of manufacturing. Finally, there is no clear relationship between challenges in upgrading and type of manufacturing. Though we see that there may be different challenges between categories there are no strong differences from the average.

Manufacturing category: export performance test results summary

Table 5.34: Manufacturing category: export performance test results summary

Export Performance	No Brand	OEM	ODM	OBM	Mixed	Total
Export Focused Sample						
Sample Size	21	35	4	27	36	123
Revenue Growth						
- Mean	4%	12%	11%	-4%	-5%	2%
- Median	0%	0%	6%	-2%	-6%	-2%
- Max	140%	300%	32%	11%	79%	300%
- Min	-37%	-32%	0%	-38%	-50%	-50%
Net Profit Growth						
- Mean	-68%	-13236%	894%	-53%	-1087%	-4079%
- Median	-15%	-7%	25%	5%	27%	0%
- Max	1654%	1098%	3526%	176%	1203%	3526%
- Min	-1313%	-448647%	0%	-1319%	-25860%	-448647%
Net Profit Margin						
- Mean	-6%	-14%	2%	0%	-2%	-5%
- Median	0%	0%	2%	0%	0%	0%
- Max	6%	14%	6%	4%	19%	19%
- Min	-109%	-335%	-1%	-12%	-43%	-335%

Academia and business tend to have the common belief that by moving up the value chain from no brand to OEM, from OEM to ODM and from ODM to OBM, firms should perform better and achieve a higher profit margin.

At first glance, it seems that OBM and ODM firms perform better in profit growth and profit margin. In terms of net profit growth and net margin, ODM and OBM firms seem to perform better than others. ODM firms have an average net profit growth of 894% while for OBM firms it is -53%, compared with an average growth of -4,079%. In terms of net profit margin, ODM and OBM firms have a better average than others, with 2% and 0% respectively. However, in terms of revenue growth, OBM firms are among one of the worst performing groups with a revenue decrease of 4% compared to an average growth of 2%.

However, **we are unable to see a difference in financial performance among firms of various manufacturing types**. Those in the OBM category have revenue growth in the range -38% to 11%, net profit growth of -1319% to 176% and net profit margin of -12% to 4%. Similarly, ODM firms have revenue growth of 0% to 32%, net profit growth of 0% to 3526% and net profit margin of -1% to 6%. Should the common belief be correct, the results should illustrate that we see the results of ODM and OBM firms concentrated in the positive range not the negative. But we see that ODM firms seem to have a better median of 6% while OBM firms achieve a worse median revenue growth than no-brand and OEM firms. Furthermore, the range between the highest and lowest revenue growth for all categories is so wide that firms in various categories can achieve high or low growth. Furthermore, we should see higher financial results, particularly the net profit margin of OBM and ODM firms, than those of OEM and no-brand firms. But we are able to see that OBM, OEM and no-brand firms have a

similar median net profit margin at 0%. Moreover, an OEM firm has a higher net profit margin (14%) than firms that are able to achieve a higher net profit margin in the OBM (4%) and ODM (6%) categories. These results show that **type of manufacturing has no effect on a firm's performance as many suggest.**

Manufacturing category: export performance test results conclusion

Table 5.35: Export performance test results conclusion for manufacturing category

Internal Consistency	No Brand	OEM	ODM	OBM	Mixed
Sample Size	21	35	4	27	36
Performance					
- Revenue growth	No	No	No	No	No
- Net profit growth	No	No	No	No	No
- Net profit margin	No	No	No	No	No

The results from the analysis above suggest that, similar to the results of governance, lead firm and upgrading groups, there is no clear relationship between firm performance and type of manufacturing. We therefore conclude that **there is no clear relationship between type of manufacturing and firm performance.**

Manufacturing category: differential dynamic test results conclusion

Table 5.36: Differential dynamic test results conclusion for manufacturing category

Differential Dynamic Test	No Brand	OEM	ODM	OBM	Mixed	Total
Export Focused Sample						
Sample Size	21	35	4	27	36	123
Structure of Sector						
- % of textile	33%	34%	25%	44%	36%	37%
- % of clothing	67%	66%	75%	56%	64%	63%
Market Structure Test						
% of export focused firms	51%	88%	44%	79%	82%	51%
% of export only firms	24%	50%	33%	35%	34%	36%
Growth Bias Test						
- % of firms that have positive revenue growth	38%	43%	75%	33%	28%	37%
- % of positive revenue growth for textiles	0%	33%	0%	25%	23%	22%
- % of positive revenue growth for clothing	57%	48%	100%^{AB}	40%^{A}	30%^{A}	45%
- % of firms that have positive profit growth	33%	31%^{A}	75%	52%	58%^{A}	46%
- % of textile firms that have positive profit growth	0%	42%	0%	42%	46%^{A}	36%
- % of clothing firms that have positive profit growth	50%	26%^{A}	100%^{A}	60%	65%^{A}	51%
- % of firms that have positive margin	38%	51%	50%	52%	58%	51%
- % of textile firms that have positive margin	14%	50%	0%	58%	62%	49%
- % of clothing firms that have positive margin	50%	52%	67%	47%	57%	53%

We do not include ODM in the analysis due to the low sample sizes
A indicates results comparatively distinct from other typologies
B indicates results comparatively distinct from sample average

The results indicate that there are no differences in firm structure, market structure and growth bias among various manufacturing types.

In terms of sector structure, there are no significant differences for no-brand, OEM and mixed groups. There seems to be a similar percentage of textile and clothing firms within the group. However, there seems to be a high proportion of textile firms in the OBM group with 44% compared with a total average of 37%. This indicates that textile firms have a tendency to focus on branding more than clothing firms. However, there are no statistical differences between groups and the average. Furthermore, there seems to be a high proportion of clothing firms in the ODM group with 75% compared with a total average of 63%. But the sample size of the ODM group is so small that we are unable to confirm our findings.

Furthermore, firms in the OEM and OBM groups seem to focus on export markets; 88% of OEM and 79% of OBM firms are export focused, i.e. they export more than 50% of their total sales. This is significantly higher than in other groups and higher than average. Furthermore, 50% of OEM firms export 100% of their products. Nevertheless, we are unable to see significant bias between those

manufacturing groups. We are therefore not able to conclude that there is a differential dynamic for OEM and OBM groups that are able to export more than firms in other groups.

The findings table illustrates that the ODM group could have performed better in terms of growth and profit, but the sample size is too small – four samples – to be able to interpret the results with confidence. We are therefore unable to confirm any differences for the ODM group.

Though we are unable to see differences in aggregate revenue growth among different types of manufacturing, we are able to see some differences in revenue growth when we look at them by sector. Textile firms that are OEM and OBM seem to have higher revenue growth than those that have no brand. This indicates that textile firms that focus on branding are doing better than those that have no brand. At the same time, no-brand and OEM clothing firms tend to have higher revenue growth than OBM and mixed firms. This indicates that, contrary to the common belief that OBM firms perform better than OEM firms, clothing firms that focus on production, like OEM and no brand, perform better than those focused on other things like branding.

In terms of profit growth, different manufacturing types could have different effects on different sectors. Textile firms in the no-brand group seem to have the lowest percentage profit growth while clothing firms in the OEM group have the lowest percentage. In addition, textile firms in the no-brand group have the lowest positive margin compared to all groups. This indicates that having no brand could have a negative impact on profit growth and profit margin, however no other manufacturing type has an impact on performance.

Apart from textile firms in the no-brand group, we cannot see the difference in net profit margins among different manufacturing types. They have very similar patterns in that more than 50% of firms in both textiles and clothing tend to have positive net margins. However, the results do not indicate any differences among firms in various groups.

Table 5.37: Differential dynamic conclusion for manufacturing category

Differential Dynamic Test	No Brand	OEM	ODM	OBM	Mixed
Export Focused Sample					
Sample Size	21	35	4	27	36
Structure of Sector					
- % of textile	No	No	n.a.	No	No
- % of clothing	No	No	n.a.	No	No
Market Structure Test					
% of export focused firms	No	No	n.a.	No	No
% of export only firms	No	No	n.a.	No	No
Growth Bias Test					
- % of firms that have positive revenue growth	No	No	n.a.	No	No
- % of positive revenue growth for textiles	No	No	n.a.	No	No
- % of positive revenue growth for clothing	No	No	n.a.	May Be	May Be
- % of firms that have positive profit growth	No	May Be	n.a.	No	May Be
- % of textile firms that have positive profit growth	No	No	n.a.	No	May Be
- % of clothing firms that have positive profit growth	No	May Be	n.a.	No	May Be
- % of firms that have positive margin	No	No	n.a.	No	No
- % of textile firms that have positive margin	No	No	n.a.	No	No
- % of clothing firms that have positive margin	No	No	n.a.	No	No

The results illustrate that there is no difference in the proportion of textile and clothing firms in various manufacturing categories. However, we see that those in the no-brand group have domestic bias while the OEM group tends to have export bias.

There is an indication that different types of manufacturing may affect firm performance. The results illustrate that textile firms in the no-brand group tend to have the lowest percentage of revenue growth, profit growth and net margin. This implies that branding could be more important in textiles. Contrary to the belief that no-brand firms perform worse than other manufacturing types, the results illustrate that more no-brand clothing firms achieve revenue growth, while those in the mixed group have low revenue growth.

Furthermore, we found that a very low percentage of firms in the no-brand and OEM groups have profit growth, while other groups have a significantly higher percentage that achieve profit growth. This indicates that those in the OEM group might need to sacrifice their profit to generate higher revenue. However, we are unable to see differences in distinct profit margin among manufacturing categories apart from in textile firms in the no-brand group.

Conclusion for manufacturing categories

The results clearly show that the type of manufacturing does not lead to a differential in the performance of firms. Firms in various types of manufacturing are able to achieve either positive or negative performance, probably depending on their capability. However, we can see that there could be opportunities to perform better in some types of manufacturing, depending on industry sector. For example, the no-brand textile group tends to have a lower percentage of revenue growth while the OBM textile group has a higher percentage. But more firms in the no-brand clothing group achieve revenue growth, while those in the mixed group have low revenue growth.

Furthermore, we are unable to clearly see that manufacturing type has a connection with lead firm, governance and upgrading type. The results illustrate that each manufacturing type has a comparable distribution of those variables. This implies that lead firms, governance and, particularly, upgrading type, do not have an impact on manufacturing model. This also suggests that those variables do not have an 'indirect' impact on firm performance.

5.1.6 Global value chain test conclusion

The global value chain theory says that governance and control imposed by lead firms have an influence on industrial upgrading and performance of firms. In addition, GVC advocates claim that various types of upgrading can lead to 'moving value chain' which will increase firms' profitability. As the research question attempts to identify key variables that differentiate the performance of the textile and clothing sectors, we therefore examined various groups of variables associated with GVC with the performance of firms. The results seem to illustrate the following:

- In terms of governance variables, there are no statistical differences in product and process upgrading among various governance types; only a low percentage of modular governance firms perform product upgrading. However, we found significant differences in functional upgrading. We found that a low percentage of firms in captive and modular governance perform functional upgrading. This confirms the claim by Humphrey and Schmitz (2000) that lead firms in these governance types tend to have core competence in design, branding and marketing and, therefore, will block production firms in moving to their territory.

- In terms of trade intermediary variables, the lead firms category does not have a clear and strong relationship with upgrading and performance. However, there is indication that retailers may provide better opportunities for textile firms to perform better than other groups.

- In terms of upgrading variables, we can see that textile firms that perform process upgrading have a better chance of a positive profit margin. At the same time, clothing firms that conduct various types of upgrading have a better chance of achieving positive profit growth. Those clothing firms that do nothing seem to have less chance of positive profit growth.

- In terms of manufacturing variables, we can see that a smaller percentage of no-brand textile firms perform well. Textile firms that are OEM and OBM seem to have higher revenue growth than those that have no brand. In addition, no-brand and OEM clothing firms seem to have higher revenue growth than OBM but less positive profit growth.

Though we are able to see some relationships between variables associated with the global value chain literature such as governance with upgrading or upgrading with profit margin, we are unable to see that these GVC variables have a strong impact on a firm's performance. The examination of variables associated with the GVC framework illustrates that, in general, there are no obvious

factors from the theory that differentiate types of upgrading experience or performance. The statistical analysis and differential dynamic analysis confirm that, no matter what technique we adopt, there is no significant difference in performance of firms in various GVC groups. We are able to see, in each GVC category, many firms that perform well and others that perform poorly. The results are very scattered and show a very weak relationship.

The results imply that many firms survive, however all firms in the category are not what generate Thailand's aggregate trend; there are many firms in the same category that cannot survive. From the analyses we have learnt that aggregate trends and data do not reflect or reveal the experiences of a lot of companies that share common factors, e.g. governance, trade intermediary, upgrading or manufacturing type. The aggregate trends probably reflect the performance of relatively few firms in the category; there are many other firms in the same category that are able to achieve the same as the better performing firms. Using such a research method where theoretical categories force groups of surviving firms together with those that are declining or closing, we will never find any common factors that differentiate them.

If these GVC variables are not key to differential growth between Thailand's textile and clothing sectors, are there any factors that differentiate them? In the next section, we will go back to the research question 'What differentiates export performance of the textile and clothing sectors?'. We will try to identify the reason for different performance between the two sectors. We will then try to look at well-performing firms in the textile and clothing sectors and attempt to identify key variables that differentiate the performance between the two groups. We will then attempt to offer an alternative interpretation and describe how firms try to grow/survive compared with firms that are failing.

5.2 Performance analysis

In the previous section, we have attempted to test various hypothetical groups with different factors: upgrading, upgrading experience and financial performance. The results illustrate that no clear GVC variables are able to differentiate types of upgrading experience or performance. This chapter will return to the thesis questions about what explains aggregate differences in dynamics between the textile and clothing sectors. We attempt to identify variables or groups of variables that determine better firm performance and describe how firms are trying to grow/survive compared with firms that are failing.

To do the performance test, we firstly reclassified the sample firms into four types of value chain that we identified in chapter 4: domestic textile, export textile, domestic clothing and export clothing. We then broke down the four value chains into the following performance groups:

1. High revenue growth group (average 2008-2009 growth is higher than 10% p.a.)
2. Normal revenue growth (average 2008-2009 growth between 0-10% p.a.)
3. Moderate revenue decline (average 2008-2009 growth between -10 to 0% p.a.)
4. High revenue decline (average 2008-2009 growth below -10% p.a.)

Each of the four performance groups in each type of value chain was then examined to see whether there are significant differences in the contribution of an individual variable associated with the business model. Though the performance of firms was reclassified into four groups, only two were compared to test the differences between the well- and poorly performing groups. The well-performing group consists of firms that had positive average revenue growth between 2008 and 2009 while those with poor performance had negative average revenue growth in the same period. The variable is significant if the differences between the percentages of the two groups are greater than 20%. A detailed analysis is illustrated in appendices C-F.

5.2.1 Performance analysis results

Table 5.38: Performance analysis for Thailand's textile and clothing industry

	High revenue growth group			Normal revenue growth			Moderate revenue decline			High revenue decline		
	% of firms in the group	Median % change in revenue	Median revenue size (Mil Baht)	% of firms in the group	Median % change in revenue	Median revenue size (Mil Baht)	% of firms in the group	Median % change in revenue	Median revenue size (Mil Baht)	% of firms in the group	Median % change in revenue	Median revenue size (Mil Baht)
Export Textiles	4%	47%	930.63	18%	5%	317.93	47%	-4%	331.75	31%	-18%	239.41
Export Clothing	21%	24%	220.02	24%	6%	277.81	26%	-3%	117.07	29%	-19%	159.68

The table above illustrates key drivers for differential dynamic growth in Thailand's textile and clothing industry. We are able to recognise the following:

1) Large export textile firms are a major driver for aggregate export growth. Their extremely high growth rate and large size are key contributions to textile export growth. The large firm size together with the significant growth rate help offset the decrease in textile exports from non-performing export textile firms. Though the sample illustrates a high percentage of export textile firms (78%) that fall into the non-performing group, the revenue size and decrease in revenue of a non-performing textile firm are significantly lower than those of a well-performing firm.

2) On the other hand, a high percentage of export clothing firms have strong revenue growth. However, the impact of revenue growth of these firms on the aggregate data is quite trivial because their revenue size is significantly lower than that of high-growth textile firms – around four times smaller. In addition, the mean revenue growth rate of the clothing group is significantly lower, around 1.9 times. Moreover, many high-growth clothing firms are very small; their revenue growth therefore has quite a low and insignificant impact on the aggregate export figure.

3) The medium to large clothing firms are not able to support stronger growth for clothing export value. This is because they do not have an extremely high growth rate; they normally fall into the normal growth group. With mediocre size and not such a high growth rate, they cannot contribute much to the aggregate value. Firms that fall into this category enjoy an acceptable return for their effort and investment without taking more risk in order to grow.

Table 5.39: % making net loss

	High decline	Normal decline	Normal growth	High growth
Domestic Textiles	60%	6%	50%	38%
Export Textiles	50%	24%	13%	0%
Export Clothing	52%	45%	16%	31%
Domestic Clothing	100%	0%	0%	0%

Table 5.40: % making negative margin

	High decline	Normal decline	Normal growth	High growth
Domestic Textiles	60%	19%	50%	38%
Export Textiles	57%	38%	38%	0%
Export Clothing	61%	45%	16%	31%
Domestic Clothing	100%	17%	0%	0%

Table 5.41: Mean profit margin

	High decline	Normal decline	Normal growth	High growth
Domestic Textiles	-0.8%	0.7%	-0.3%	-0.5%
Export Textiles	-6.0%	-0.4%	1.1%	10.1%
Export Clothing	-3.2%	-18.2%	1.6%	-12.4%
Domestic Clothing	-2.1%	0.2%	2.2%	0.0%

4) One other factor that contributes to the not-so-high increase or decrease in clothing exports is the lower rate of survival in the market. The normal decline and high-growth clothing groups have a significantly high level of firms that make a loss; 45% vs 24% and 31% vs 0%. This could imply that many clothing firms that cannot compete and face a significant decline in their business have a higher probability of closing down than the textile firms.

5) In addition, the increase in the export value for textiles could possibly be due to local-focus textile firms attempting to enter the international market due to a slowing down of domestic demand. The data show that there are a good number of medium-sized textile firms that are able to achieve higher growth. If equipped with manufacturing capacity and marketing abilities these firms could be the growth engine for Thailand's textile sector.

The results illustrate more growth opportunities for textiles internationally than clothing, but these textile firms have to be big to grasp such opportunities; if they do, they grow very fast and much faster than clothing. There has been a reorganisation in textiles and in clothing but more so in the textiles sector, where size does matter. We see a high number of textile firms decline in revenue and profitability but this is hidden by the scale of the few companies that have a strong growth rate. Fundamentally, because of the rate of growth and the value of that growth in textiles, a small group of elite firms are pushing up the aggregate, but overall there are not many opportunities for the majority of smaller firms to grow in textiles.

In contrast, there is room in the value chain for more clothing firms to grow but the rate of growth is much slower and the value of that growth is smaller, hence firms are smaller. The rate of decline looks similar for clothing and textiles but a slightly smaller population of clothing firms is in this position compared to textiles. However, the survival ability of clothing firms is far less than that of textile firms. There is a high percentage of firms with moderate decline that have closed down their businesses. This could imply that in the long term these companies could not survive in the competitive market. This is similar to the aggregate data that high numbers of clothing firms have got out of the business in recent years.

So what factors differentiate high-growth textile and clothing firms from the rest? What do high-growth firms do differently that makes them perform better? The next section will adopt variables of business model frameworks to identify such differences. We will identify 'profile patterns' based upon various business model variables to provide us with a clue as to where future attention should focus.

5.2.2 Business model test

This section will examine various attributes and characteristics between well- and poorly performing firms in each of the four value chains of Thailand's textile and clothing industry. The objective is to identify whether there are distinct characteristics for those that perform poorly compared with those that perform well. We adopt a business model framework to identify such distinctive characteristics.

Table 5.42: Nine business model components

Business Model Ontology	Business Model Building Block	Description
Product	Value proposition	Gives an overall view of a company's bundle of products and services.
Customer interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution channel	Describes the various means of the company to get in touch with its customers.
	Customer relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure management	Value configuration	Describes the arrangement of activities and resources.
	Capability/ Core competence	Outlines the competences necessary to execute the company's business model.
	Partnership	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialise value.
Financial aspects	Cost structure	Sums up the monetary consequences of the means employed in the business model.
	Revenue model	Describes the way a company makes money through a variety of revenue flows.

We have adopted some components of business models identified by Osterwalder and Pigneur (see table 5.42). In this examination, we will look at the following business model components:

- Value proposition
- Target customer
- Distribution channel

- Customer relationship
- Core competence

We are not able to identify all components of the framework because of the difficulty of identifying and collecting information on the 'infrastructure management' and 'financial aspects' component of the business model. However, we can use the survey results that correspond with other parts of the business model as a proxy to examine the framework.

To examine the characteristics, we will look at each of the four performance groups in each type of value chain and see whether there are significant differences in the contribution of individual variables associated with the business model. Though we have reclassified performance of firms into four groups, in testing the differences we will compare between two groups: well-performing and poorly performing. The well-performing firms are those that had positive average revenue growth between 2008 to 2009, while the poorly performing firms had negative average revenue growth in the same period. The variable is significant if the difference between the percentages of these two groups is greater than 20%. A detailed analysis is illustrated in appendix. The following section shows the results of the business model test.

5.2.2.1 Export textile business model results

Table 5.43: Characteristics of export textile value chain

Export Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Characteristics				
Years in Operation	30.1	28.3	30.1	13.0
- 0-10	7%	14%	0%	50%
- 10-30	36%	48%	50%	50%
- 30-50	43%	29%	38%	0%
- More than 50	14%	10%	13%	0%
Revenue Size				
- Less than US$1 mil	14%	24%	25%	0%
- 1-5 US$ mil	21%	19%	25%	50%
- 5-10 US$ mil	21%	10%	0%	0%
- More than US$10 mil	43%	48%	50%	50%
Average Revenue Size				
- Mean	962,219,620	477,833,835	688,966,522	930,626,175
- Median	239,411,776	331,753,818	317,926,945	930,626,175
- Min	16,218,093	0	17,761,919	60,433,685
- Max	7,522,995,856	2,754,116,417	2,841,302,656	1,800,818,664
Initial Investment Size				
- Less than US$ 1 mil	50%	24%	38%	50%
- US$ 1 mil – US$ 6 mil	14%	48%	38%	0%
- More than US$ 6 mil	36%	29%	25%	50%
No. of Employees				
- Less than 50	14%	0%	0%	0%
- 50 to 200	43%	48%	63%	50%
- More than 200	43%	52%	38%	50%

We are unable to see distinct differences in the characteristics of firms in both groups. Well-performing or badly performing firms are comparable in characteristics such as years in operation, investment size and number of employees. The only difference we see in characteristics is that firms that perform better seem to have significantly higher revenue than those that perform worse. On average, the firms that do better will receive around US$ 1.9 million (Mean) or US$ 4.2 million (Median) more than those that perform poorly.

Table 5.44: Value proposition of export textile value chain

Export Textiles	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Value Proposition				
Type of Manufacturer				
- Exclusively No Brand	21%	19%	0%	0%
- Exclusively OEM	7%	33%	50%	0%
- Exclusively ODM	0%	5%	0%	0%
- Exclusively OBM	21%	29%	38%	0%
- Dual mode	36%	5%	13%	100%
- Mixed	14%	10%	0%	0%

We are able to see that no-brand producers perform badly. Around 20% of badly performing firm are exclusively no brand compared with 0% for better performing firms. It seems that OEM or OBM groups tend to be better off than others, with a higher percentage of firms in the moderate growth group. However, the figures are not significantly different.

Table 5.45: Target customers of export textile value chain

Export Textiles	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Target Customer				
Export Only	21%	24%	50%	0%
Export Focused	64%	57%	50%	100%
Export Market				
- EU	41%	30%	28%	38%
- USA	23%	24%	57%	30%
- Japan	10%	14%	1%	18%
- China	7%	8%	0%	0%
- ASEAN	13%	16%	14%	0%
- Other	7%	6%	0%	15%

We are able to see that growth firms export more to the USA than those that perform badly. On average, well-performing firms export 20% of their products to the USA, which is more than badly performing firms. On the other hand, those that underperform focus more on Japan, China and other ASEAN countries. This could be because they are unable to enter the EU or USA market due to their product quality.

Table 5.46: Distribution channels of export textile value chain

Export Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Distribution Channel				
Lead Firms				
- Exclusively Retail	7%	5%	13%	100%
- Exclusively Agent	0%	0%	0%	0%
- Exclusively Trader	21%	43%	25%	0%
- Exclusively Buying Office	7%	5%	0%	0%
- Mixed	64%	48%	63%	0%

Furthermore, firms that perform well tend to sell direct to their buyers. Around 30% of growth firms sell via retail compared with only 6% of poorly performing firms. At the same time those that underperform sell 34% via international traders compared with only 20% for growth firms.

Table 5.47: Customer relationships of export textile value chain

Export Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Customer Relationship				
Governance				
- Exclusively Hierarchy	7%	5%	0%	0%
- Exclusively Captive	29%	33%	38%	0%
- Exclusively Relational	43%	38%	38%	100%
- Exclusively Modular	0%	5%	0%	0%
- Exclusively Market	7%	0%	0%	0%
- Mixed	14%	19%	25%	0%

Again, there are no clear differences in governance in various performance groups. However, it seems that firms in the exclusively relational group tend to perform better, though there is no statistical significance.

Table 5.48: Core competences of export textile value chain

Export Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	14	21	8	2
Core Competence				
Upgrading				
- Product upgrading	43%	71%	50%	50%
- Process upgrading	36%	38%	25%	0%
- Functional upgrading	14%	10%	13%	0%
Support from Lead Firms				
- Finance	-0.07	0.29	0.00	-0.50
- HRD	-0.21	0.05	0.00	-0.50
- Design	0.36	0.48	0.38	0.50
- Production	-0.07	0.14	0.25	-0.50
- Marketing	0.29	0.43	0.13	-0.50
- R&D	-0.14	0.29	-0.25	0.50
- Regulation	-0.14	0.05	-0.25	-0.50
Challenges in Upgrading				
- Not interested in upgrading	0%	0%	0%	0%
- Lack of financial support	50%	38%	38%	50%
- Lack of market knowledge	36%	48%	50%	50%
- Unsupportive government policy	29%	29%	13%	50%
- Lead firms block suppliers/trading firms	14%	5%	0%	0%
- International law and regulations (FTA, Quota)	0%	5%	13%	0%
- No skill set	14%	24%	38%	0%
- Technology constraint	43%	52%	63%	50%
- Lack of raw material	64%	52%	50%	100%
- Poor infrastructure	36%	19%	25%	100%
- Invest in other business with higher return	0%	0%	0%	0%

There are also no significant differences in upgrading and challenges in upgrading. Firms in both groups have similar upgrading types and challenges. However, we might notice that there is a higher percentage of process upgrading in poorly performing firms. This could be because they have been too slow in conducting such upgrading, which makes them lag behind those well-performing firms. In addition, we are able to see that poorly performing firms receive more support from lead firms in finance, marketing, R&D and regulations. This does not mean that receiving support results in bad performance, rather that lead firms might see the low level of ability of those poorly performing firms and therefore intervene by helping them improve performance.

Export textiles conclusion

Firms in the export textiles group are the most experienced among all groups, with an average age of 28.6 years compared with 23.4 for all groups. They are also the largest in terms of capital size and employment. Unlike their local textile counterparts, around 65% of their products are still exported to matured markets like the USA and EU. Firms in export textiles seem to have better competitive advantages over their local producers, including lead time, productivity and production capacity. They also receive better support in product design from lead firms. Like firms that export clothing, they utilise international trading agents, retailers and buying offices as their main distribution channels. Export textile firms badly require financial support for their working capital to buy a large inventory of raw material and need to improve technology to compete.

Good performance

There are two distinct characteristics within this group: young modern firms with strong financial support focus on niche markets and mature experienced firms that use diversifying strategies. Firms that do well, though many of them are still OEM and OBM producers, tend to focus on branding and product design. These firms focus on variety and quality of products for their customers. They are able to create direct relationships with their customers through retailers. They also have a large number of buyers with long-term relationships to help them enter international markets.

Bad performance

Firms in this group are large outdated firms that are not able to develop their own brand and focus mainly on no-brand products. They also focus on cost and efficiency rather than product or brand development. They have only just started to perform process upgrading but probably too late. They have a less exclusive relationship with distributors and focus on mixed channels. These firms tend to receive support from lead firms in finance, human resources development and R&D.

5.2.2.2: Export clothing business model results

Table 5.49: Characteristics of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Characteristics				
Years in Operation	22.7	19.3	24.1	19.4
- 0-10	9%	25%	5%	31%
- 10-30	78%	65%	74%	63%
- 30-50	13%	10%	16%	6%
- More than 50	0%	0%	5%	0%
Revenue Size				
- Less than US$1 mil	4%	35%	11%	13%
- 1-5 US$ mil	48%	30%	37%	31%
- 5-10 US$ mil	13%	15%	16%	13%
- More than US$10 mil	35%	20%	37%	44%
Average Revenue Size				
- Mean	731,234,557	180,239,544	491,257,212	633,725,763
- Median	159,678,518	117,072,716	277,814,625	220,022,048
- Min	28,485,312	0	3,546,571	14,024,729
- Max	4,673,430,500	742,761,036	1,639,059,330	3,328,740,100
Initial Investment Size				
- Less than US$ 1 mil	91%	65%	68%	56%
- US$ 1 mil – US$ 6 mil	4%	25%	26%	38%
- More than US$ 6 mil	4%	10%	5%	6%
No. of Employees				
- Less than 50	13%	10%	11%	13%
- 50 to 200	26%	55%	53%	31%
- More than 200	61%	35%	37%	56%

There are no clear distinctions in characteristics between well-performing and poorly performing export clothing firms. Typically they have been operating for a similar length of time to domestic clothing firms and are smaller than textile firms. Most of the export clothing firms are small with many employees. Large well- and poorly performing firms are well distributed, however we are able to see that firms that perform well tend to be relatively larger than those in the decline group. 91% of firms that have seen an extreme decline in revenue are small firms compared with 68% and 56% in the moderate growth and extreme growth group. This suggests that good performance could be affected by size. Furthermore, we are able to see that firms that perform better tend to have larger revenue size than poorly performing firms – US$ 2.3 million (Mean) and US$ 3.2 million (Median).

Table 5.50: Value propositions of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Value Proposition				
Type of Manufacturer				
- Exclusively No Brand	17%	10%	21%	25%
- Exclusively OEM	35%	20%	26%	38%
- Exclusively ODM	0%	0%	11%	6%
- Exclusively OBM	9%	35%	26%	6%
- Dual mode	39%	30%	16%	19%
- Mixed	0%	5%	0%	6%

There are no significant differences in type of manufacturing in these groups. Most clothing firms are no brand and OEM. However, it seems that dual-model firms perform poorly compared with those that focus on other manufacturing types.

Table 5.51: Target customers of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Target Customer				
Export Only	43%	70%	53%	88%
Export Focused	52%	30%	47%	13%
Export Market				
- EU	37%	39%	46%	44%
- USA	37%	24%	40%	24%
- Japan	14%	6%	4%	17%
- China	2%	2%	0%	0%
- ASEAN	5%	15%	2%	9%
- Other	5%	14%	7%	6%

There are also no differences in export market between well- and poorly performing groups. However, it seems that a higher percentage of well-performing firms are more focused on export with a higher percentage in export only. Furthermore, they tend to export more to the EU and USA. However, the differences are not significant.

Table 5.52: Distribution channels of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Distribution Channel				
Lead Firms				
- Exclusively Retail	9%	5%	11%	0%
- Exclusively Agent	0%	0%	0%	0%
- Exclusively Trader	17%	25%	21%	19%
- Exclusively Buying Office	4%	0%	5%	13%
- Mixed	70%	70%	63%	69%

Furthermore, as we found in the GVC analysis, the results do not show that different types of lead firm have an impact on performance. We see a similar distribution of lead firms in all types of performance. Though we are able to see that there is a higher percentage of growth firms exclusively using buying offices, this is not significantly different.

Table 5.53: Customer relationships of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Customer Relationship				
Governance				
- Exclusively Hierarchy	4%	0%	0%	19%
- Exclusively Captive	13%	25%	32%	19%
- Exclusively Relational	26%	45%	37%	19%
- Exclusively Modular	17%	10%	21%	31%
- Exclusively Market	13%	10%	0%	6%
- Mixed	26%	10%	11%	6%

Again, we are unable to see a strong relationship between governance and firm performance. Thai firms always have relational, captive or modular governance relationships with their buyers. We can see that there is a higher percentage of modular governance in the growth group; this implies that modular governance allows better performance or modular governance firms have higher abilities than firms with other governance types. However, the results are not statistically different.

Table 5.54: Core competences of export clothing value chain

Export Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	23	20	19	16
Core Competence				
Upgrading				
- Product upgrading	48%	45%	68%	63%
- Process upgrading	48%	30%	53%	31%
- Functional upgrading	9%	45%	32%	13%
Support from Lead Firms				
- Finance	-0.13	0.20	0.05	-0.25
- HRD	-0.04	0.20	0.05	0.00
- Design	0.57	0.50	0.63	0.31
- Production	0.26	0.30	0.21	0.06
- Marketing	0.22	0.40	0.16	0.00
- R&D	0.30	0.25	0.00	-0.13
- Regulation	-0.17	0.25	-0.16	-0.19
	0.14	0.30	0.14	-0.03
Challenges in Upgrading				
- Not interested in upgrading	0%	5%	0%	6%
- Lack of financial support	22%	45%	26%	44%
- Lack of market knowledge	26%	45%	47%	31%
- Unsupportive government policy	22%	30%	21%	6%
- Lead firms block suppliers/trading firms	4%	0%	5%	0%
- International law and regulations (FTA, Quota)	17%	5%	5%	6%
- No skill set	26%	50%	32%	19%
- Technology constraint	26%	30%	47%	19%
- Lack of raw material	22%	20%	53%	44%
- Poor infrastructure	17%	25%	32%	13%
- Invest in other business with higher return	0%	0%	5%	0%

A high percentage of well-performing firms tends to focus on product upgrading compared with poorly performing firms. However, lead firms seem to support those that are doing badly rather than those that are doing better. In addition, poorly performing firms tend to lack market knowledge and skill sets to compete in the global arena.

Export clothing conclusion

There is a very homogeneous business model in this group. Firms in the export clothing group have a small initial investment but use a lot of labour. They all focus on OEM and major mature markets like the EU and USA and tend to use fewer small agents as distributors. They also tend to receive more support in production design than local clothing firms and do more product and own-brand upgrading than those in the local focus group.

Good performance

Firms in this group are relatively larger than those in the local clothing group. They are very focused on their market and core business, which is the production and design of the product, rather than marketing and branding. 65% of the firms therefore concentrate on no-brand and OEM production, compared with 51% of local clothing firms and focus more on product upgrading. They also focus more on the export market; 69% export only and 70% export only to the USA and EU. These firms have a strong customer relationship network as they use various types of distributor to export their products, while keeping long-term relationships with a few large producers. They have the capability to produce products from beginning to end as they have modular relationships with their buyers. Some firms attempt to build brands but are blocked or limited by lead firms, as they do not want producers to upgrade and compete with them in branded or retail markets. Furthermore, firms in this group do not have the proper skill sets to compete in such an environment.

Bad performance

Firms that are not able to scale and use mixed manufacturing types are the ones that perform badly. They lose their competitive advantage from low-cost producers like China and Vietnam, so they try to use various business models to compete with them. However, their strategy is unclear and mixed; they try to use mixed manufacturing models and export markets to diversify their portfolio and tend to produce men's and women's wear products, which are easily and cheaply produced in other countries. Instead of focusing on mature markets, they focus on China and ASEAN, which require lower quality. They tend to have fewer competitive advantages than other producers and require much support from lead firms.

5.2.2.3: Domestic clothing business model results

Table 5.55: Characteristics of domestic clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Characteristics				
Years in Operation	21.0	23.2	28.0	0
- 0-10	0%	33%	0%	0%
- 10-30	100%	17%	33%	0%
- 30-50	0%	50%	67%	0%
- More than 50	0%	0%	0%	0%
Revenue Size				
- Less than US$1 mil	100%	83%	33%	0%
- 1-5 US$ mil	0%	0%	0%	0%
- 5-10 US$ mil	0%	0%	0%	0%
- More than US$10 mil	0%	17%	67%	0%
Average Revenue Size				
- Mean	30,171,794	660,938,720	794,318,457	0
- Median	30,171,794	0	751,857,319	0
- Min	30,171,794	0	9,432,029	0
- Max	30,171,794	3,965,632,318	1,621,666,022	0
Initial Investment Size				
- Less than US$ 1 mil	0%	50%	33%	0%
- US$ 1 mil – US$ 6 mil	100%	50%	0%	0%
- More than US$ 6 mil	0%	0%	67%	0%
No. of Employees				
- Less than 50	0%	50%	0%	0%
- 50 to 200	100%	0%	33%	0%
- More than 200	0%	50%	67%	0%

The sample size for the domestic clothing group is very small, only 6% of the total sample. This does not mean that Thailand has only a handful of domestic clothing manufacturers. In fact, there are many domestic producers, but this type of producer is not classified as 'manufacturer' or 'factory' under the Ministry of Industry definition. Many domestic producers are not captured in this survey.

Since we have a small sample size, we are unable to confirm the findings in this group with confidence. However, we can only discuss what we are able to observe from the data.

We see that firms that perform well are more experienced and have larger revenue size and larger investment. Many of these firms also have a higher number of employees. However, we also observe that many low-performance firms have a high number of employees though they have lower revenue size or investment; this indicates inefficiency in poorly performing firms' production.

Table 5.56: Value propositions of local clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Value Proposition				
Type of Manufacturer				
- Exclusively No Brand	0%	67%	0%	0%
- Exclusively OEM	0%	0%	33%	0%
- Exclusively ODM	100%	17%	0%	0%
- Exclusively OBM	0%	17%	33%	0%
- Dual mode	0%	0%	33%	0%
- Mixed	0%	0%	0%	0%

These poorly performing firms have various manufacturing types including no brand and ODM; at the same time those that perform well are OEM and dual mode. However, we are unable conclude such findings since the sample size is too small.

Table 5.57 Target customers of domestic clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Target Customer				
Export Only	0%	0%	0%	0%
Export Focused	0%	0%	0%	0%
Export Market				
- EU	5%	7%	40%	0%
- USA	15%	3%	8%	0%
- Japan	0%	28%	22%	0%
- China	0%	2%	3%	0%
- ASEAN	80%	33%	27%	0%
- Other	0%	28%	0%	0%

Firms that are able to perform better are normally able to export their products to the EU while those that perform poorly are able to export more of their products to ASEAN and other markets. This could be because they do not have products that meet EU market demand but are able to find channels to these emerging markets.

Table 5.58: Distribution channels of domestic clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Distribution Channel				
Lead Firms				
- Exclusively Retail	0%	0%	33%	0%
- Exclusively Agent	0%	17%	0%	0%
- Exclusively Trader	100%	33%	33%	0%
- Exclusively Buying Office	0%	0%	0%	0%
- Mixed	0%	50%	33%	0%

The data illustrate that one firm in the growth group and no firms in the decline group use retail exclusively as their sole distributor. At the same time one in the decline group and none in the high-performance group use individual agents as their sole distributors. This does not mean that retail

is better than individual agents since the sample size is very small. We therefore conclude that there is no clear relationship between distribution channels and performance. Various types of lead firm are well distributed among all performance groups.

Table 5.59: Customer relationships of domestic clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Customer Relationship				
Governance				
- Exclusively Hierarchy	0%	0%	0%	0%
- Exclusively Captive	100%	0%	0%	0%
- Exclusively Relational	0%	17%	0%	0%
- Exclusively Modular	0%	17%	33%	0%
- Exclusively Market	0%	50%	33%	0%
- Mixed	0%	17%	33%	0%

The results illustrate that none of the growth firms have hierarchy, captive or relational governance. Again, this does not mean that these governance types do not allow growth but the sample size is too small to make any concrete decision, hence we do not see a clear relationship between governance and performance. Various governance types are well distributed among all performance groups.

Table 5.60: Core competences of domestic clothing value chain

Local Clothing	High decline	Normal decline	Normal growth	High growth
Sample Size	1	6	3	0
Core Competence				
Upgrading				
- Product upgrading	0%	50%	0%	0%
- Process upgrading	100%	33%	67%	0%
- Functional upgrading	0%	17%	0%	0%
Support from Lead Firms				
- Finance	0.00	0.17	0.00	0.00
- HRD	0.00	0.17	0.00	0.00
- Design	0.00	0.00	-0.67	0.00
- Production	0.00	0.17	0.33	0.00
- Marketing	-1.00	0.17	0.33	0.00
- R&D	0.00	0.17	-0.33	0.00
- Regulation	0.00	0.17	-0.33	0.00
Challenges in Upgrading				
- Not interested in upgrading	0%	0%	33%	0%
- Lack of financial support	0%	17%	0%	0%
- Lack of market knowledge	0%	50%	0%	0%
- Unsupportive government policy	100%	50%	33%	0%
- Lead firms block suppliers/trading firms	0%	0%	0%	0%
- International law and regulations (FTA, Quota)	0%	0%	0%	0%
- No skill set	0%	33%	0%	0%
- Technology constraint	0%	17%	0%	0%
- Lack of raw material	100%	33%	0%	0%
- Poor infrastructure	0%	50%	0%	0%
- Invest in other business with higher return	0%	33%	0%	0%

The results illustrate that growth firms tend to focus on process improvement while no-growth firms focus on product and functional improvement. At the same time, growth firms receive more support in production and market information than low-growth firms, which receive support in R&D and regulations. Finally, it seems that low-growth firms have lower abilities than high-growth firms because they face many challenges in upgrading such as lack of market knowledge, skill sets and financial support.

Domestic clothing conclusion

There are heterogeneous business models in local clothing firms, from small- or medium-sized own-branded shops to large-scale OBM or ODM producers. There tend to be fewer OEM manufacturing types. They also focus on the ASEAN market. Smaller scale firms, since they are unable to employ large international trading firms, therefore utilise small agents as one of their major distribution channels. Instead of having long-term relationships as other producers do, they tend to have market relationships with their buyers. Firms in this group lack support in design. Many have not been upgraded for quite some time and intend to exit the industry soon.

Good performance

Those local clothing firms that have revenue growth are large OEM and dual-manufacturer players that are able to scale. They focus on mature markets like the EU and Japan. Though they try to move to OBM they are unable to do so because they are limited in product design by their lead firms; they therefore focus on their production capability. As a large company, they can afford trading agents and buying offices as main distributors. They do not have strong or long-term relationships with buyers but tend to focus on mixed and modular relationships with them. The small OBM firms whose revenue and profit have increased produce very niche products and deploy very focused strategies in terms of product, market and distribution channel.

Bad performance

These firms lose their revenue but are able to make a profit. Again, there are many business models within this group. For example, medium-sized players still make a profit but cannot scale and start to lose their money. They are no-brand and ODM producers and try to increase export, particularly to the ASEAN market. The only firm that makes a loss is relatively young, cannot scale, focuses on key clients, relies only on international traders and focuses only on design. The firm also uses a diversifying strategy in order to grow. Small players that lose their revenue adopt a diversifying strategy with their no-brand products. They try to enter the ASEAN, Japanese and other emerging markets. They also use various channels to enter the markets, particularly small agents.

5.2.2.4 Domestic textile business model results

Table 5.61: Characteristics of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Characteristics				
Years in Operation	31.0	19.4	23.5	14.5
- 0-10	0%	25%	0%	25%
- 10-30	40%	63%	83%	75%
- 30-50	60%	13%	17%	0%
- More than 50	0%	0%	0%	0%
Revenue Size				
- Less than US$1 mil	0%	44%	0%	50%
- 1-5 US$ mil	0%	6%	50%	13%
- 5-10 US$ mil	40%	25%	17%	0%
- More than US$10 mil	60%	25%	33%	38%
Average Revenue Size				
- Mean	692,569,148	203,305,067	877,407,902	207,598,991
- Median	391,557,532	120,306,080	173,084,053	48,448,812
- Min	177,405,198	0	36,966,234	5,329,951
- Max	1,665,258,086	876,945,952	4,178,014,788	577,430,507
Initial Investment Size				
- Less than US$ 1 mil	20%	50%	50%	38%
- US$ 1 mil – US$ 6 mil	40%	38%	17%	38%
- More than US$ 6 mil	40%	13%	33%	25%
No. of Employees				
- Less than 50	0%	31%	17%	25%
- 50 to 200	40%	38%	33%	38%
- More than 200	60%	31%	50%	38%

It seems those that do well are the younger firms. They also tend to have a high percentage in US$ 1-5 million revenue size, while poorly performing firms have higher percentage in US$ 5-10 million revenue size. Again, there is no significant difference in investment and number of employees between those that do well and those that do not.

Table 5.62: Value propositions of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Value Proposition				
Type of Manufacturer				
- Exclusively No Brand	40%	50%	17%	63%
- Exclusively OEM	20%	19%	0%	0%
- Exclusively ODM	0%	13%	0%	13%
- Exclusively OBM	20%	6%	33%	13%
- Dual mode	0%	13%	33%	13%
- Mixed	20%	0%	17%	0%

Those that do poorly seem to be OEM producers while those that do well are those that have no brand or have adopted dual mode manufacturing. However, as we found earlier, there is no clear relationship between type of manufacturing and firm performance.

Table 5.63: Target customers of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Target Customer				
Export Only	0%	0%	0%	0%
Export Focused	0%	0%	0%	0%
Export Market				
- EU	13%	11%	12%	10%
- USA	26%	11%	19%	13%
- Japan	12%	6%	4%	6%
- China	5%	12%	19%	3%
- ASEAN	30%	33%	37%	44%
- Other	14%	28%	9%	24%

There are no clear differences in export market between well- and badly performing groups. Unlike export-oriented firms they are unable to export their products to the EU, USA or Japan. Rather, they focus on ASEAN and China. However, those that do well seem to have a higher percentage of firms that export to ASEAN while a smaller percentage export to other countries.

Table 5.64: Distribution channels of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Distribution Channel				
Lead Firms				
- Exclusively Retail	0%	31%	0%	13%
- Exclusively Agent	0%	0%	0%	13%
- Exclusively Trader	40%	13%	17%	25%
- Exclusively Buying Office	0%	0%	0%	0%
- Mixed	60%	56%	83%	50%

Those that do poorly seem to be in the exclusively retail group. However, we are unable to see a strong relationship between distribution channels and performance.

Table 5.65: Customer relationships of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Customer Relationship				
Governance				
- Exclusively Hierarchy	0%	6%	0%	0%
- Exclusively Captive	0%	19%	17%	13%
- Exclusively Relational	40%	50%	50%	38%
- Exclusively Modular	0%	0%	17%	13%
- Exclusively Market	0%	13%	0%	38%
- Mixed	60%	13%	17%	0%

Modular and market governance seem to allow firms to perform better. However, the results are not strongly different between the well- and poorly performing groups. We therefore conclude that there is no relationship between governance and firm performance.

Table 5.66: Core competences of domestic textile value chain

Local Textile	High decline	Normal decline	Normal growth	High growth
Sample Size	5	16	6	8
Core Competence				
Upgrading				
- Product upgrading	60%	63%	67%	63%
- Process upgrading	40%	19%	83%	25%
- Functional upgrading	40%	25%	0%	50%
Support from Lead Firms				
- Finance	0.20	0.13	-0.33	0.25
- HRD	-0.20	0.19	-0.50	0.25
- Design	0.20	0.13	-0.50	0.13
- Production	-0.20	0.13	-0.50	0.25
- Marketing	0.00	0.44	-0.17	0.63
- R&D	-0.20	0.25	-0.50	0.25
- Regulation	0.20	0.00	-0.50	0.00
Challenges in Upgrading				
- Not interested in upgrading	0%	0%	0%	0%
- Lack of financial support	40%	13%	17%	25%
- Lack of market knowledge	20%	38%	17%	13%
- Unsupportive government policy	60%	25%	33%	38%
- Lead firms block suppliers/trading firms	0%	13%	0%	25%
- International law and regulations (FTA, Quota)	0%	25%	0%	13%
- No skill set	20%	38%	50%	25%
- Technology constraint	40%	25%	50%	0%
- Lack of raw material	60%	63%	50%	38%
- Poor infrastructure	40%	0%	33%	13%
- Invest in other business with higher return	0%	0%	0%	0%

We are able to see that a higher percentage of well-performing firms conduct process upgrading, while well-performing and poorly performing groups have comparable percentages in product and functional upgrading. It also seems that poorly performing firms receive more support than well-performing firms. The support includes design and R&D.

Domestic textile conclusion

Local textile firms, whether well- or badly performing, have several similar characteristics. They tend to be a bit younger and have less experience in the markets than those in the export textile sector. They are also smaller in terms of capital and employment numbers, and look like they are unable to scale, though they are still larger than those in the clothing sector. Many of the firms are not be able to achieve the quality or standard required by international buyers, therefore many of them still produce no-brand products and focus on emerging markets, especially ASEAN and China. They are less sophisticated than those in export clothing and therefore have less technology constraints. Since they are less competitive than export firms, the route to international markets is not via large international trading firms, rather they export via small agents and retailers.

Good performance

Local textile firms try to build capability and brand, and focus on niche export markets such as ASEAN and China, while those in export textiles focus on mature markets such as the EU and USA. They are larger than badly performing local textile firms but still smaller than those that are able to export in terms of capital size and number of employees. Firms in this group, instead of using international traders, employ individual agents to enter the markets or even go directly to retailers. Compared with the low-performance group, they also receive more support in production design. This could be because they have a strong relationship with a few large buyers, i.e. captive governance. Firms in this group are also very committed to upgrading. One interesting point is that subsidiary firms tend to have strong revenue growth, however they typically have negative profit growth and/or net loss. This could imply that corporate centres focus on growth markets and, at the same time, find ways to recoup their investment via transfer pricing.

Bad performance

The firms in this group are not able to scale their business and still focus on no-brand products and adopting a conventional upgrading path, from no brand to OEM to OBM. With their inability to compete, their target markets are emerging rather than typical markets like ASEAN and China. Unlike better performing firms that use individual traders to distribute their products, the firms in this group tend to employ a typical route to the market, which is international trading firms, and utilise long-term relationships to do business. They struggle in product design and production while lacking many abilities to compete, such as labour productivity and marketing ability. Their lack of capability and commitment to upgrade make lead firms force them to put more effort into improvement.

5.2.3 Performance analysis conclusion

The section focuses on the thesis question about what explains aggregate differences in dynamics between textiles and clothing. We found that large export textile firms are a major driver for aggregate export growth. Their extremely high growth rate and large size are key contributors to textile export growth. Large firm size together with a significant growth rate helps offset the decrease in textile exports from non-performing export textile firms. On the other hand, a high percentage of export clothing firms has strong revenue growth. However, the impact of revenue growth of these firms on the aggregate data is quite trivial because their revenue size and growth rate are significantly lower than those of high-growth textile firms. Furthermore, clothing exports have a lower rate of survival in the market, which implies that many clothing firms that cannot compete and face significant decline in their business have a higher probability of closing down than textile firms.

The results imply that there could be different characteristics or business models that differentiate well- and poorly performing firms. We have therefore tried to examine the differences between those groups in four distinct value chains: domestic textile, export textile, domestic clothing and export clothing. The examination illustrates the following:

- Domestic textile: the well-performing firms tend to be younger with larger revenue size and profit. They focus more on process upgrading compared to poorly performing firms. These well-performing firms tend to encounter various limitations in areas such as product design and R&D from lead firms. Poorly performing firms receive better support from lead firms. However, high-growth firms tend to have a higher net loss.

- Export textile: Well-performing firms tend to achieve a better profit growth rate. OEM or dual model is important for good performance; a high percentage of no-brand firms fall into the poorly performing group. Well-performing firms have a high percentage of product exports to the USA. They use retail to distribute their products rather than international traders.

- Export clothing: there are no clearly distinct business models between poorly and well-performing groups. Firms in both groups seem to implement the same business model; the only difference is that poorly performing firms could have less capability because they receive more support from lead firms. The difference in performance could depend on lead firms' strategies and selection, which are out of control for domestic producers.

- Domestic clothing: this group has a heterogeneous business type. We are unable to identify key differences between high performance and low performance due to the small sample size.

The findings show that, though there are some distinctions between well- and poorly performing groups, these distinctions are weak and unclear. The examination of variables associated with the business model framework illustrates that there are no obvious factors that differentiate firm performance. We basically see the same results and conclusion as that tried for GVC variables. We are able to see that some firms perform better than others, but we are unable to see variables that clearly associate with positive performance. We are unable to find a finite set of variables that unambiguously correlate with good performance. This could imply that government policy, which tries to improve or alter some free-float 'variables' commonly thought to reflect good performance, will not result in clear performance improvement. The implication of the results of this research is that there could be various business models that are able to achieve better performance, but this cannot be examined at 'aggregate level' as many policy makers do. Rather, the examination of effective business models should focus on a firm-specific level. Whatever specific thing these better performing firms do or achieve at firm level is very difficult to capture from a survey and predetermined questionnaires.

5.3 Theoretical test and performance analysis conclusion

In this chapter, we attempt to answer the thesis question 'What variables differentiate export performance of the textile and clothing sectors?'.

We first examine variables associated the global value chain framework, and whether these variables can differentiate industrial upgrading and/or growth and performance patterns of firms in each sector of the industry. We have found that there is some consistency between categories and upgrading, but it is weak and often not exclusive to that category. The analysis of testing various hypothetical groups illustrates that a simple framework adopted by industrial policy advocates, such as global value chain or manufacturing type, are not strongly associated with firm performance and are not able to explain the difference in performance between the textile and clothing groups. There are many variations of firm performance in each category of global value chain or manufacturing type. Furthermore, these frameworks are unable to help government or policy makers identify patterns of how an industry operates in the real world. The frameworks are unable to help us identify key drivers for firm operation and performance. Government and policy makers need to be able to dissect the industry and attempt to understand it better in order to come up with appropriate policies for the industry. These findings make GVC constructs of limited value in understanding growth and constraint in the textile and clothing industry.

Since the GVC framework does not allow us to better understand and differentiate causes of growth and constraint in the industry, we have therefore tried to use the empirical data to identify groups of variables associated with growth and performance patterns of the two sectors. We have examined growth and no-growth firms of the predetermined four types of value chain in the industry that we identified earlier, namely domestic textile, export textile, domestic clothing and export clothing.

From such an analysis we found that large export textile firms are a major driver for aggregate export growth. Their extremely high growth rate and large size are key contributors to textile export growth. The large firm size, together with the significant growth rate, helps offset the decrease in textile exports from non-performing export textile firms. On the other hand, a high percentage of export clothing firms have strong revenue growth. However, the impact of revenue growth of these firms on the aggregate data is quite trivial because their revenue size and growth rate are significantly lower than those of high-growth textile firms. Furthermore, clothing exports have a lower rate of survival in the market, which implies that many clothing firms that cannot compete and face significant decline in their business have a higher probability of closing down than the textile firms.

The results imply that there could be different characteristics or business models that differentiate well- and poorly performing firms. The findings show that, though there are some distinctions between well- and poorly performing groups, they are weak and unclear. The examination of variables associated with the business model framework illustrates that there are no obvious factors that differentiate firm performance. We basically see the same results and conclusion as with GVC variables. We are able to see that some firms perform better than others, but we are unable to see variables that clearly associate with positive performance. We are unable to find a finite set of variables that unambiguously correlate with good performance. This could imply that government policy, which tries to improve or alter some free-float 'variables' commonly thought to reflect good performance, will not result in clear performance improvement. The implication of the results of this research is that there could be various business models that are able to achieve better performance, but this cannot be examined at 'aggregate level' like many policy makers do. Rather, the examination of effective business models should focus on a firm-specific level. Whatever specific thing these better performing firms do or achieve at firm level is very difficult to capture from a survey and predetermined questionnaires.

The analysis of this chapter illustrates that there is a weakness in 'macro-' or 'aggregate-' level analysis. We are unable to find strong relationships or connections between variables and performance, no matter how we reclassify or recategorise variables according to various theoretical frameworks. Furthermore, we are unable to identify common factors that differentiate well-performing firms from poorly performing firms. The aggregate level data make it unclear for policy makers or government to see the key success factors on which to focus in this complex and dynamic business environment. There is no obvious 'model' of the ideal firm or ideal strategy that neatly distinguishes those firms/models/sectors/markets that do well and grow, against those which do not. These various categories do not explain sectoral differences, nor do they explain firm-level differences.

So, rather than focus on aggregate levels, government and policy makers should focus on firm-specific characteristics, strategies or business models which differentiate them from others. Government needs to understand in-depth the specific industry structure of the sector and the relationship between key players. They will then be able to see in what position local firms are placed in such a complicated industry. This will help them understand the government role and measure how they can support the private sector.

The next section will focus on recommendations of process and methodology that government should use to understand the industry and formulate better policy that can support industry growth.

Understanding the Differential Drivers of Export Performance in

the Thai Clothing and Textile Sectors:

A Firm-Level Analysis of Distribution Activities and Constraints

Volume II of II

A thesis submitted to The University of Manchester for the degree of
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Chapter 6: Research conclusion and discussion

This research paper focuses on Thailand's textile and clothing industry since its liberalisation in 1995. The industry used to be the number one generator of export income for Thailand, generating 14.4% of total exports and 5.9% of Thailand's GDP in 1992. The comparative advantage indicator, Revealed Comparative Advantage, has also illustrated the similar direction. As exports strongly declined in the late 1990s, the Thai government employed 'industrial policy' to reignite the industry in 2003 and 2007. However, the policies have had little effect on the export pattern. We argue that the way government sees the industry is inappropriate and leads to ineffective industrial policy.

Three key issues raise a question about the effectiveness of textile and clothing policy. **First, government has a macro-level mindset** because policy is usually developed by viewing the industry from the top down rather than from a bottom-up or business point of view. This could lead to a single value chain picture of the industry and adoption of inappropriate analysis technique. **Secondly, industry analysis focuses on the local/domestic value chain**, hence neglecting global linkage, which is the key success factor for this type of industry. However, most textile and clothing products are for export, hence focusing on domestic demand could affect the results of the analysis. In addition, international intermediaries are main players in the global textile and clothing industry and have their own sourcing and marketing strategies, which could affect the global trading pattern. By neglecting these intermediary firms and without a clear understanding of industry structure and operation, the Thai government is less likely to be able to implement a set of effective policies and measures designed to upgrade the industry. It is therefore important that policy makers have analytical tools that help them to understand international business better. **Finally, trade liberalisation**, which removed all quotas by 1 January 2005, has had a significant impact on the industry; for example, markets for textile goods and garments are likely to be more competitive due to the entry of lower-cost producer countries. Furthermore, there is more integration of domestic and international markets. This accelerated globalisation and intensified competitive pressure, enhancing export competitiveness through various strategies and policies, has become a central preoccupation of developed and developing country governments alike. This change in competitive environment could have a negative impact on Thailand's export performance if government is unable to adapt to it.

One school of thought is that the global value chain framework[1] emerged as a forerunner in determining upgrading and performance of firms. The global value chain argues that the relationship between lead firms and local producers, i.e. form of value chain, has an influence on performance and industrial upgrading. Many international policy makers believe that understanding

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[1] Global value chain is an upgrading framework of commodity chain (Wallerstein, 1974) and Global commodity Chain (Gereffi & Korzeniewicz, 1994). Please see chapter 2 section 2.3.2.1 discussion on "Evolution of Global Commodity Chains to Global Value Chains".

GVCs is important to facilitate developing-country firms' participation in the international production system. In the textile and clothing industry, the GVC concept states that global buyers, e.g. large retailers, branded manufacturers and branded marketers, play a significant role in directing production networks across exporting or developing countries. These lead firms will therefore have control over global trade and production. In addition to upgrading and firm experience, which result in better performance, the GVC also implicitly asserts that moving up the value chain from the OEM model to ODM and then to OBM will be the most desirable position and is usually the most profitable segment of a GVC.

In addition, GVC advocates vaguely assume that those upgrading will have an impact on performance, which however there is no agreed-upon quantitative measures of upgrading and performance. Measurement of upgrading is required to identify upgrading benefit. This is because government and policymakers believe that upgrading implies that firms in developing countries will receive and capture the value and benefit of upgrading. So, to understand the impact of GVC and to be acceptable to practical, empirical evidence should illustrate 'growth' of improvement that reflect the context about participant expectation.

In the case of Thailand's textile and clothing industry, key performance that Thai government measure for industrial upgrading is export growth while private sector will tend to look at revenue and profit growth. It is possible that the difference in export performance of these two sectors arises because of different distribution channels, hence different lead firms, experience and governance structures. Thus, it is essential for us to examine the structure of the industry and the effect of Thailand's distribution channels on its export performance in more detail. Moreover, Thai policy makers and government strongly believe in this model. The government incorporated this concept and measure in the 2003 and 2007 master plans. In early 2003, one of Thailand's mega-projects, 'Bangkok Fashion City', was initiated in the hope of creating a Thai clothing brand.

In order to use the GVC effectively as a policy measure, it is essential for us to examine whether the GVC concept is consistent with Thailand's experience. In addition, we need to examine whether the theory is effective, i.e. the key variables have a distinct relationship with firm performance. For an economic theoretical framework to be applicable to the practical world, we need to confirm that those industrial policies, such as GVC, can have a positive effect on various performance measurements that are relevant to business practice.

This thesis' main concern is with understanding the effectiveness of government policy on the textile and clothing industry and the challenges of addressing GVC dynamics when tackling industrial development domestically. In principle, for a theoretical framework to be considered a

valid instrument that leads to effective policy, it should first help government and policy makers to understand the industry operation better. The tool should reflect firm structure and operation within the industry, be able to capture the experience of firms within the sector and provide government with important information that reflects real needs in order to develop government policy. In addition, the framework used in policy making should be relevant to the real world, i.e. it should be able to influence the behaviour or performance of the majority in a group of firms targeted by government and policy makers. This principle leads us to the three research questions that revolve around this thesis:

Q1: 'What are the differences in experience of firms in the textile and clothing segment with regard to export growth and how are these experiences distributed?'

Q2: 'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to patterns in the governance of the networks they are linked to?'

Q3: 'To what extent are the differences in the abilities of firms in the textile and garment segments to grow through exports attributable to differences in business models of firms in this industry?'

We adopted a mix of qualitative and quantitative research methods, such as expert and industry interview and firm survey, to tackle such questions. The data collected was evaluated statistically to identify factors that differentiate performance of firms within each sector. From the in-depth and detailed analysis we found the following:

1) There are **no clear differences in experience** of firms in the textile and clothing segment with regard to export growth and how these experiences are distributed.

    We found that the industry is far more complex than we thought. Instead of a simple value chain within the textile and clothing industry, there are at least four: the domestic textile chain, export textile chain, domestic clothing chain and export clothing chain. Firms in these various chains vary in characteristics, business model and capabilities. The variety in size, capabilities and number of well-performing firms are the key that differentiates industry and sector performance rather than those predetermined variables.

In addition, we see that firms in different groups have all sorts of different growth/decline situations, experience with lead firms, governance structures and even perception of upgrading. There is a high degree of variability in the various value chains. Worst of all, it is not just the industry or sectors that have divergent experiences, but as we start to disaggregate in greater and greater detail, we still find many differences in the population, rather than a clear grouping of a particular type of firm or experience or performance. This implies that businesses in this industry can be structured in so many different ways targeting different things through different intermediaries and markets that we do not detect any simple common categories that correlate strongly with growth/decline, particular upgrading strategies/experiences etc.

This variability will have an implication for government policy, which tries to upgrade or increase the ability of the industry to compete in the global arena by targeting strategic issues it believes important for the private sector. When there is great variability in an industry, 'target' interventions are so difficult. When government develops policy, it tries to target a group of companies with similar experiences and problems so that an intervention may help all of those companies. However, if firms in the sector are part of a heterogeneous group of companies, the policy makers will not be able to find a target group of firms.

The variability in experience and performance of firms in the industry which result in government policy might not be effective and a different policymaking approach needed that understands variation in experiences and problems a bit better than the current one. The implication of these issues will be discussed in section 6.4.

2) The differences in the abilities of firms in the textile and garment segments to grow through exports **are not attributed** to patterns in the governance of the networks they are linked to.

The results illustrate that the main categories used in GVC analysis do not often lead to different outcome measures. Though we are able to see that there are some relationships between variables associated with the global value chain literature, such as governance with upgrading or upgrading with profit margin, we are not able to see that the various GVC variables are associated with improved financial performance.

The examination of variables associated with the GVC framework illustrates that there are no obvious factors from theory that either differentiate type of experience of

upgrading, or performance, in general. The statistical analysis and differential dynamic analysis confirm that, no matter what technique we adopt, firms do not perform significantly differently in various GVC groups. We are able to see that, in each GVC category, many firms perform well and other firms perform poorly. The results are very scattered and show a very weak relationship.

The results imply that all firms in the category do not generate Thailand's aggregate trend; there are many firms in the same category that cannot survive. From the analyses, we have learnt that aggregate trends and data do not reflect or reveal the experiences of lots of companies who share common factors, e.g. governance, trade intermediary, upgrading or manufacturing type. The aggregate trends probably reflect the performance of a relative few firms in the category; there are many other firms in the same category that are not able to achieve the same as the better performing firms. In such a research method where the theoretical categories force groups of surviving firms together with those that are declining or closing, those categories are likely to be highly problematic if used as the basis for particular policy interventions.

These findings make GVC constructs of limited value in understanding growth and constraint in the Thai textile and clothing industry. This implies that policy that tries to upgrade GVC variables, like upgrading from OEM to OBM or encouraging functional upgrading, will find them ineffective. This raises the question about policy that tries to improve these variables in the hope that it will improve industry performance, which actually have no impact in practice. Furthermore, it raises the question about the research methodology adopted by government and policy makers in order to reach a conclusion and recommendations. The implication of these issues will be discussed in sections 6.1 and 6.2.

3) The differences in the abilities of firms in the textile and garment segments to grow through export **are not attributed** to differences in business models of firms in this industry. However, we found that firms in different value chains within the industry have different business models and characteristics.

The findings show that, at aggregate level, there are some distinctions between well- and poorly performing groups, but these distinctions are weak and unclear. We are unable to clearly differentiate the characteristics or business models of well- and badly performing firms.

The examination of variables associated with the business model framework illustrates that there are no obvious factors that differentiate firm performance. We basically see the same results and conclusion as we see for GVC variables. We are able to see that some firms perform better than others, but we are unable to see variables clearly associated with positive performance. We are unable to find a finite set of variables that unambiguously correlate with good performance. This could imply that government policy that tries to improve or alter free-floating 'variables' commonly thought to reflect good performance will not result in clear performance improvement.

The implication of the results of this research is that there could be various business models able to achieve better performance at firm level but the effectiveness of promoting business models found at firm-specific level might be impractical at aggregate level. In this case, the examination of effective business models should focus on a firm-specific level. Whatever specific things these better performing firms do or achieve at firm level are very difficult to capture in a survey and predetermined questionnaires. A new research method might be required to solve this issue. The implication of this issue will be discussed in sections 6.1 and 6.3.

In addition to the main research findings, from our analysis we found that large export textile firms are major drivers for aggregate export growth. There are more international growth opportunities for textiles than clothing, but textile firms have to be big to grasp such opportunities. Those textile firms able to scale their activities have been operating in an environment that allows a faster rate of growth than in the clothing sector. The large firm size together with the significant growth rate helps offset the decrease in textile exports from non-performing export textile firms. We see a high number of textile firms are declining in revenue and profitability, but this is counterbalanced by the scale of the few companies that have a strong growth rate. Fundamentally, because of the rate of growth and the value of that growth in textiles, a small group of elite firms is pushing up the aggregate, but overall there are not many opportunities for most of the smaller firms to grow in textiles.

On the other hand, a high percentage of export clothing firms have had strong revenue growth. However, the impact of the revenue growth of these firms on the aggregate data is quite trivial because their revenue size and growth rate are significantly lower than that of high-growth textile firms. Furthermore, clothing exports have a lower rate of survival in the market; in particular a high percentage of firms that have had moderate decline have closed down their businesses. This implies that many clothing firms that cannot compete and face significant decline in their business have a higher probability of insolvency than textile firms. So, many small to medium-sized

companies are key drivers for export growth, however export growth is impeded by the decline and closure of companies that are not equipped and able to compete in competitive markets.

In conclusion, the research findings illustrate that industrial analysis at 'macro' or 'aggregate' level is weak and impractical. These high-level analyses do not give policy makers and government a clear understanding of the industry, structure and drivers of performance. We are unable to find a strong relationship and connection between variables and performance, no matter how we reclassify or recategorise variables according to various theoretical frameworks. Furthermore, we are unable to identify common factors that differentiate well-performing firms from poorly performing firms. The aggregate level data make it difficult for policy makers or government to see what key success factors to focus on in this complex and dynamic business environment. There is no obvious 'model' of the ideal firm or ideal strategy that neatly distinguishes those firms/models/sectors/markets that do well and grow, against those which do not. These various categories do not explain sectoral differences, nor do they explain firm-level differences.

So rather than focus on aggregate level, government and policy makers should focus on firm-specific characteristics, strategies or business models that differentiate them from others. Government needs to understand in depth the specific industry structure of the sector and the relationship between key players. It will then see the position in which local firms are placed in such a complicated industry. This will help government understand its role and the measures it can use to support the private sector.

The research findings present some flaws in the validity of certain government policy, industry analysis and policy-formulation process, and the application of global value chain and business model literature in practice. The following sections will discuss the aforementioned issues in detail.

6.1 Discussion of research findings

The heart of this thesis is concerned with understanding the effectiveness of government policy on the textile and clothing industry and the challenges of addressing GVC dynamics when tackling industrial development domestically. The thesis has found the following answers to the three major questions of the research thesis:

1) There are **<u>no clear differences in experience</u>** of firms in the textile and clothing segment with regard to export growth and how these experiences are distributed.

2) The differences in the abilities of firms in the textile and garment segments to grow through exports **<u>are not attributed</u>** to patterns in the governance of the networks they are linked to.

3) The differences in the abilities of firms in the textile and garment segments to grow through exports **<u>are not attributed</u>** to differences in business models of firms in this industry. However, we found that firms in different value chains within the industry have different business models and characteristics.

These findings raise the question about the validity of the formulation process, and the application of global value chain and business model literature in practice, which leads to the question about the effectiveness of policy (see figure 6.1). It is therefore important that government has a better policymaking process and applies theoretical frameworks appropriately to produce effective industrial policy. The following sections explain the reasons why these findings raise such questions.

Figure 6.1 Conclusion and implications of the research findings
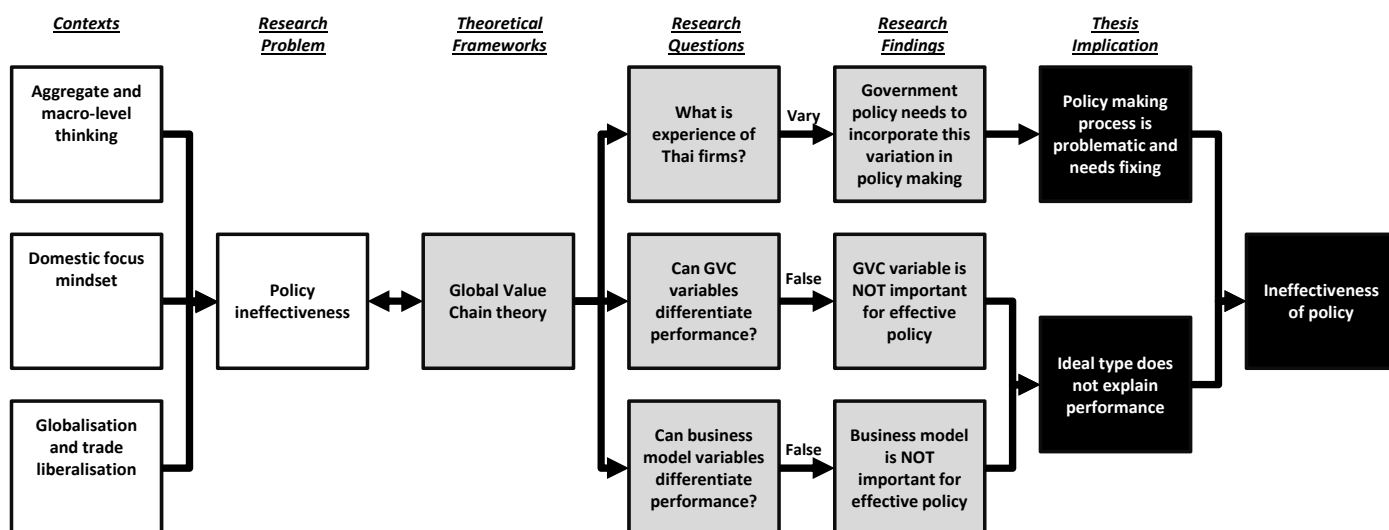
6.1.1 The policymaking process is problematic and needs fixing to incorporate variations in experience and segmentation of firms in various groups.

Existing research into Thailand's textile and clothing industry normally views it as a single value chain in which the textile sector is 'upstream' and the clothing sector is 'downstream' in the industry. Furthermore, the government sees the industry as homogeneous and treats it as one group of firms that face similar issues. However, the research clearly illustrates that, instead of the single value chain viewed by government and policy makers, the textile and clothing industry in Thailand is far more complex and consists of a number of value chains. By examining and reclassifying the industry information and data in various ways and from different perspectives, including research reviews, data analysis, expert interview, firm interview and survey, we are able to deduce that Thailand's textile and clothing industry has at least four value chains instead of one. These value chains have different characteristics, export markets, distribution channels and business models.

In addition, there is a high degree of variability in these value chains. Worst of all, it is not just that the industry or sectors have divergent experiences, but as we start to disaggregate in greater and greater detail, we still find many differences in the population, rather than a clear grouping of a particular type of firm or experience or performance. This implies that businesses in this industry can be structured in so many different ways targeting different things through different intermediaries and markets that we detect no simple common categories that correlate strongly with growth/decline, particular upgrading strategies/experiences etc.

These findings imply that the current policymaking process, i.e. data collection and industry analysis used to categorise today's value chain model of the textile industry, fails to examine the true structure, dynamic relationships and problems that exist within various segments of the industry. The broad segmentation of the industry therefore leads to an ineffective government policy which is designed to fit all business categories.

Government and policy makers normally conduct high-level analysis and adopt simple analytical tools to examine strategic issues and formulate policy for the industry because they lack in-depth knowledge and understanding of the industry coupled with a lack of awareness of the limitations of theoretical frameworks and its implications. However, since we have found that the industry is dynamic and complicated, the research method currently adopted by the Thai government has to be transformed in order to formulate policy that is more effective.

Figure 6.2 Current approach of Thailand's industry policymaking process

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┌─────────────┐     ┌─────────────┐     ┌─────────────┐     ┌─────────────┐
│ 1           │     │ 2           │     │ 3           │     │ 4           │
│             │     │ Select or   │     │             │     │             │
│             │     │ adopt       │     │ Collect and │     │ Synthesise  │
│ Review      │ ──▶ │ theoretical │ ──▶ │ analyse     │ ──▶ │ and develop │
│ previous    │     │ framework   │     │ data        │     │ policy      │
│ industry    │     │ to analyse  │     │ according   │     │ according   │
│ research    │     │ industry    │     │ to          │     │ to          │
│             │     │ situation   │     │ framework   │     │ findings    │
└─────────────┘     └─────────────┘     └─────────────┘     └─────────────┘
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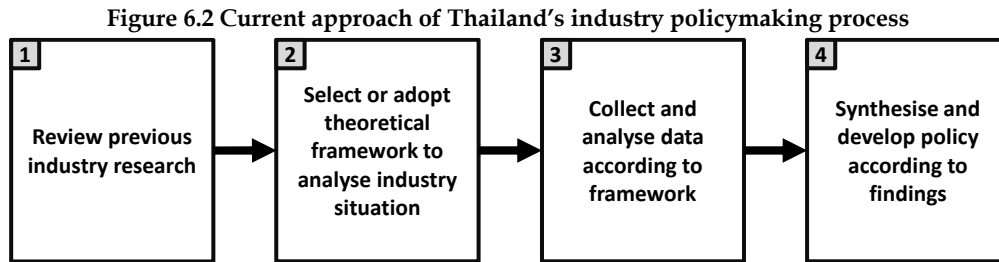
Currently, the process of policy making in Thailand looks like the illustration in the figure above. First, researchers only need to review previous industry research to understand the current structure and to be aware of issues in the industry; this process will take about a month to conduct. Furthermore, researchers will select or adopt theoretical frameworks, such as the value chain, SWOTS or Diamond models, to analyse and evaluate the situation in the industry. Note that government agents often instruct researchers to adopt tools they believe have an impact on upgrading of the industry. The researchers then collect and analyse the data according to the framework, which normally takes 3-4 months. And finally they use those data to synthesise and develop industrial policy.

Though it seems acceptable at first glance, we see several weaknesses in this method or approach. First, there is so little time to comprehend and understand the structure and organisation of the industry. Government and policy makers only have a short period of time in which to review the structure of the industry from previous industry studies, which they believe present a correct picture. However, since the industry is dynamic and changes continuously, relying on previous industry research could give an inaccurate picture.

Furthermore, government and policy makers usually adopt a theoretical framework, which they believe is accurate, to analyse and develop policy to upgrade the industry without a clear understanding of the limitations or usefulness of the tool. They then use the framework as a guide to collect and analyse the data accordingly. Again, this does not provide a better understanding of the industry and will result in ineffective industrial policy.

This method is carried out without a clear understanding of how the industry operates or of its structure. The inability to recognise industry segments or how groups of firms operate results in misunderstanding of industry characteristics and leads to inappropriate policy. However, as business activities become more dynamic and complicated than ever, looking at a static picture or using an old paradigm could also lead to inappropriate policy. It is therefore important for government and policy makers to realise and recognise the weakness of their research methodology

and find ways to improve it. A better method should allow policy makers to understand segmentation of the industry, how firms operate and compete within the industry, various types of business model employed by firms in the industry and relationships between players.

Furthermore, problems in the policymaking process raise questions about the effectiveness and appropriateness of existing Thai textile and clothing policy that views the industry as homogeneous and a single value chain. The current industrial policy views the industry as one single chain, in which the textile and clothing sectors have similar dynamics and characteristics. The current policy is therefore generic and does not tackle specific issues that are distinct for a particular value chain. In addition, the results also illustrate variability in experience, governance and all variables in various value chains. This variability has an implication for government policy that tries to increase or upgrade the industry to compete in the global arena by targeting strategic issues government believes important for the private sector. When there is great variability in an industry, 'target' intervention is so difficult. When government develops policy, it tries to target a group of companies with similar experiences and problems so that an intervention may help all of those companies. However, if firms in the sector are a heterogeneous group of companies, policy makers will not be able to find a target group of firms. So, if the industry is not one single value chain after all but consists of various chains in the industry with heterogeneous experience, the existing industrial policy will be irrelevant. For example, the current policy has the key objective of increasing total industry exports by creating a linkage between the two sectors and moving up the value chain, from OEM to OBM. However, if a value chain in the industry operates best as an OEM operator, since it has skills and competitive advantages in manufacturing, the policy to assist upgrading from OEM to OBM is therefore likely to be underutilised or disregarded by many firms and will not be effective.

This implies that to have a better understanding of the industry and develop effective policy, policy makers and government need to focus on a better policymaking process which allow them to better understand the industry structure, how firms operate and particularly when and how to intervene to support the industry. This also requires better knowledge and skill sets from policy makers. In addition, more effective tools or methodologies are required to help policy makers better analyse and examine the strategic issues of the industry. The discussion on how to improve the policymaking process will be discussed in section 6.1.3.

6.1.2 There is no distinct relationship between variables associated with GVC or business model with firm performance

In addition to the problematic policymaking process, the results that illustrate that GVC and business models do not explain performance also lead to ineffectiveness of policy. This is because the government develops policy by using tools it believes to have an impact on firm performance, however the empirical evidence illustrates otherwise. This raises questions for such a policy.

The results of the research illustrate that many theories, such as GVC and simplified business models, that generalise the relationship between key variables and firm performance do not hold true in the empirical test. The conclusion of the statistical examination rules that all factors associated with the GVC framework and business models have a strong and distinctive relationship with export performance. The research illustrates that various types of firm with varied performance are distributed across the categories related to factors that the GVC literature perceives affect firm performance. More importantly, no matter how we categorise the information, the analysis indicates similar results distributed across the different ways of categorising firms and sectors. The results show the huge variability and complexity of how firms, their relationships, strategies, performance and perceptions are composed. They imply that if these factors are so heterogeneously distributed across firms in different categories, these categories cannot be key factors that explain the growth/decline/constraint patterns, i.e. ideal types of upgrading, business model or other theories are unable to explain performance.

Since the results deny that variables of GVC and business models have any impact on firm performance, this raises the question about the usefulness and practicality of the theories. The results mean that any attempts to theoretically explain what determines growth and decline must recognise the fact that it is not a simple categorical generalisation. There are no obvious 'models' or 'factors' that neatly distinguish those firms, sectors or markets that do well and grow, or those that do not. These various categories are not able to explain sectoral differences, nor do they explain firm-level differences. These theories should not be used and are not applicable to determine performance of the industry, however they are still applicable and valuable in industry analysis and in practice. GVC is important and suitable for analysing and understanding activities of each player along the chain, especially international distribution channels, instead of analysing predetermined variables. Furthermore, business models are applicable to understand how firms differentiate from others to compete within the market. However, techniques to apply a business model framework in industry research should be identified.

In addition, the results illustrate that we are unable to find a finite set of variables that unambiguously correlate with good performance. However, many governments and policy makers do not recognise such a flaw in the theories and try to develop policies based on them. This could imply that government policy, which tries to improve or alter free-float 'variables' commonly thought to reflect good performance, will not result in clear performance improvement.

The results do not mean that these tools are not useful and should be discarded. However, they imply that government and policy makers should not adopt and use theoretical tools bluntly and naively. This means that government should change its policymaking process to use these frameworks as tools to help it better understand the industry and firms' operation.

We will propose a new policymaking approach that can incorporate various theoretical frameworks and help generate more effective policy in the following section.

6.1.3 Change in policymaking processes and applications of GVC and business models

The findings of this research have confirmed concerns and problems raised at the beginning of the thesis that there are misperceptions of industry structure, lack of in-depth understanding of how firms operate in the industry and lack of awareness of the limitations of the theoretical framework. These problems lead to ineffectiveness of government policy.

The findings also show that there are many value chains within an industry and theory cannot be generalised. This implies some flaws in the validity of certain government policy, industry analysis and policy-formulation processes, and in the application of the global value chain and business model literature in practice. The typical industry research methodology and the approach we adopt give us an inaccurate picture of industry structure, dynamics and competitiveness, leading to ineffective industrial policy. It is therefore important for government and industry researchers to recognise such shortfalls in the method and attempt to develop better tools to analyse and understand the industry structure and its dynamics in more detail. To have a better policy, we require a better method or different perspective to see the industry from a different viewpoint appropriate for policy makers. The following sections will discuss ways to apply these theoretical concepts and to improve the policymaking approach.

To have an effective and appropriate industrial policy, government and policy makers need to have a good understanding of industry structure, power, players and key factors that determine performance. This should help researchers to clearly distinguish different segmentations or business

models within the industry so that they can develop policy specifically to match the needs of each segment. With our experience from this thesis and the research findings, we propose a better approach that will allow researchers, government and policy makers to have a better understanding of the industry.

Figure 6.3 Proposed approach of Thailand's industry policymaking process

| 1 Industry or market structure mapping via interview | → | 2 Conduct industry survey to collect data to verify market structure analysis | → | 3 Analyse key variables that determine different firm performance | → | 4 Synthesise and develop policy according to findings |
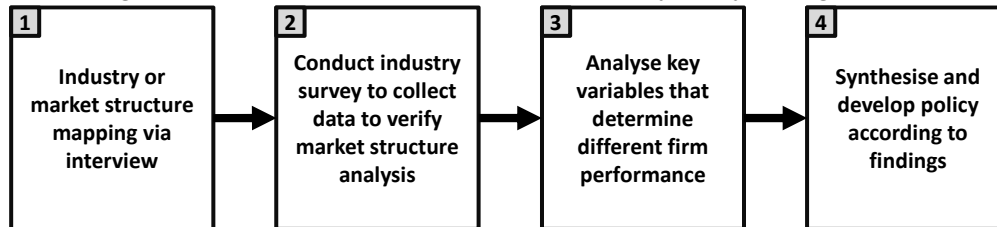
First, researchers should try to map the industry to recognise and understand it and the market structure. The value chain framework could be used nicely here, however instead of bluntly using the value chain framework as a rigid frame or mapping the industry to fit with the value chain concept, it should be used to understand 'segmentation' of the industry and to increase knowledge of the complexities, inter-linkages, distributional benefits and institutional arrangements of production and marketing channels.

To make the value chain analysis meaningful and effective requires appropriate segmentation of the industry to identify the value chain within the industry. Once we are able to reclassify segments within the industry, we can then apply the value chain concept to analyse each chain. Experience from conducting the research illustrates that 'segmentation' is very important in identifying value chain. It helps us to subdivide an industry into clearly identifiable segments that have similar characteristics or strategic issues. We can understand 'segmentation' of each industry by interviewing industry players, including producers and distributors. In practice, segmentation of the value chain can be defined from at least three perspectives. Firstly, value chain type from a product perspective, for example textiles, clothing and technical textiles. Secondly, value chain type from a market perspective, for example domestic, regional or global. Finally, value chain type from a functional perspective, for example producers, service providers, marketers or distributors. These various perspectives can help us to identify the type of value chain better and more clearly than the generic value chain. Segmentation to identify the appropriate value chain that reflects real industry operation and more detailed variables can help researchers to utilise the value chain concept to better understand the complexities, inter-linkages, distributional benefits and institutional arrangements of production and marketing channels of each industry. This will also help lead us to a more appropriate industrial policy that will rightly tackle value chain-specific issues.

Segmentation and value chain mapping could be done by interviewing players and industry experts. Researchers should develop questions that help them recognise and dissect the industry into various groups. The value chain framework should be used as a question guideline to help understand different segmentation or groups in the industry. Figure 6.4 below illustrates sample components of the value chain that can be used as a guideline for interview questions.

Figure 6.4 Value chain components to include in interview guidelines

Value chain component	
Inputs sources	Governance
Production & Output	Upgrading
Markets	Employment
Distribution channels	Value added

After understanding market structure and segmentation of the industry, researchers should analyse various business models of firms in various segments or chains. This can be done by conducting an industry survey to verify and validate the findings from the interviews. In addition to verifying and validating the interview findings, the objective of the survey is to help understand the characteristics, strategic issues and variables that distinguish firms from each segment. The business model framework could be used here in the survey in order to identify and distinguish firms in the industry.

However, the business model concept does not seem useful or practical in macro-analysis in which we analyse and examine variables of many firms. Normally, the business model concept is used to explain how a particular firm operates or conducts its business differently to achieve better performance. Analysing the business model is impractical because these firms have mixed types of business model in a group and we are therefore unable to recognise patterns of business model that outperform those of other firms in the group. The implication of the results of this research is that there could be various business models able to achieve better performance, but this cannot be examined at 'aggregate level' as many policy makers do. However, the business model concept should be used to examine firm characteristics and how they operate their business through industrial policy analysis. This will help policy makers understand and have better knowledge of the industry.

The business model components are presented in table 6.1.

Table 6.1: Nine business model components

Business model ontology	Business model building block	Description
Product	Value proposition	Gives an overall view of a company's bundle of products and services.
Customer interface	Target customer	Describes the segments of customers a company wants to offer value to.
	Distribution channel	Describes the various means of the company to get in touch with its customers.
	Customer relationship	Explains the kind of links a company establishes between itself and its different customer segments.
Infrastructure management	Value configuration	Describes the arrangement of activities and resources.
	Capability/ Core competence	Outlines the competences necessary to execute the company's business model.
	Partnership	Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialise value.
Financial aspects	Cost structure	Sums up the monetary consequences of the means employed in the business model.
	Revenue model	Describes the way a company makes money through a variety of revenue flows.

Source: Osterwalder, A. (2004)

In step two, researchers should attempt to categorise firms into various segments, value chains or business models. They then categorise firms in those segments into two groups, namely good performance and poor performance. Each group should be analysed to identify key variables that differentiate their performance. This could be done via statistical analysis coupled with further firm interviews. This will give us a better idea and understanding of what firms do in order to achieve different performance. Finally, the results from the statistical analysis and firm interviews will be synthesised and appropriate policy that fits with various segments within the industry developed.

After the top-down approach, researchers could select a group of both well- and poorly performing firms to conduct company-specific interviews, i.e. case study research, to help us understand a complex issue or objective of the industry. This firm analysis is the bottom-up approach that specifically analyses the business model, operation and strategy of each firm. The researchers should attempt to identify specific things that these better performing firms do or achieve at firm level, which are very difficult to capture in a survey or predetermined questionnaire. It helps us understand the experience of both well- and poorly performing firms in different situations and contexts. The policy should be evaluated and concluded from analysing and examining many case studies.

This new approach is better than the current method because of two advantages. First, rather than relying on previous industry research to provide an industry structure picture, this method provides researchers and policy makers with a detailed picture and in-depth structure of the industry. Secondly, instead of adopting a theoretical framework as given, this method employs tools – both the global value chain and business model – as a guideline to develop questions so that we understand the industry better. Furthermore, we do not use predetermined variables as given; rather we attempt to test whether those variables can differentiate firms' performance.

This two-step methodology may help provide a better understanding of the industry and core problems for government to support. It also leads to policies that are more specific rather than ambiguous and imprecise. The measures or policy should provide objectives or goals for each value chain or business model so that government agents or firms can follow them easily. This new way of policy analysis means that researchers and policy makers need to have in-depth knowledge and understanding of industry operations instead of analysing macro- and high-level statistics. It implies that new analysis techniques and methods will require more resources and additional skill sets. Researchers and policy makers should develop their skills and abilities to be able to implement this new technique effectively.

Though this new method has significant benefits, it could have some drawbacks and require better skills and knowledge from researchers and policy makers.

First, this new method could consume more time than the current method. The current method can be completed within 3-5 months, depending on the industry. This is because researchers do not need to reassess and have deeper knowledge of the industry; they can just take the result from previous industry research. Furthermore, they can adopt the framework directly from textbooks without considering its effectiveness or practicalities. Using the new method it will probably take longer to analyse and recategorise the industry into various segments. Furthermore, it will take a long time to collect and statistically analyse data from the survey. With the time constraints the Thai government usually has for each research project – around six months – this new method might not be appropriate in the Thai context.

Secondly, to implement a new research method the government agents that implement industrial policy need to have better knowledge and understanding of the industry and theoretical framework they adopt. As mentioned above, the policymaking process is ineffective because policy makers lack awareness of the limitations of the theoretical framework they use and lack in-depth knowledge of the industry; they therefore need to be aware of the limitations and allow more time to gain a deeper knowledge of the industry.

Furthermore, this approach requires researchers with strong skill sets and commitment and policy makers with a better mindset. This method requires researchers with strategic and analytical skills who can divide or dissect the industry into various sub-groups. In some cases, segregating the information requires statistical skills. This analysis needs economics researchers who can look at the industry from a business perspective. Policy makers and researchers need to be educated and demonstrate that this new approach is better than another. Since there are no predetermined tools or frameworks like in other methods, they also need to learn to think outside the box and identify what variables matter to differentiate value chain and performance.

Finally, this new method is a middle-ground approach between macro and industry level; this could cause difficulty in implementation between government agents responsible for industrial policy in Thailand. Currently these are: the National Economic and Social Development Board (NESDB), Ministry of Industry (MOI) and Ministry of Commerce (MOC). NESDB is responsible overall, particularly for the macro-economic development plan for Thailand, and will therefore have an aggregate viewpoint on industry, hence it will not focus on market segmentation, which we have proposed. On the other hand, MOI is responsible for developing the master plan for industry but their emphasis is on production, particularly in large firms, while MOC is responsible for distribution and marketing. This means that MOI does not see the whole value chain of an industry and hence the breakdown of our value chain analysis. For these three agencies to adopt this proposed method, Thailand needs to change the Act that regulates their roles and responsibilities.

For example, NESDB should have a deeper role in industry analysis and development in Thailand, instead of developing a high-level direction. It needs to become a policy delivery unit that develops and translates policy and monitors implementation plans. Alternatively, MOI needs to expand its responsibilities beyond the production and manufacturing function or work closely with MOC to understand the whole chain of the industry.

These institutional issues lie very deep in the Thai bureaucratic system where the definition of the roles and responsibilities of different agencies is unclear and redundant. This unclear picture results in different mindsets and viewpoints of various government agents in relation to industry development, i.e. NESDB looks only at the macro view, MOI looks at production and MOC looks at marketing. No one in Thailand can see the whole and complete picture of an industry. Worst of all, each agency reports directly to a different minister: NESDB reports to the prime minister and minister of finance, MOI reports to the minister of industry and MOC reports to the minister of commerce. In practice, these ministers have different agendas and do not discuss the country's direction together, leading to different and various policies and master plans.

At the beginning of the thesis, we raised the question of the effectiveness of government policy. The findings illustrate that the policy is likely to be ineffective. To develop effective government policy, we require a better policymaking process and better mindset from policy makers. However, the process and mindset rely strongly upon the structure and organisation of economic agencies in Thailand. The unclear definition of roles and responsibilities of the government structure result in disconnected analysis and do not give a clear understanding of the industry, hence the problems in developing and implementing more effective industrial policies may ultimately be constrained by the institutional makeup of the country's 'economic governance' (Phillips et al., 2006; Henderson, 2011).

In conclusion, by using Thailand's textile and clothing industry as a case study, we are able to find that industrial policies in Thailand are problematic, which is a result of the mindset of policy makers and a fragmented policymaking process which stems from poor economic governance.

6.1.4 Government policy for Thailand's textile and clothing industry

From the new perspective for the textile and clothing industry, we are able to understand strategic issues of the industry better. Instead of one single value chain that the government or policy makers used to see, we are now able to better comprehend and analyse the industry's situation and strategic issues. We will therefore redesign and reformulate the industry policy as follows.

We see that there should be two levels of policy for Thailand's textile and clothing industry: a high-level strategy and a sectoral strategy.

Thailand has extensive experience, skill and know-how in the global textile and clothing industry. It has abundant skilled and non-skilled labour that is able to produce high-quality textile and clothing products. However, it is facing strong competition from low-cost-labour countries like China, Vietnam and Bangladesh. **The high-level strategy for the country is "to consolidate the industry into an integrated production supply chain for niche OEM products" and "to promote Thai designer brands by creating a local supply chain linkage between domestic branded markets with export focused clothing producers"**.

For OEM products, the government should focus on niche products in which Thailand has strong comparative advantages such as sportswear, babywear and underwear. It should focus on creating a supply chain linkage between these products and focus on the production side of the chain rather than branding and marketing for which Thai producers do not have proper skill sets. Thailand should not, at the beginning, focus on branding and marketing because many Thai producers, as well as the government, lack skill sets, capabilities and understanding to compete in such a market. Further, large lead firms such as branded marketers and branded manufacturers will find ways to block and limit Thai firms from entering their territories. To become "integrated production supply chain producers", the Thai government should look at the supply chain of a niche market and identify or examine what needs to be done to support such a chain. For example, the government could take measures to reduce import tariffs of raw material, promote investment in supporting and related industries, change rules and regulations that obstruct merger and acquisition, and reduce taxes on machinery that is important for production.

In addition to OEM products, the **Thai government could also promote Thai brands but not those produced by current export OEM producers, rather those domestic designer brands** that are too small and do not have the production base or channels to enter the international market. This is a different view from current government policy that supports existing OEM producers to create their own brand. This is because the existing OEM producers have extensive experience in production but

not design, marketing and retail. It is very difficult to train OEM producers. Further, they are blocked from competing with large lead firms with which they have a long-term relationship. On the other hand, those domestic designer brand producers have experience in design, merchandising and local marketing. These domestic designers only lack international networks and scalable production capacity to compete in the global arena. They can do this by business matching within Thailand itself or creating cluster or supply chains that focus on designer brands. They can also help promote domestic brands overseas, via exhibitions or business matching with overseas trade intermediaries.

With high-level strategy as the main direction of the industry, each value chain of Thailand can choose its strategies to align with such a direction. The following are examples of firm strategies in each value chain.

Table 6.2: Summary of Thailand's clothing and textile recommendations

Category	Situation	Recommendation

Local Textile	Good performance
	- Sacrifice profit for growth
	- Relatively younger
	- Focus process upgrading
	- Focus OEM & OBM
	
	Poor performance
	- Small size
	- No-Brand
	
	Both groups lack distribution channels and scale, compared with export textile
		Domestic textile service provider
		  1) Support clothing for export (OEM): baby, sport, lingerie or knitted
		  2) Support clothing for domestic but have export potential (OBM): designer clothing
		- Scale by financial, market knowledge and technology support
		- Process support to reduce lead time, increase productivity and increase capacity
		- Reduce import tax
		
		Global textile service provider
		- Export oriented: Increase international distribution channels
		- Scale by financial, market knowledge and technology support
		- Process support to reduce lead time, increase productivity and increase capacity
		- Reduce import tax

Export Textile	Good performance - Focus on synthetic - Core competency in production and scale - Focus in OBM or OEM - Distribute to retailers - Require market knowledge and technology - Poor performance - Need many supports - Lack of branding	**Global textile service provider** - Reduce import tariff - Increase in scale - Support brand development, R&D, product design and marketing - Help create linkage with large international buyers, i.e. business matching
Local Clothing	- Heterogeneous model - Lack of raw material and linkage with production - Lack of scale, marketing channel, product design and R&D	**Domestic Market: Promote Thailand's brand** - Support and promote high potential local brand - Link designer and brand with local production - Encourage competition for product differentiation and branding - Create local distribution channels - Provide market information and trends - Promote intellectual property **Export Market: Linkage with markets** - Link designer and brand with local production - Create international distribution channels - Provide market information and trends - Provide financial support
Export Clothing	Good performance - OEM that are able to scale in investment size, production capacity and revenue - Core competency in production - Focus on single type of production - Focus on product upgrading - Problems from raw material Poor performance - Lack of skill sets - Require much support from lead firms e.g. finance, market and design	**Global OEM service provider (OEM production hub)** - Complete supply chain/cluster… Niche or Product champion… baby, sport or lingerie, knitted - Focus on international network for such products **Focus on branded products** - Support in buying or licensing brand - Support in collaboration with domestic designer brand - Provide training for new advanced skill sets such as merchandising, retail and marketing - Provide financial support

Domestic and export textile producers will have at least three choices to focus on: 1) to support clothing producers with export of, for example, babywear, sportswear and lingerie; 2) to support designer brands that have export potential; and 3) to supply international clothing producers. Though there are three choices for textile producers, the government could support them by promoting expansion or merger and acquisition to increase the size and productivity or efficiency of the firms. It could also provide the producers with technology and R&D that support particular types of product. Further, it could promote production of raw material, reduce import tax or promote the process of reengineering to increase the productivity of firms.

The Thai government should promote Thailand's brand for **local clothing producers** that have potential to compete in the global arena. These producers include those small to middle sized firms that have their own brand and design and are well known in Thailand. These firms normally have marketing skills and know local markets well but their production is too small and they lack exposure to international markets. The Thai government could help create linkage with larger local production firms and create local and/or international distribution channels for them. It should also provide market information and trends and give training on specific skills to these types of firm. It should encourage competition for product differentiation and branding especially through promotion of intellectual property rights to protect the products from reproduction and imitation.

Export clothing producers have two options to compete. First, they could focus on OEM production and try to become OEM service providers. The government could support this by completing the supply chain or cluster for specific products such as babywear, sportswear or underwear, in which Thailand has high competitive advantages. The international network and linkages should support and encourage production of such products. Second, the government could encourage export clothing firms to enter brand products, not by creating brands themselves, but by buying brands, acquiring brand licenses or collaborating with domestic designer brands. This support should be organised with training for additional skill sets in, for example, merchandising, retailing and marketing. This would be done along with other support including financial and business matching support.

The sample policies that arise from better understanding of the industry provide customisation measures and direction that are more suitable and appropriate than the current one-size policy for the industry. This gives clearer direction for the government agencies to implement them and for the private sector to understand where the industry is heading.

6.2 Research contributions

This research has contributed to knowledge both empirically and theoretically in three ways:

1. **Empirical case study:** By using empirical accounts to build an industry case study, this research not only enhances our understanding of the textile and clothing industry in Thailand but also provides an understanding of the industry's position in the global arena. This work provides a more detailed and accurate picture of industrial organisation, relationships and performance dynamics than we have had to work with to date. This work provides us with a better picture and understanding of the industry. In addition, by understanding the industry from a global value chain perspective, we should have a better picture of Thailand's position in the world market. This also helps policy makers to understand the current status and strategic issues of Thailand in more detail and ultimately lead them to develop and formulate a better upgrading policy for the industry in the future.

2. **Theoretical issues:** This thesis provides an evaluation of the benefits or limitations of theoretical frameworks associated with the global value chain and business models. These frameworks, particularly GVC, are assumed to have an impact on firm performance.

   Since its inception in the 1990s, the GVC concept has now become an important part of the industrial policy community. It creates a debate that has significant impact on trade policy and the push toward liberalisation. This debate about international trade, free markets and how firms in developing countries can upgrade by integrating with global production networks will have significant impact on developing countries like Thailand.

   This GVC research establishes that there is a linkage between governance, upgrading and firm performance, while the business model concept asserts that different performance arises from a firm's business model. To be able to apply this to government policy, these theories must be evaluated and confirmed. The findings demonstrate the problem in trying to adopt 'ideal' or 'generalised' concepts that are believed to have an impact on performance. The findings should increase government and policy makers' awareness of learning the application and procedure of these analytical tools before they actually implement them to upgrade the industry. With a lack of understanding of the limitation of these tools, the end product of using them, which is industrial policy, will not be effective.

3. **Potential policymaking process and policy implications:** This research is not just about empirical contribution but also about a particular contribution to the world of practice and practical knowledge. It focuses on the implications of theoretical frameworks and

effectiveness of policy in the textile and clothing industry. The results of the thesis help us to understand the policymaking process, which causes policy ineffectiveness for government.

We found that Thailand's current policymaking process has several flaws. It ignores current industry structure and dynamics, and is developed from and by an economic mindset and without awareness of the limitations of various analytical tools, which results in many policy makers bluntly adopting these analytical frameworks. These mistakes give us an inaccurate picture of industry structure, dynamics and competitiveness, hence ineffective industrial policy. This thesis therefore recommends better policymaking tools to help government and policy makers analyse and understand the industry structure and its dynamics in more detail. The new method offers different perspectives to see the industry from a different viewpoint appropriate for policy makers.

6.3 Research limitation and future research implications

The research attempts to produce more details and accurate picture of Thailand's textile and clothing industry structure and to examine relationship between various variables and export performance. To be able to feel confident in the results, the research needs to have large number of sample and true financial numbers. However, due to time and cost constraint, this paper faced following limitation.

To conduct the research we interviewed 17 firms and surveyed 168 firms. Though this could be a meaningful and adequate number to test and examine one industry, the unexpected degree of variety we encountered meant that a more thorough survey of industry experiences was needed to conclusively test the significance of theoretical concepts statistically. When we reclassified the industry into four subsectors – domestic textile, export textile, domestic clothing and export clothing – each group had a sample size of no more than 40 firms per group. The smaller sample size reflects practical issues regarding the short timeframe that occurred due to a political and major flood crisis in Bangkok and Thailand during our fieldwork. The small sample size implies that we are unable to offer definite conclusive interpretations based upon our statistical tests. However, most importantly, given the 'untested' nature of the theories, this research can be seen as the first 'exploratory study' to check whether there is reason to believe the typologies have any uniqueness in the experiences they capture. Since we expected the hypothesis to be true, i.e. that each governance has a specific relationship with performance, we just needed a sufficient number of firms to test the hypothesis. However, we did know in advance and expected the strong variation in results, hence the fallout into different distributions. So given the lack of validation of the theory, which is the key theme of this thesis, we have to make a pragmatic judgment about the sample size we could get and the aim was to determine whether there was any reason to believe the various experiences were unique to any given category. The conclusions of this thesis should thus be seen as indicative, rather than conclusive. To improve the reliability of the study, the number of surveys needs to increase and we should take the results of the study as a hypothesis and verify them with expert interviews and surveys.

In addition to the limitations of the number of samples, the research also has limitation in export performance. The context of this research focuses on export value, which does not include domestic sales. However, we are unable to reclassify the revenue and profit figures we obtained into domestic and international sales. This implies that there might be a flaw in the domestic and export focus reclassification. Furthermore, many firms are reluctant to provide reliable financial information to outsiders, especially government agencies, in order to avoid tax issues. So the reporting of firms' performance could be inaccurate, i.e. firms that do well might report poor performance. This will affect the business model analysis when we try to identify and reclassify those that do well and those

that do not. And this could be one reason why we are unable to identify the business model of those that do well, since they are classified in the poor performance group. The extreme results of revenue growth rate, net profit and net profit growth rate are indicators of this problem.

Finally, the design of the questionnaire could be improved in order to detect business model type better. It was based on the global value chain and value chain frameworks, hence it was unable to clearly capture the different business models. The survey also omitted other variables that could be important for performance but were not captured in the global value chain frameworks, for example type of product, nationality of ownership or strategy and direction taken by each firm. Since the survey cannot capture variables related to firm performance, it is difficult to provide sufficient information to understand what a firm in each value chain does to achieve better performance or poor performance. These factors seem to have implications for firm performance but were not identified in the survey. To improve the questionnaire to understand how firms are differentiated, we could have additional questions on subjects that relate to business models and strategy, such as core competency, value proposition and marketing strategy.

Appendix A: Interview guide

1) What business model is employed by the interviewed firm?

- What type of firm is it?
- Does the firm have its own brand for its product(s)?
- What is the sale structure in terms of percentage of product export and import?
- What are the main export markets of product(s)?

2) What governance style is administered by the interviewed firm?

- What is the structure of the firm's industry?
- How is/are the export distribution channel(s) constructed?
- What is the relationship between the firm and its distribution channel?
- What is/are the role(s) of trading firm(s) in relation to the firm?

3) In what direction does the interviewed firm believe Thailand's textile and clothing industry should be steered towards?

- What does the firm think or believe to be strategic issues for the industry? What is the firm's value positioning in terms of competitiveness enhancement, including price, quality, branding, production standards, productivity, cooperation in value chains, delivery time, design, labour and HR, upstream development, and R&D and technology?

4) What is the government's role in helping promote competitiveness and improve performances of the textile and clothing industry?

- What type of government policy does the firm believe will promote competitiveness and improve performance, including import tax, customs procedures, exchange rates, HR, cluster development, R&D, market expansion, promotion of overseas business and trading-firm-related policy?

Appendix B: Survey questionnaire

Section 1: Company Overview

1. Interviewee Name .... Position ....
   Company Name ....
   Address ....
   Tel. .... Fax. ....

   1.1 Year of registration

   1.2 Capital Registration ....
   ☐ Less than 50 Mill Baht   ☐ 50 to 200 Mil Baht   ☐ More than 200 Mil Baht

2. Number of employment
   ☐ Less than 50 employees   ☐ 50 to 200 employees   ☐ More than 200 employees

3. Type of Business
   ☐ Family Business/ Sole proprietary   ☐ Professionally run non-listed company   ☐ Listed Company

4. Sectors of the company
   ☐ Textile Manufacturers only   ☐ Garment Manufacturers only
   ☐ Textile and Garment Manufacturers   ☐ Trading Firms
   Please specify ....

5. Type of manufacturer *(more than 1 choice)*
   ☐ No Brand Manufacturer   ☐ Original Equipment Manufacturer: OEM
   ☐ Original Design Manufacturer: ODM   ☐ Original Brand Manufacturer: OBM

6. Please estimate what percentage of <u>total sales</u> is from these products?

Textile	Local	=	....	% of Sale
	Export	=	....	% of Sale
Garment	Local	=	....	% of Sale
	Export	=	....	% of Sale
Total		=	100	% of Sale

Section 2: DOMESTC Distribution Channel

7. What is your <u>DOMESTIC TEXTILE SALE</u> Channel?
   ☐ Retailers   % of Sale = ...
   ☐ Direct with buyers or customers   % of Sale = ...
   ☐ Small or independent buyers   % of Sale = ...
   ☐ Trading agents or wholesale   % of Sale = ...
   ☐ Buying office of brand name   % of Sale = ...
   ☐ Other Please specify ....   % of Sale = ...

8. What is your <u>DOMESTIC GARMENT SALE</u> Channel?
   ☐ Retailers   % of Sale = ...
   ☐ Direct with buyers or customers   % of Sale = ...
   ☐ Small or independent buyers   % of Sale = ...
   ☐ Trading agents or wholesale   % of Sale = ...
   ☐ Buying office of brand name   % of Sale = ...
   ☐ Other Please specify ....   % of Sale = ...

Section 3.1: TEXTILE Export Distribution Channel

9. Where do you export your <u>TEXTILE</u> to? *(more than 1 choice)*

☐ EU   % of Sale = ...   ☐ USA   % of Sale = ...

☐ Japan % of Sale = ...   ☐ China   % of Sale = ...

☐ ASEAN% of Sale = ...   ☐ Other   % of Sale = ...

10. What is your <u>TEXTILE EXPORT SALE</u> Channel?

☐ Direct with buyers or customers   % of Sale = ...

☐ Small or independent buyers   % of Sale = ...

☐ Trading agents or wholesale (e.g. Li & Fung)   % of Sale = ...

☐ Buying office of brand name (e.g. Nike)   % of Sale = ...

☐ Other   Please specify ....   % of Sale = ...

11. Who is your top **3** largest buyers? (No name required, please specify type of buyer.)

1) ....   % of Sale = ...

2) ....   % of Sale = ...

3) ....   % of Sale = ...

> **Sample type of buyers**
> * *Retailers*
> * *Direct with buyers or customers*
> * *Small or independent buyers*
> * *Trading agents or wholesale*
> * *Buying office of brand name*
> * *Other*

12. Relationship or buying dynamics with the buyers

☐ Perfect competition e.g. bidding

☐ Supplier contract e.g. turnkey suppliers

☐ Long term relationship

☐ Subsidiaries

☐ Other   Please specify ....

13. Are there any support or constraint from buyers in the following factors?

Finance	☐ Support	☐ Neutral	☐ Limit Reasons ....
HR Development	☐ Support	☐ Neutral	☐ Limit Reasons ....
Product design	☐ Support	☐ Neutral	☐ Limit Reasons ....
Manufacturing & Technology	☐ Support	☐ Neutral	☐ Limit Reasons ....
Market (e.g. trends & demand)	☐ Support	☐ Neutral	☐ Limit Reasons ....
R&D	☐ Support	☐ Neutral	☐ Limit Reasons ....
Rules & Regulations	☐ Support	☐ Neutral	☐ Limit Reasons ....
Other	☐ Support	☐ Neutral	☐ Limit Reasons ....

Section 3.2: Competitiveness of Thailand's TEXTILE SECTOR

14. Who are your main competitors in <u>TEXTILE</u> sector? *(please rank 1-3)*

☐ China   ☐ Vietnam

☐ South Asia e.g. India, Pakistan & Bangladesh   ☐ Eastern Europe e.g. Turkey

☐ Other ASEAN please specify ....   ☐ Other please specify ....

15. Please compare Thai <u>TEXTILE</u> Abilities against Competitors

	A lot better than competitors	Better than competitor	Same as competitor	Worse than competitors	A lot worse than competitors
CAPABILITY FACTORS					
Competitiveness	☐	☐	☐	☐	☐
Quality of product	☐	☐	☐	☐	☐
Variety of product	☐	☐	☐	☐	☐
Lead time & Delivery time	☐	☐	☐	☐	☐
Labor productivity	☐	☐	☐	☐	☐
Manufacturing productivity	☐	☐	☐	☐	☐
Abilities of skilled labor	☐	☐	☐	☐	☐
Abilities of non-skilled labor	☐	☐	☐	☐	☐
Production capacity	☐	☐	☐	☐	☐
Marketing abilities	☐	☐	☐	☐	☐
Marketing channel	☐	☐	☐	☐	☐
Abilities of Trading firms	☐	☐	☐	☐	☐
Custom procedure	☐	☐	☐	☐	☐
COST FACTORS					
Raw material cost	☐	☐	☐	☐	☐
Import Tax	☐	☐	☐	☐	☐
Labor cost	☐	☐	☐	☐	☐
Manufacturing cost	☐	☐	☐	☐	☐
Electricity & utilities cost	☐	☐	☐	☐	☐
Insurance cost	☐	☐	☐	☐	☐
FOREX	☐	☐	☐	☐	☐
Export Tax	☐	☐	☐	☐	☐
Agent or Commission Fee	☐	☐	☐	☐	☐
Land Logistics	☐	☐	☐	☐	☐
Shipping cost	☐	☐	☐	☐	☐

16. Please specify 5 most important factors ....

....

....

Section 4.1: GARMENT Export Distribution Channel

17. Where do you export your <u>GARMENT</u> to? *(more than 1 choice)*

☐ EU   % of Sale = ...   ☐ USA   % of Sale = ...

☐ Japan % of Sale = ...   ☐ China   % of Sale = ...

☐ ASEAN % of Sale = ...   ☐ Other   % of Sale = ...

18. What is your <u>GARMENT EXPORT SALE</u> Channel?

☐ Direct with buyers or customers   % of Sale = ...

☐ Small or independent buyers   % of Sale = ...

☐ Trading agents or wholesale (e.g. Li & Fung)   % of Sale = ...

☐ Buying office of brand name (e.g. Nike)   % of Sale = ...

☐ Other Please specify ....   % of Sale = ...

19. Who is your top 3 largest buyers? (No name required, please specify type of buyer.)

1) .... % of Sale = ...

2) .... % of Sale = ...

3) .... % of Sale = ...

> **Sample type of buyers**
> - *Retailers*
> - *Direct with buyers or customers*
> - *Small or independent buyers*
> - *Trading agents or wholesale*
> - *Buying office of brand name*
> - *Other*

20. Relationship or buying dynamics with the buyers

☐ Perfect competition e.g. bidding

☐ Turnkey suppliers

☐ Relational

☐ Subsidiaries

☐ Other Please specify ....

21. Are there any support or constraint from buyers in the following factors?

Factor				Reasons
Finance	☐ Support	☐ Neutral	☐ Limit	Reasons ....
HR Development	☐ Support	☐ Neutral	☐ Limit	Reasons ....
Product design	☐ Support	☐ Neutral	☐ Limit	Reasons ....
Manufacturing & Technology	☐ Support	☐ Neutral	☐ Limit	Reasons ....
Market (e.g. trends & demand)	☐ Support	☐ Neutral	☐ Limit	Reasons ....
R&D	☐ Support	☐ Neutral	☐ Limit	Reasons ....
Rules & Regulations	☐ Support	☐ Neutral	☐ Limit	Reasons ....
Other	☐ Support	☐ Neutral	☐ Limit	Reasons ....

Section 4.2: Competitiveness of Thailand's GARMENT SECTOR

22. Who are your main competitors in <u>GARMENT</u> sector? *(please rank 1-3)*

☐ China   ☐ Vietnam

☐ South Asia e.g. India, Pakistan & Bangladesh   ☐ Eastern Europe e.g. Turkey

☐ Other ASEAN please specify ....   ☐ Other please specify ....

23. Please compare Thai Garment Abilities against Competitors

	A lot better than competitors	Better than competitor	Same as competitor	Worse than competitors	A lot worse than competitors
CAPABILITY FACTORS					
Competitiveness	☐	☐	☐	☐	☐
Quality of product	☐	☐	☐	☐	☐
Variety of product	☐	☐	☐	☐	☐
Lead time & Delivery time	☐	☐	☐	☐	☐
Labor productivity	☐	☐	☐	☐	☐
Manufacturing productivity	☐	☐	☐	☐	☐
Abilities of skilled labor	☐	☐	☐	☐	☐
Abilities of non-skilled labor	☐	☐	☐	☐	☐
Production capacity	☐	☐	☐	☐	☐
Marketing abilities	☐	☐	☐	☐	☐
Marketing channel	☐	☐	☐	☐	☐
Abilities of Trading firms	☐	☐	☐	☐	☐
Custom procedure	☐	☐	☐	☐	☐
COST FACTORS					
Raw material cost	☐	☐	☐	☐	☐
Import Tax	☐	☐	☐	☐	☐
Labor cost	☐	☐	☐	☐	☐
Manufacturing cost	☐	☐	☐	☐	☐
Electricity & utilities cost	☐	☐	☐	☐	☐
Insurance cost	☐	☐	☐	☐	☐
FOREX	☐	☐	☐	☐	☐
Export Tax	☐	☐	☐	☐	☐
Agent or Commission Fee	☐	☐	☐	☐	☐
Land Logistics	☐	☐	☐	☐	☐
Shipping cost	☐	☐	☐	☐	☐

24. Please specify 5 most important factors ....

....

....

Section 5: Business Improvement

25. Which of these technique has been your key growth for business in past 5 years? (can choose more than one choice)
- ☐ No improvement
- ☐ Move from textile manufacturer only to textile & garment manufacturer
- ☐ Move from garment manufacturer only to textile & garment manufacturer
- ☐ Improve product e.g. R&D, new design & marketing division, cooperation with suppliers to create new product
- ☐ Improve Process e.g. new machinery, process improvement, logistics improvement, supply chain management
- ☐ Improve management system
- ☐ Develop your own brand
- ☐ Other Please specify ....

26. Reason for business improving? (can choose more than one choice)
- ☐ Commitment of owner e.g. change in strategy
- ☐ Increase in competition
- ☐ Lead firms promote/assist upgrading
- ☐ New standard or regulations forces to upgrade
- ☐ Proactive government support
- ☐ Lower cost
- ☐ Increase sale
- ☐ Improve gross margin
- ☐ Found new opportunity
- ☐ Other Please specify ....

27. Which of these has been major challenge to growth for your business? (can choose more than one choice)

☐ Not interested in upgrading	☐ No skill set
☐ Lack of Financial support	☐ Technology Constraint
☐ Lack of market knowledge	☐ Lack of raw material
☐ Unsupportive government policy	☐ Poor Infrastructure
☐ Lead firms block suppliers/trading firms	☐ Invest in other business with higher return
☐ International law and regulations (FTA, Quota)	
☐ Other please specify	

Section 6: Government Support

28. What strategy for Thailand's Textile and Garment Industry should focus on to grow? (please choose one)

☐ OEM with Mass Production (Cost Focus)	☐ OEM with Niche Products (Product Differentiation)
☐ ODM by Develop own Brand	☐ ODM by buy brand license
☐ Status quo (doing nothing)	☐
☐ Other please specify	

29. What support do you need from government?

☐ Stabilize FOREX	☐ Reduce Import Tax of Raw Material
☐ Reduce export tax and VAT	☐ Speed up Custom Procedure
☐ Control Labor Cost	☐ Improve Labor Knowledge
☐ Provide Technology & Manufacturing Knowledge	☐ Provide Market Trend and Behavior information
☐ Develop infrastructure	☐ Expand market via business matching and FTA
☐ Develop Textile & Garment Cluster	☐ Improve Linkage of Textile and Garment sector
☐ Other Please specify	

Appendix C: Interview schedule and interviewee description

	Company Name	Type of Firm	Position of Interviewee	Interview Schedule
1	Li & Fung	Trading Firm	Vice President: Garment Merchandising Section	23 December 2010
2	Mitsui Group	Trading Firm	Assistant General Manager	14 January 2011
3	TTL Industries	Textile	Director, Deputy Managing Director	19 November 2010
4	T. Shinawatra Thai Silk	Textile	Export Manager	20 November 2010
5	Luckytex (Thailand)	Textile	Export Manager	16 December 2010
6	Krungthon Fabrics	Textile & Clothing	Managing Director	17 November 2010
7	Capital Rayon	Textile & Clothing	Managing Director	18 November 2010
8	Mitsubishi Company	Textile & Clothing	Senior Manager: Textile & Garment Department	14 January 2011
9	Theparerg	OEM Clothing	Managing Director	18 November 2010
10	Union Garment	OEM Clothing	Advisor (Ex-MD)	12 December 2010
11	Thanulux	OEM & OBM Clothing	Senior Export Manager	14 December 2010
12	V.T. Garment	OEM Clothing	Export Manager	15 December 2010
13	Castle Peak Holdings	OEM Clothing	Deputy MD, Marketing Director	16 December 2010
14	Four Star Garment and Textile	OEM Clothing	Managing Director	17 December 2010
15	Central Trading	OBM Clothing	Assistant Vice President: Overseas Business Development	26 November 2010
16	S-Class	OBM Clothing	Managing Director	15 January 2010
17	KC Garment	OEM Clothing	Managing Director	15 January 2010

Appendix D: Synopsis of interviews

1. Li & Fung	
Company background and business model	- Li & Fung is one of the largest foreign trading firms in Thailand, based in Hong Kong. It trades various types of product. One of its sectors is textiles and clothings. - There are two types of Li & Fung customer/buyer: retailers and those who have their own stores, e.g. Marks & Spencer.

Distribution channels and governance	- In the past, Li & Fung played the role of middleman between local manufacturers/factories and its customers/buyers, incl. follow-up tasks.
	- At present Li & Fung plays a more proactive role by giving importance to the following activities:
	  o Study of demand and trend markets and providing its customers with significant information on the current market situation so they are able to formulate policies to cope with certain situations.
	  o Audit of factory standards in line with human rights protection or welfare regulations as requested by its customers.
	  o Coordination and support of its customers in terms of payment methods, e.g. LC, TT.
	- Foreign-based trading firms like Li & Fung that are more centralised and globalised with worldwide branches have more advantages than local Thai trading firms, as they can provide customers/buyers with a one-stop service or global service, which is what they prefer.

Direction of the industry	- Currently, Thai manufacturers in the textile and clothing sector develop more quickly than in the past. They employ more IT and develop machinery that leads to faster processes, shorter lead times and less waste. - As the end buyers/customers require higher standards and more complicated conditions, deals become more difficult. Stakeholders in the value chain should therefore cooperate with each other, otherwise they will find it difficult to survive. - Thai fabric manufacturers develop/adjust slowly. They only pay attention to production and don't socialise with others, resulting in limited knowledge and information and lack of awareness of what happens outside. - Thailand specialises in elastic fabrics, sportswear and children's wear. - Brand building is difficult for Thai manufacturers, since the end buyers/customers have their own design and concept for their own stores. - Most customers/buyers who have their own brands do not rely on trading firms or agents. - Main strengths of the Thai textile and clothing industry:

1. Li & Fung	
	o Thai fabric manufacturers develop/adjust slowly. They only pay attention to production and don't socialise with others, resulting in limited knowledge and information and lack of awareness of what happens outside. o Thailand specialises in elastic fabrics, sportswear and children's wear. - Main weaknesses of the Thai textile and clothing industry: o Thailand has a shortage of skilled labour, both office employees (as factory coordinators) and factory workers. o Thai manpower has foreign language and communication skill constraints, whereas Hong Kong and Singapore have more advantages in this respect. o Factory workers are not efficient or enthusiastic enough compared to Chinese and Vietnamese labour. o Lack of upstream to downstream cooperation along the value chain. o Thai clothing manufacturers get pressure from both raw material suppliers and trading firms (which are also pressurised by their customers/buyers), and at times from banks due to cash flow problems. o Thailand is less competitive in jeans and canvas.
Government support	- Import Tax Policy: reduces import tax for exporters to promote export. - Customs Procedure for Exports: deregulates export procedures, therefore less paper work (leading to lower costs).
Other	-

2. Mitsui Group	

Company background and business model	- Mitsiam Lifestyle Co., Ltd. is a subsidiary trading company of the Mitsui Group. Its trading business ranges from yarns and fabrics to clothings/apparel (warm-up suits, sportswear).
	
	 - Its distribution channels can be divided into major markets:
	
	     o Domestic market: 50% of total sales revenue is the domestic market. It sells only yarns and fabrics (polyester and nylon) to local wholesalers in China Town and to some yarn/fabric-based manufacturers, e.g. fishing nets, apparel.
	
	     o Export market: From the remaining 50% of total sales revenue, 30% are clothing exports to Japan only, whereas the other 20% are yarns/fabrics exported by offshore businesses to toy-stuffing manufacturers in China and Vietnam, glove manufacturers in Malaysia and wholesalers in Korea and Pakistan.
	
	     o China imports yarns from Thailand because the yarns of Mitsiam Lifestyle are unique and of high quality (produced by Japanese high technology) and suited to the toy-stuffing industry. Japan is the pioneer in this special type of yarn.

Distribution channels and governance	-

Direction of the industry	- Thailand and Indonesia are leaders in basic raw materials, whereas Taiwan is the leader in high-tech raw materials. However, Taiwan is less competitive than Thailand due to tariff barriers, whereas Thailand has FTA and ASEAN trade agreements.
	
	 - Taking a raw material sourcing role enables Thailand to survive in the global textile and clothing sector. The potential markets for Thailand's exports are Bangladesh and Vietnam, which are resource-poor countries and inevitably have to import raw materials.
	
	 - Thailand's textile industry is growing, while its clothing industry is declining. This is because, on the one hand, Thailand is competitive in terms of abundant raw materials, but on the other it has to face problems of high labour costs and insufficient skilled labour.
	
	 - Main strengths of the Thai textile and clothing industry:
	
	     o Apart from Indonesia, Thailand is a raw material leader for the textile and clothing industry. It has abundant resources, whereas other countries, e.g. Cambodia, Vietnam, Myanmar and Bangladesh, have to import raw materials (yarns, fabrics) from Thailand.
	
	 - Main weaknesses of the Thai textile and clothing industry:
	
	     o Thailand has high labour costs.

2. Mitsui Group	
	o Thailand has insufficient quantities of skilled labour, esp. sewing skills, and thus relies on foreign labour imports from neighbouring countries, e.g. Myanmar and Cambodia. In contrast, neighbouring countries, e.g. Cambodia, Vietnam, Myanmar and Bangladesh, have sufficient skilled labour. - The key survival factors for Thai clothing manufacturers in the so-called 'sunset industry' are as follows: o Development of factories from the perspective of productivity, management and production technology o Reduction of scale/factory size to sustain production o Approaching brand stores directly o Complying with standard regulations and criteria of the US and EU as Thailand's major export markets - Thai people are not good at brand building. In addition, Thai manufacturers face the following obstacles in brand building: o Limited capital: brand building requires high marketing and promotion costs o Very high competition in both the domestic and international markets (famous designers)
Government support	- The government should avoid the FTA that will harm domestic industries. - The government should control the Thai Baht value to facilitate Thai exports. - The government should continue offering training courses/programmes or seminars to Thai manufacturers and exporters so as to enhance their knowledge.
Other	-

3. TTL Industries	
Company background and business model	- T T L Industries Public Co., Ltd. has been in a joint venture with Itochu Corporation, the Japan-based multinational trading firm, since the business was set up more than 40 years ago. The company runs an integrated textile business, ranging from spinning, weaving and dyeing to finishing – but not printing – under its own internationally famous brand 'T T L'. There are over 1,000 workers in the factory.
Distribution channels and governance	- The ratio of export to domestic sales is 50:50. - The company exports around 95% of its clothing directly to customers. The remaining 5% of the total export volume is exported through Itochu's trading firm with its own network. This is just for the sake of keeping a counter-balanced business relationship with Itochu. Its export markets are the Middle East, Asia (e.g. Japan, Australia), the USA, South Africa, etc. - For the domestic market, the company distributes its woven textiles through local traders/trading firms on the basis of a relationship. The company's policy is not to give credit to traders/trading firms. Good quality and uniqueness are its customer value proposition.
Direction of the industry	- Nowadays, it is no longer a prosperous industry, as China and India are distorting the market by price dumping. Most Thai clothing manufacturers/exporters are OEM and are controlled by customers in terms of specification, price and quantity. - To be able to survive or compete in the international market, Thai manufacturers/exporters have to build brand, credit and reputation. At the same time, the products must be of great quality and unique or different.
Government support	- The textile and clothing cluster in Thailand is impossible because manufacturers compete with each other instead of collaborating.
Other	

4. T. Shinawatra Thai Silk	
Company background and business model	- T. Shinawatra Thai Silk (Thailand) Co., Ltd. is one of Thailand's leading manufacturers and exporters of silk. There are over 70 workers in the factory. - The production line ranges from weaving, dyeing, printing and finishing to final assembly and includes clothings, apparel, accessories and home furnishings, for example, scarves, handkerchiefs, pillow slips, handbags, bags. - 80% of the total production volume is silk fabric, whereas 20% is clothings, apparel, accessories and home furnishings. - The ratio of export to domestic sales from the total revenue is 50:50. - 90% of the total export volume is home furnishings, 5% is scarves and the other 5% is clothings. - Raw materials (silk yarns) are purchased from local suppliers (50%) and from China (50%). The reason for importing from China is because the texture of Chinese silk yarn, used for some types of product, cannot be found in Thailand. The weaving machines are imported from Korea and the colour chemicals for dyeing are imported from Germany.
Distribution channels and governance	- In both domestic and international markets, the company sells its products directly to customers. - The company exports the majority of its products to the USA and EU. In addition, it exports a small portion to Japan and Hong Kong. - Domestic customers are both wholesale and retail.
Direction of the industry	- Thailand can compete with other countries like China if it focuses on niche markets by producing unique and fine quality products. China focuses on mass production. - With regard to the Thai silk industry, after Thailand signed the JEPTA (Japan-Thailand Economic Partnership Agreement) with Japan, it was able to export more to Japan due to zero import tax.
Government support	- The government should help expand the market by accelerating the negotiation process of the FTA with the USA. - The government should pay more attention to the Thai silk industry and clearly understand the silk business. It should promote and support R&D and advanced training, particularly in marketing knowledge and skills.
Other	

5. Luckytex (Thailand)	
Company background and business model	- Luckytex (Thailand) Public Co., Ltd. is one of the largest textile exporters in Thailand, which was established in 1960 – almost 50 years ago. Toray Industries Inc. participated in its management and gained the majority of the company's shares. Basically, it is a Thai-Japanese joint venture. - The company is an integrated vertical textile manufacturer, ranging from spinning, weaving and dyeing to finishing (piece goods). - The yarns (cotton, polyester) must be imported for spinning in its factory. - There are three factories in Samutprakarn province on the outskirts of Bangkok, Thailand. - The total number of employees is 2,419: 100 at head office and 2,319 at its plants. - The sales quantity ratio for export and local markets is 70:30.

Distribution channels and governance	- The export markets are 36% Europe, 28% Asia, 21% Middle East, 8% Japan and 7% USA.
	- For the export market, 80% of sales are exported through trading firms, whilst 20% are through individual agents/traders.
	- Domestically, the company sells directly to customers, which are local wholesalers in China Town, Bangkok.
	- In the past 20 years, trading firms have played a dominant role in the textile industry. However, since 2001 most end customers/buyers have started to change their behaviour in a smart way by making direct contact with manufacturers/suppliers due to globalisation and borderless communication as a result of the internet. Consequently, the role and function of trading firms are gradually declining. In contrast with the clothing industry, trading firms still play an influential role in export distribution, as clothings are more complicated and detailed products than textiles.
	- Luckytex's distribution mostly relies on Japan-based trading firms such as Itochu, Marubeni and Mitsui which have opened branch offices in Thailand and are middlemen in further distributing to worldwide end buyers, incl. modern trade like Tesco Lotus, Marks & Spencer.
	- Advantages of distribution through trading firms:
	  o Trading firms have extensive worldwide client networks and branch offices, incl. Thailand. In contrast, individual agents/traders have client network constraints. Furthermore, there is no difference in commission between trading firms and individual agents/traders, as Luckytex imposes the same commission level policy on all.
	  o Distribution through trading firms helps secure manufacturers financially. In other words, payment to manufacturers is guaranteed.

5. Luckytex (Thailand)	
	o Distribution through trading firms helps prevent products competing with each other in the market. It helps avoid duplicated distribution channels. o Trading firms help guide manufacturers in market trends, demand and behaviour (e.g. specification, design, pattern), which will be a direction for R&D of manufacturers.
Direction of the industry	- Comparing the growth of Thailand's textile and clothing industries has shown that the Thai textile industry has better growth performance than the clothing industry. This is partly because Thai textile manufacturers keep controlling and improving the quality of textiles to maintain their strength, enabling them to compete with China, Indonesia and Vietnam where the textiles are even cheaper. Therefore, in spite of higher prices, they are still acceptable to customers. This means that customers get the quality they deserve at a price they can accept and afford.
Government support	
Other	

6. Krungthon Fabrics	
Company background and business model	- Krungthon Fabrics Co., Ltd. operates a textile and clothing manufacturing business for two types of product, namely elastic textiles and elastic clothings. - With regard to the elastic textiles, the company focuses on the domestic market, which accounts for 99% of its total revenue, whereas its direct export to Laos and Macedonia accounts for only 1%. The company's elastic textile production aims to serve its own clothing production for both the domestic and OEM-export markets. - With regard to the elastic clothings, the company focuses on the international market by exporting as much as 95% of its total production volume to the EU, UK and Belgium through two major types of agent, namely Li & Fung, the Hong Kong-based and largest multinational trading company in Thailand and a few independent/freelance agents, whereas domestic sales account for 5% of its total production volume. Its clothings for the domestic market are made from its own elastic textiles, which it also weaves (30% of the total production volume is for the domestic clothing market, whereas 70% is for the export market). - At present, there are more than 300 workers in the Krungthon Fabrics factory. - Raw materials are mostly imported from the USA (95%), while the remaining 5% are purchased from local producers/suppliers.
Distribution channels and governance	- As regards the international market, the company exports the elastic clothings through two main distribution channels: trading firms, namely Li & Fung, the Hong Kong-based multinational trading company; and a few independent agents. - In addition to elastic clothing export, the company exports elastic textiles/fabrics through its own salesmn directly to Laos and Macedonia. The trading has been based on the relationship and trust between the company and foreign clients (clothing factories) in Laos and Macedonia for more than 10 years. Clients visit the company to place orders approximately twice a year.
Direction of the industry	- As a consequence of the WTO dismantling the quota regime since 2004, the Thai textile and clothing industry has been negatively affected by free competition, allowing lower-cost countries such as China more opportunities to gain competitive advantage. Nevertheless, the Thai clothing industry continues to survive, as buyers (e.g. Nike, Adidas) like to diversify risk that might happen unexpectedly at any time, for example, natural disaster, epidemics, etc. Those buyers still order a certain proportion from different manufacturing countries worldwide like Thailand, Vietnam, Cambodia and China.

6. Krungthon Fabrics

- To be able to survive in the highly competitive global situation, Thai textile and clothing manufacturers need to deploy a price-competitive strategy, focusing on low cost of production and high speed delivery. Nevertheless, this strategy is not sufficient to give companies a sustainable competitive advantage over rivals.

- As regards the textile industry, China and India are more competitive than Thailand due to the lower costs of production as a result of having half the labour costs. Furthermore, different textile colour levels have different implications, for instance in the case of basic colours (white, beige) Thailand can compete with China, while the darker the colour, the less it can compete. This is because Thailand has to import colour chemicals, resulting in higher production costs.

- With regard to the clothing industry, if factories have a vertical set-up business model (holistic integration consists of spinning, weaving, dyeing and clothings), they will have competitive advantage over competitors due to the lower costs of production. Thailand's main competitors are China and Korea in terms of clothings.

- Most Thai clothing manufacturers, incl. Krungthon Fabrics Co., Ltd., are OEM and have to rely mainly on trading firms.

- Trading firms (e.g. Li & Fung, Mitsui, Diethelm) play an important role in the Thai clothing industry as middlemen or business matchmakers between the Thai clothing manufacturers and end consumers/buyers (e.g. Carter's, Sierra, Walmart). This therefore gives Li & Fung more influence and power over Thai clothing manufacturers than buyers (e.g. Carter's).

- Li & Fung, the Hong Kong-based multinational trading company, is the largest trading firm in Thailand on which Thai manufacturers have to rely to be able to enter the global market. It partners a worldwide network of thousands of independent suppliers, filling customers' orders by selecting the best partners for each part of the job. At the front end, it provides design, engineering and production planning services; at the middle stage, it organises raw material and component sourcing; and at the back end, it offers quality control, testing and logistics services.

- Particular specifications, incl. type of textile, pattern, style and colour, are dominantly controlled by the trading firm Li & Fung so as to meet its clients' requirements. For every order, the goal is to customise the value chain to meet the customer's specific needs.

- The trading firm Li & Fung normally charges commission from both manufacturers and end consumers/buyers.

- Advantages of distribution through trading firms:

6. Krungthon Fabrics

	o Li & Fung has an extensive global presence and operates a sourcing network worldwide. o It can offer longer credit (due to high equity/venture capital) and a letter of credit (LC) opening service to clients. - Disadvantages of distribution through trading firms: o Thai clothing manufacturers are controlled by trading firms in terms of factory standard conditions, incl. factory size, labour status (related to human rights protection) as well as clothing quality specification, e.g. design, pattern, style, colour, raw materials (type of textiles) or even price. o Thai manufacturers as followers face constraints in growing their business or enhancing their competitiveness, as quality and price are controlled by trading firms/buyers. To be able to survive in this vicious circle, Thai manufacturers can only reduce the costs of production or even allow themselves to incur a loss, otherwise the trading company Li & Fung, for instance, will move to another manufacturer, as one of its tasks is to outsource the lower-value-added tasks to the best possible locations around the world. Consequently, textiles and clothings become truly global products.
Government support	- Up to this point, there is still no cluster of Thai textile and clothing manufacturers as well as local trading firms. This is derived from the nature and characteristics of Thai businessmen. They are selfish and do not want to unite with anyone. In the opinion of the Managing Director of Krungthon Fabrics, Thai manufacturers should unite in the cluster, leading to higher bargaining power and eventually higher competitiveness and export performance. Furthermore, Thailand still lacks designers. To solve this problem, the government should promote and support the industry, commencing with students, to be on the international stage. From this perspective, large Thai companies such as Nan Yang and Jong Satit might be able to develop to become large trading firms in the future but it takes a long time to grow as large as Li & Fung. - The government should deregulate all the rules and regulations on factory set-up to promote and facilitate investment. - The government should be more active in bilateral or multilateral agreements such as FTA, ASEAN.
Other	- If possible, the company wants to move its production base to Vietnam or Cambodia where the costs of production are lower. - The company does not want to focus on marketing. Instead, it wants to

6. Krungthon Fabrics	
	reduce costs as much as possible, since low production costs are the key success factor for the OEM export business, whereas distribution capability mostly relies on trading firms, as the company has insufficient ability to access the international market by itself due to capital constraints and lack of human resource skills and ability. The most important success factor is how to produce clothings at a low price to be able to compete with other low-cost manufacturing countries such as China, Vietnam and Cambodia, which is a very challenging task for Thai clothing manufacturers to perform.

7. Capital Rayon	
Company background and business model	- The business has two major products, namely elastic textiles and elastic clothings. 25% of the total self-woven textile production volume serves its own clothing factory for OEM-export, whereas 75% is sold directly to other textile-based factories that produce home furnishings, apparel, accessories (socks, gloves), shoes, etc. - 90% of raw materials, comprising both natural fibres (cotton) and synthetic fibres (TC, TK, polyester) are purchased from local suppliers, whereas the remaining 10% are mostly cotton imported from Pakistan, India, Vietnam and Indonesia. Price, speed of delivery and the seasonal lack of raw materials are influential import factors. - There are approximately 700 workers in the factory.

Distribution channels and governance	- The elastic textiles are distributed through independent agents (mostly Indian traders).
	
	- The elastic clothing distribution has to rely on Li & Fung, the Hong Kong-based multinational trading company because of: 1) lack of marketing skills and capability to enter the foreign markets; 2) lack of distribution channels; 3) lack of qualified and capable human resources; and 4) high marketing costs.
	
	- Li & Fung plays a dominant role as a bridge or business matchmaker between sellers and buyers to make trading sustainable as long as possible.
	
	- The criteria for sourcing the right manufacturers for its clients/buyers are quite strict, in terms of their profile, image, qualifications, factory standards, labour use (in relation to human rights protection) and whether they meet the imposed criteria and standards.
	
	- To enable a Thai manufacturer to get orders through Li & Fung, Li & Fung will help a factory to set production standards and sends its compliance company to investigate the factory. The first investigation is offered free of charge. If the factory does not fulfil the criteria the first time, it will have a second chance to improve and be re-investigated but with a certain charge.
	
	- There is a follow-up and monitoring system to check the progress of orders and to assure that the quality, lead time and delivery time of products meet the customers' needs.
	
	- Advantages of distribution through trading firms:
	  o Li & Fung has an extensive global network of clients to penetrate various markets worldwide.
	
	- Disadvantages of distribution through trading firms:
	  o All rules and regulations are controlled by trading firms and buyers, regardless of how capable the manufacturer is.
	  o Capital Rayon has to deal with price control/dumping from Li & Fung,

7. Capital Rayon	
	which is demanded by Li & Fung's client network. If the factory cannot produce at the quoted price or comply with the conditions of Li & Fung's compliance company, it will not get orders.
Direction of the industry	- In the past, the quota system under the WTO regime treated manufacturers unfairly in the way that it gave more benefits to larger manufacturers with better connections. - The Thai textile and clothing industry is short of more than 50,000 workers. - The cost of production increases continuously due to higher oil prices. - The textile and clothing cluster cannot be successful, as Thai people are selfish and do not want to join or share with anyone. They like to open companies on their own. - Getting orders from Japan is quite a difficult task because Japanese people have high requirements/expectations but low order quantities. Furthermore, it is difficult to deal with Japanese people, as they do not trust others easily. In addition, when compared to Korea, Thailand is disadvantageous in terms of longer delivery times.
Government support	- The government should place importance on bilateral or multilateral agreements, for example FTA with the USA, to reduce or avoid non-tariff barriers.
Other	-

8. Mitsubishi Company	
Company background	- Mitsubishi Co., Ltd. has engaged in upstream, midstream and downstream activities in the textile and clothing industry. - With regard to upstream products (e.g. yarns, fibres, fabrics), in the past Mitsubishi imported from Japan but as there are now hi-tech Japanese factories in Thailand, the company no longer imports. Mitsubishi sells these upstream products to both the domestic and export markets, mainly in Japan and Europe. - With respect to midstream industry (e.g. semi-finished goods, fabrics), Mitsubishi exports to Europe, Australia and Bangladesh. - As regards downstream industry (clothings), more than 90% of clothings are exported to Japan where quality is non-negotiable for buyers. This means that the products must have almost zero defects (0.29% defect is acceptable). - The local manufacturers with which Mitsubishi deals are a kind of alliance manufacturer. The relationship between local manufacturers and Mitsubishi is developed on the basis of their matching cultures.
Business model	- For upstream and midstream products, the company sells through agents. - For downstream products (clothings), Mitsuno is its marketer.

Direction of the industry	- As a consequence of the sunset industry, some Thai clothing manufacturers have to change the product positioning of local brands. Some of them have to close or change their business.
	 - In terms of the clothing segment, this can be summarised as follows:
	   o Thai fashion clothing manufacturers cannot survive. Korea and Japan are dominant players in fashion.
	   o In contrast, Thai manufacturers whose business focuses on niche markets (e.g. uniforms) can survive.
	   o Furthermore, brand owners are able to survive because they can outsource others.
	 - Key factors that lead Thai clothing manufacturers to compete or survive are:
	   o Strong ability in visual merchandising (VM) and store/display design as 'retail art'.
	   o Strong connection with retail developers, e.g. department stores.
	 - Opinions on brand building:
	   o It is difficult for Thai manufacturers to build a brand because they do not know as much about demand or market size as brand owners. Compliance with buyers' requirements for OEM is already tough enough for Thai manufacturers.

8. Mitsubishi Company	

Government support	- According to their nature and mentality, Thai entrepreneurs do not want to share information or unite/cooperate with others. They maintain confidentiality and do things on their own.
	
	- The Thai government should facilitate and promote exporters more by:
	  o Deregulating customs procedures to speed them up. Nowadays customs procedures are very time consuming and complicated.
	  o Reducing import tax on any products that Thailand cannot produce, for instance, machinery, dyeing chemicals.
	  o Offering export incentives to exporters, e.g. annual income tax reductions for good export performance.

Other	- Thai trading firms are not capable of marketing or trading. Therefore, there are no outstanding Thai trading firms. Reputable Thai trading firms are mostly foreign-based companies.

9. Theparerg	
Company background and business model	- Theparerg Co., Ltd. is a clothing manufacturer for the OEM-export markets only. There are approximately 700 workers in its factory. - Garment production is mainly trousers and skirts (jeans), whereas jacket production is minimal. - Raw materials (textiles and apparel) are mostly imported, because customers require specific raw material and purchasing sources.

Distribution channels and governance	- The company exports 50% of its clothings through buying agents (one local and one foreign), mainly to small and medium-sized customers, whereas the other 50% is normally exported directly to buying offices of large-sized customers such as Gap, Nike and Adidas.
	
	- Most brand-name offices are based in Hong Kong because there is a large customer base over there (more than 50% of the world), while in Thailand there are only branded sportswear offices such as Nike and Adidas.
	
	- Nike, Adidas: They get intensely involved with the OEM of their companies. They formulate specifications (style, pattern) and factory standards, and even control raw material and cloth consumption up to lead time. They know all about costs of production.
	
	- Gap: It is less involved with manufacturers or the cost of production than Nike or Adidas. Instead, it will give more importance to factory standards and employment, in terms of safety and human rights protection.
	
	- Li & Fung: It serves as a supply-demand matchmaker/business matchmaker between manufacturers and its customers. Commission will be charged for sourcing from both manufacturers and customers.
	
	- Advantages of distribution through trading firms:
	  o Li & Fung can offer an LC opening service to clients.
	  o It has a large customer base worldwide.
	
	- Disadvantages of distribution through trading firms:
	  o Reliance on trading firms causes manufacturers' costs of production to get higher, as they charge commission for sourcing.

Direction of the industry	- At present, the worldwide clothing industry is based on price competition. The exchange rate fluctuation of the Thai Baht also has an impact on the export performance of Thai clothings. - According to the current global trend due to the economic recession, buyers' ultimate demand is to purchase at the lowest price possible. As both buyers and trading firms in the global clothing industry have more power and influence than suppliers/manufacturers, they control the market, and as a result, they reduce the margins of manufacturers, not those of trading firms.

9. Theparerg	
	This is a vicious circle that manufacturers have to go through.
	- China and Vietnam are in an advantageous position owing to their labour costs being almost half those of Thailand. In particular, the Vietnamese currency (Dong) has been pegged to the US dollar, so has more advantages than Thailand.
	- Thailand is now regarded as a high-cost production base. In the future, it might be possible that foreign buying agents in Thailand will move to other countries where the costs of production are lower, leading to more customer orders. For instance, Li & Fung might lay off its workers or close its branch office in Thailand if one day it is unable to find the right factory for its customers and if the purchasing power of local people is lower due to the economic recession. It will then find more suitable factories in other countries where they can market well. This is a domino effect.
	- Thailand has human resource constraints; one Hong Kong merchant is equivalent to five Thai merchants. Thai people are capable of production but lack marketing skills and the capability to penetrate the global markets.
Government support	- The company is now one of nine candidates applying to join government branding projects so as to build the Thai brand and develop both domestic and international distribution channels. Any companies selected by the government will get support from a designer team.
Other	-

10. Union Garment	
Company background and business model	- Union Garment Co., Ltd. is a clothing OEM and exporter. Its product line ranges from shirts and t-shirts to uniforms. - The ratio of export to domestic sales volume is 90:10. - The brands for which the company operates the OEM business include Thomas Pink and Vanheusen. - The export markets are Italy, Australia, Canada and Scandinavian countries.
Distribution channels and governance	- The company exports 90% of the total sales volume of clothings for the export market through trading firms which are buying offices/agents and individual agents from Japan, Malaysia and Scandinavian countries with extensive client network connections accounting for 75%, whereas the other 25% is exported directly to small-sized customers on the basis of long-term relationships and trust. - The difference between direct export and export through trading firms is that there are no factory standard requirements for direct export to clients, whereas export through trading firms requires strict factory standards in terms of labour and human rights protection.

Direction of the industry	- The following factors obstruct the brand building of Thai manufacturers:
	  o High costs – both the costs of marketing and intellectual property rights protection (trademark)
	  o No 'selling points' of Thai clothings
	  o No niche or unique quality of clothings
	  o No salesmen
	  o No good partner with which to form a joint venture
	- The aforementioned factors are barriers from OEM development to ODM.
	- The only way to enable Thai manufacturers to develop from OEM to ODM is to set up a joint venture with foreign countries to learn know-how, particularly marketing skill sets, to be able to penetrate the international market.
	- There are three critical solutions to remain competitive:
	  o As an OEM, to be able to survive and compete with China the company should get small orders, as China dominates mass/big orders. This is a remaining gap for the company to fill.
	  o Customer Relationship Management (CRM) should be highlighted to gain and maintain customers.
	  o The cost of production should be as low as possible. In an increasingly competitive global environment, price or cost competitiveness is becoming a key issue, not competitiveness through quality, as every country in the Asian region (e.g. Vietnam, China, Myanmar, Cambodia,

10. Union Garment	
	Laos, Cambodia) can produce a relatively similar quality. Their skills are not much different from each other's.
Government support	-
Other	- Normally, most trading firms are based in Hong Kong and Singapore, as the people over there have exceptional marketing skills. - Nevertheless, in Thailand there is still a lack of manpower with an outstanding marketing ability, international customer base or worldwide client network. Furthermore, Thai people do not want to take any risks once problems between manufacturers and customers/buyers occur.

11. Thanulux	

Company background and business model	- Thanulux Public Co., Ltd. has been one of Thailand's leading manufacturers and exporters of men's, ladies' and children's wear and leather goods for more than 30 years. Its vision is to be a leader of the fashion industry in Thailand and the Asian region.
	
	- The company has its own production base, which produces shirts, trousers and suits of high quality for both men and women, and can control production from beginning to end.
	
	- Thanulux is a mixed kind of OEM and ODM/OBM with both licensed brands and its own original brands:
	  o The licensed brands range from Guy Laroche Paris, Jean-Louis Scherrer Paris, Arrow, Daks London, Elle Paris and Patagonia (USA) to Cutter & Buck.
	  o The original brands include Louis Fontaine, Pari Passu and BSC.
	
	- The lead time for samples is normally up to one week, whereas for production it is up to four weeks after confirmation (also depending on materials).
	
	- There are four factories, which are located in Bangkok, Sriracha, Kabinburi (in the Eastern part of Thailand) and Lumphun (in the Northern part of Thailand) with 2,700 company employees and 2,190 total manpower for the clothing plants.
	
	- The ratio of export to domestic sales volume is 40:60.

Distribution channels and governance	- With regard to the distribution channels for the domestic market, which accounts for 60%, Thanulux relies on two major trading firms, namely I.C.C. International Plc. and O.C.C. Plc. to distribute its products to local department stores in Thailand. On the other hand, Thanulux also sells its products directly to customers/buyers, which are speciality stores such as Gaysorn Plaza, one of the most famous luxury branded speciality stores in Bangkok. - Of the 40% total sales volume for the export market, Thanulux exports through trading firms (75%) and directly to customers (25%). - All the trading firms are foreign-based companies such as Japan-based trading firms Mitsubishi, Marubeni, Itochu and Mitsui (which locally dominate more than half of the domestic market) and Korea-based trading firms Samsung Fashion and LG Fashion. - Overall, there are local Thai traders/individual agents but rarely any local Thai trading firms because Thailand has a limited number of capable traders that can build relationships or have an extensive worldwide client network. - In general, Thanulux relies on trading firms for both domestic and export

11. Thanulux	
	distribution channels.
	- Advantages of distribution through trading firms:
	o Trading firms have relationships and an extensive worldwide client network.
	- Disadvantages of distribution through trading firms:
	o The reliance on trading firms causes the cost of goods sold to be higher due to the commission charge. The commission charged by larger-sized trading firms is between 10 and 15%, whereas the commission charged by small-sized trading firms is about 3%.
	o As trading firms like to protect sourcing assistance benefits for their own customers, they intervene in the details of manufacturers' production costs, together with the formulation of specifications and target prices as they wish. Consequently, manufacturers have to deal with prices lowering and accept that the target price is just for survival.
Direction of the industry	- It is likely that Thailand's exports will not be able to survive in the future, as Thailand surrenders to China, Indonesia, Vietnam, Taiwan and Korea in terms of new ideas/concepts of textile and clothing fashion and a disadvantageous upstream sector (the recycled yarns of thread must be imported, leading to longer lead time and higher cost of production). Therefore, the only sustainable way to survive is to sell domestically.
	- The Thai clothing industry, which mostly contains OEMs, is becoming a sunset industry. To enable Thai OEMs to be stronger and survive, they should cooperate with each other across silos so as to have the bargaining power to bear prices that the trading firms target.
	- Thanulux targets its positioning and role to develop from manufacturer to outsourcer in the future. It will play a more active role in being ODM and OBM rather than OEM, together with creditability building as a vital factor for ODM and OBM. Furthermore, as Thanulux already has an advantage in the way that at present it is a licensee for various brands and also has its own brands, it would be easier for the company to move up to being OBM eventually.
Government support	-
Other	-

12. V.T. Garment	

Company background and business model	- V.T. Garment Co., Ltd. is one of the largest export clothing manufacturers in Thailand. The company specialises in high-end outerwear, casual wear and sportswear, ranging from jackets, functional clothes, ski wear, jogging suits, shorts and trousers to vests.
	- Its vision is to be a "world-class clothing manufacturer".
	- Its products are classified into two types:
	  o Woven: outerwear jackets, unlined jackets, padded jackets, seam-sealed jackets, ski jackets, trousers, shorts, bermudas
	  o Knit: fleece jackets, pants, jogging suits, training suits, t-shirts
	- The company has run the business for both the OEM and ODM/OBM. The OEM customers comprise many international brands, such as The North Face, Nike, Jantzen, Nautica, Patagonia, El Corte, Anson's, Decathlon and Peek & Cloppenburg.
	- The company has also been manufacturing jackets with its own design and brand, 'Milestone', for three years and has been quite successful so far but they are sold domestically. The success case is evidenced in the daily sales volume at the local trade fair, valued at approximately 80,000 – 90,000 Thai Baht.
	- The company is fully oriented towards export only (100%) and its markets are divided into two major markets: 50% for the European market and 50% for the US market.

Distribution channels and governance	- Since V.T. Garment is an OEM for several brands, the company distributes mainly through the buying offices of each brand. However, some are distributed through individual agents but this is just a minority.
	
	- Roles of trading intermediaries in Thailand's textile and clothing export:
	- In general, V.T. Garment's distribution relies mainly on buying offices.
	- There are two types of buying policy:
	  o Closed-end: manufacturers have to fully comply with all the specifications, rules and regulations of the buying offices so as to meet the end buyers' requirements.
	  o Open-end: manufacturers partially abide by the specifications, rules and regulations of the buying offices.
	
	- Advantages of distribution through buying offices:
	  o Distribution through buying offices is equivalent to direct selling to customers, so the costs of goods sold are cheaper, as there is no commission charge.

12. V.T. Garment	
	- Disadvantages of distribution through trading firms: o Buying offices as an intermediary between manufacturers and end consumers need to strictly investigate factory standards. They require high standards but offer low prices in order to protect their own and also their customers' benefits as much as possible.
Direction of the industry	- V.T. Garment has formulated a five-year roadmap for 2010 – 2015, with the aim of being a "world-class clothing manufacturer" by the following lean management system: o Value proposition to customers is "highest quality, lower cost, shortest lead time by eliminating wasted time and activity" o Maintaining positive open lines of communication with business partners to contribute to the smooth flow of information and efficient cooperation over the long term o Achieving total participation of all employees to relentlessly pursue cost saving, whilst producing the best quality products and adding value for customers o Initiating programmes to provide all employees with the skills and tools they need to succeed o Promoting and supporting a culture of continuous improvement and sustaining operational stability
Government support	-
Other	-

13. Castle Peak Holdings	
Company background	- Castle Peak Holdings Plc. has been one of Thailand's leading manufacturers and exporters of outerwear (jackets, overcoats) on an OEM basis for more than 30 years (100% export). - Its exports are mainly oriented towards the US and EU markets. Japan, Canada and some other countries are also included. - The company has to import raw materials (fabrics) from Taiwan, Korea and China which account for as much as 90%, as the required fabrics cannot be found in Thailand. Nevertheless, in spite of the higher costs of production as a result of raw material imports, customers still choose to buy from Castle Peak. This is because the company has a good reputation in delivering high quality products and has professional expertise in better understanding customers to meet their demand, e.g. specification, design, pattern. Despite high prices, its products are still acceptable to buyers.

Business model	- The company's exports are distributed through two major channels:
	
	  o 50% through foreign trading firms (no own brand), mostly based in Hong Kong, Singapore and Japan, which will sell products to department stores, retailers and shops as end buyers.
	
	  o 50% through branded importers/licensers.
	
	- Customers have got to know the company from its website and from trade fairs and have established long-term relationships and trust with the company.
	
	- The company knows the particular brands and approaches branded importers directly for business opportunities.
	
	- Castle Peak relies on foreign-based trading firms, not local Thai trading firms. This is because foreign trading firms have better logistics systems and wider client networks.
	
	- However, there are both pros and cons for distribution through trading firms, which can be summarised as follows:
	
	- Advantages of distribution through trading firms:
	
	  o Trading firms have extensive worldwide client networks.
	
	  o Distribution through trading firms helps get rid of language barriers, for instance when the company wishes to export to Japan where it does not have a language in common.
	
	  o It enables the company to save time and costs. For instance:
	
	    - Instead of taking time and effort to directly contact each customer but limit itself to a small amount of orders, distribution through trading firms will reduce the company's burden in this respect. The company can sell a larger amount of orders to trading firms, which

13. Castle Peak Holdings	
	will increase its bargaining power.
	- The company does not need to invest in opening branch offices. This would help save costs.
	o The other disadvantage of direct selling to customers is that if any conflicts occur between customers and the company, they will have direct negative impacts on the company.
	- Disadvantages of distribution through trading firms:
	o The company will lose a certain percentage of margins due to the commission charge.
	o Trading firms do not always inform the company of bad news as they try to protect their benefits first, and if they are not good enough at being middlemen, this can harm the company by losing it customers in the end. However, this is a minor problem that will indirectly affect the company. Therefore, direct selling to customers has some advantages in that the relationship is more secure with better understanding and easier decision making so as to offer products that meet the requirements and standards of customers as much as possible.
Direction of the industry	- The issue of the Thai textile and clothing industry as a sunset industry has been discussed for 15 years but the industry still survives. Mr Henry Liu, Deputy Managing Director, disagrees with the statement that the "Thai textile and clothing industry is a sunset industry".
	- In his opinion, if manufacturers know how to manage and run their business, the business is still ongoing. Although China has advantages in terms of lower labour costs, its industry is unstable since it focuses only on mass production. In contrast, Thailand's industry lives somewhere in between, not on the top or bottom, so it is more secure.
	- Mr Liu believes that whilst other countries like China, Vietnam, Indonesia, Sri Lanka and Bangladesh employ a price strategy, Thailand still has room to grow by launching its quality strategy. On average, the quality of Thai textiles and clothings is better than that of the aforementioned countries. Thus, Thailand should keep its quality at the very top and improve efficiency and productivity of labour to maintain its competitive export performance. Moreover, Thai workers are more loyal and honest. Once they know what they are doing, they are very committed to doing it. This is a unique strength of Thai people.
	- Mr Liu's opinions on brand building:
	o The need for brand building has been much debated in the Thai textile

13. Castle Peak Holdings	
	and clothing industry. Nevertheless, from Mr Liu's viewpoint, it is not necessary for all Thai manufacturers/exporters to build a brand. OEMs and OBMs can, however, live together by supporting each other. He has had experience of brand building in the past but it was an unsuccessful story. At that time the company opened a branch office in the USA and in the end the company lost a lot of money. o Some of the difficulties/constraints of brand building are: - Brand building is so costly. Castle Peak does not produce a variety of products, only outerwear (jackets and overcoats). It is thus not worthwhile for Castle Peak to build a brand just for one item; if it were to produce many different products, it lacks the skills that other industries have to do this. - To build a brand successfully, not only does the company need sufficient capital to readily prepare for any risks that might occur, for instance, marketing costs, overseas branch offices establishing but also sufficient numbers of qualified designers and a good Thai image.
Government support	- The Thai government should have a longer-term vision and policy and the patience to wait for results, unlike the Hong Kong government, which has launched an effective policy and put a lot of energy into continuously helping and supporting the industry. - The textile and clothing industry is a labour-intensive industry, so a boost from the Thai government will result in employment generation, which will contribute positively to the Thai economy in the end. - Future development plans of the company: - Keep quality at the very top by continuously developing technological know-how and machines to produce hi-tech clothings.
Other	o

14. Four Star Garment and Textile	
Company background and business model	- The Four Star Garment and Textile Co., Ltd. has been one of Thailand's leading manufacturers and exporters of children's wear on an OEM basis for more than 20 years. - Raw materials (fabrics and accessories) are bought from local suppliers and some of them are imported. - The sales volume ratio of the domestic and export markets is 5:95. The company is mostly oriented towards 100% export. Only the leftovers are sold domestically. - The export markets are the USA, UK, Canada and Japan.

Distribution channels and governance	- The company has two major distribution channels:
	  o 80% is sold directly to branch buying offices in Thailand, in other words, directly to customers. (Most buying offices are based in Hong Kong).
	  o 20% is distributed through trading firms.
	
	- Roles of trading intermediaries in Thailand's textile and clothing export:
	  o The company's distribution relies on two major channels, namely buying offices and trading firms. Each has pros and cons which can be summarised as follows:
	    - Advantages of buying office are: lower costs of marketing which leads to higher profits, able to share any useful ideas with customers, no strict factory standard and more stable relationship
	    - Advantages of trading firms are: more extensive worldwide buyer network
	    - Disadvantages of trading firms are: higher costs of marketing, no direct contact with buyers, have very strict compliance on factory standard and relatively unstable relationship

Direction of the industry	- Manufacturers are dominated by strong trading firms and buyers.
	- Price competition is the first priority regardless of quality or punctual lead time/delivery time.
	- Manufacturers are pressurised by both suppliers of raw materials (cotton is now very expensive) and trading firms. In particular, trading firms like to buy at the cheapest price possible to secure their performance.
	
	- Opinions on how to survive in the textile and clothing industry as a sunset industry:
	  o It depends on how the business is managed and run. Manufacturers should have the following qualifications to survive in this situation:
	    - Strong financial status to be well prepared for any risks that might

14. Four Star Garment and Textile	
	occur at any time
	- Good command of written and spoken English
	- Effective and efficient communication
	- High quality products
	- Unique quality and design (differentiation strategy)
	- Punctual lead time/delivery time
	- Specialisation in their own products
	- High investment in machinery and technological know-how
	- Fullest efforts and high devotion to the business
	- Lean management system and management skills to control costs
	- High ability to adjust and change to cope with unexpected situations
	- Know when and what to outsource
	- Opinions on brand building:
	o The success of brand building depends on the following factors:
	- Readiness of human resources in terms of quality and sufficiency
	- Objectives of running the business, for example, high margins or high volume
	- The brand is not easy to build or sustain
	- High investment and risks
	- Threats from counterfeit/imitation goods
Government support	- The Thai government should have a longer-term vision and policy and the patience to wait for the results, unlike the Hong Kong government, which has launched an effective policy and put a lot of energy into continuously helping and supporting the industry.
	- The textile and clothing industry is a labour-intensive industry, so a boost from the Thai government will result in employment generation, which will contribute positively to the Thai economy in the end.
	- Future development plans of the company:
	- Keep quality at the very top by continuously developing technology know-how and machines to produce hi-tech clothings.
Other	-

15. Central Trading	
Company background and business model	- Central Trading Co., Ltd. is one of the subsidiary companies of Central Marketing Group (CMG). CMG is a manufacturer, importer and distributor of various types of product, e.g. clothings/apparel, cosmetics, electrical appliances. CMG has its own retail department store, the Central Department Store, which is one of the leading department stores in Thailand and Asia. It has run the business for more than 60 years. - Central Trading is regarded as one of Thailand's leading fashion/apparel retailers with both upstream and downstream businesses, ranging from manufacturing (final assembly) and marketing to distribution. It has its own R&D and designers. Raw materials (yarns, textiles, leather, accessories) are purchased from both domestic and international suppliers. - In terms of production, Central Trading has three of its own factories with over 3,000 workers and also outsources to more than 10 factories for different brands (e.g. Wrangler, Lee Cooper, Denim). - It produces several of its own clothing/apparel brands, such as S'Fare, Casualist, Daniel Hechter, Puppet, etc. It has taken as long as 35 years to build those brands and the company still has to continuously build brands and brand loyalty. - The ratio of domestic/export market from the sales volume perspective is 90:10. Its exports are oriented towards Asian markets. The current export markets are Singapore, Malaysia, Vietnam, Laos, Cambodia, Myanmar, Indonesia, Kazakhstan, the Maldives, Dubai, Delhi, Mumbai, Guam and the Middle East.
Distribution channels and governance	- For the domestic market, Central Trading manufactures and distributes clothings/apparel through its own retail Central Department Stores throughout the country. - For the export market, it exports its own-brand apparel through foreign distributors in the aforementioned countries. The distributors then sell on products to department stores. It not only sells brands, it also coaches its distributors how to run the business efficiently (like a franchise guideline), for example, window display positions, human resource training.
Direction of the industry	- There are two categories of manufacturer in the Thai textile and clothing industry, namely OEM (Original Equipment Manufacturer) and ODM (Original Design Manufacturer). Central Trading is regarded as a best practice case study for a company that would like to develop from OEM to ODM with its own designs and brands. - Most of the cases in Thailand are OEM, which has a labour-intensive industry, so the vital variable is inevitably labour costs. Nevertheless, Thai

15. Central Trading	
	labour costs (~80-120 Baht) are higher than in China or Vietnam. In particular, Vietnam's labour costs (~30 Baht) are currently even lower than China's. Therefore, the major obstacle for the Thai textile and clothing industry is labour costs.
	- Thai OEMs are less competitive than Chinese or Vietnamese OEMs due to their lower labour costs. Moreover, OEMs have to follow the specifications of customers with 'no value-added'. They are distant from design and technology and have to bear the largest burden in the value chain so as to manage the textile stock efficiently. So, to be able to survive sustainably in this industry, Thai manufacturers have to develop and move up to ODM, focusing on value-added and brand building.
	- ODM businesses like Central Trading have increasing sales volumes, whereas OEM businesses have declining sales volumes.
	- Thailand is capable of producing better quality textiles than Japan.
	- At present, Japan is a global fashion leader – not France anymore – since Japanese people like, and dare, to dress in something new and unique. Japanese fashion is now very trendy and is copied or modified by other countries worldwide.
	- To become a successful ODM business like Central Trading depends on strategy and clear direction. Key success factors include having one's own R&D, design, brand building and management to gain brand recognition, retail management and strong distribution channels.
	- Thai textile and clothing factories are fragmented and difficult to unite but this situation is good in the way it brings about free competition, more flexibility and higher security.
Government support	- The government should promote and support brand building proactively. For instance, it should launch neutral policies to give incentives to companies that would like to make a foreign investment or penetrate the international market.
Other	-

16. S-Class	
Company background and business model	- The company opened its shop in the early 1970s. It focuses on the high-end local market. - It has its own brand with a small production base of around 40 employees. - It focuses on quality and niche products such as high-end ladies' wear.
Distribution channels and governance	- It has a single shop from which to distribute its products. - It used to have another retail shop in a large shopping complex but it was not successful. - There is no intention to export its products due to language barriers and lack of ability to scale.
Direction of the industry	- The industry is very competitive. There were only a few players in the market 20 years ago. Nowadays, there are many new local and international brands in the Thai market and they are very cheap. It will be very difficult to compete.
Government support	-
Other	-

17. KC Garment	
Company background and business model	- The company is quite young, only having been established 10 years ago. It only focuses on small OEM productions. Its customers are small shops that sell their products at small shopping malls in Bangkok. These customers normally have small orders of around 100-250 units. - The company has no design or marketing arms, just an outsourcing production base.
Distribution channels and governance	- There are three salespeople who deal directly with customers. The company does not use any local trading or trade intermediaries since it is too small and does not have its own products. - It does not intend to export its products.
Direction of the industry	- The industry has low entry barriers and many young people want to open their own shop. However, only a few survive in this competitive environment and there is a high turnover of customers who come and go. - The company is unable to compete with cheap and higher quality products from Korea. It is better to buy products from Korea and sell them in Thailand.
Government support	-
Other	-

Appendix E: Comparison of means for textile and clothing sectors

	Textile	Clothing
No. of Samples	80	88
Year of Establishment	1985.9	1989.19
Years in Operation	25.1	21.81
Capital Size		
Small	39%	68%
Medium	34%	24%
Large	28%	8%
Employee Numbers		
Small	13%	14%
Medium	44%	39%
Large	44%	48%
Type of Business		
Family business	21%	26%
Partnership	74%	70%
Public listed	5%	3%
Type of Manufacturer (1)		
No brand	45%	32%
OEM	44%	53%
ODM	14%	18%
OBM	31%	28%
Type of Manufacturer (2)		
Mixed	25%	27%
Exclusively no brand	29%	20%
Exclusively OEM	20%	27%
Exclusively ODM	5%	6%
Exclusively OBM	21%	19%
Sale Structure (1)		
Domestic	47%	15%
Export	53%	85%
Sale Structure (2)		
Export only	15%	55%
Export focus	34%	33%
Domestic focus	44%	11%
50:50	8%	1%
Export Market		
EU	24%	38%
USA	23%	29%
Japan	9%	12%
China	8%	1%
ASEAN	23%	11%
Other	13%	9%
Type of Distributor		
Retailer	34%	22%
Small agent	8%	9%
Trading agent	46%	52%
Buying office	9%	13%
Other	0%	3%
Governance		
Market	18%	20%
Turnkey	11%	27%
Relational	54%	36%
Captive	31%	23%
Subsidiary	6%	9%

	Textile	Clothing
Upgrading Process		
No change	4%	5%
Textile to clothing	0%	0%
Garment to textile	4%	2%
Product upgrading	60%	52%
Process upgrading	34%	42%
Management system	44%	38%
Own brand	19%	23%
Challenges in Upgrading		
Not interested in upgrading	0%	3%
Lack of financial support	33%	31%
Lack of market knowledge	36%	36%
Unsupportive government policy	30%	24%
Lead firms block supplier	9%	2%
International law and regulations	9%	8%
No skill set	28%	31%
Technology constraint	40%	28%
Lack of raw material	56%	33%
Poor infrastructure	23%	23%
Invest in other business	0%	3%

Appendix F: Comparison of means for value chain category

	Textile Domestic	Textile Export	Clothing Domestic	Clothing Export
No. of Samples	35	45	10	78
Year of Establishment	1990.4	1982.4	1986.6	1989.5
Years in Operation	20.6	28.6	24.4	21.5
Capital Size				
Small	43%	36%	40%	72%
Medium	34%	33%	40%	22%
Large	23%	31%	20%	6%
Employee Numbers				
Small	23%	4%	30%	12%
Medium	37%	49%	20%	41%
Large	40%	47%	50%	47%
Type of Manufacturer (1)				
No brand	63%	31%	40%	31%
OEM	31%	53%	20%	58%
ODM	14%	13%	30%	17%
OBM	20%	40%	20%	29%
Type of Manufacturer (2)				
Mixed	20%	29%	10%	29%
Exclusively no brand	46%	16%	40%	18%
Exclusively OEM	11%	27%	10%	29%
Exclusively ODM	9%	2%	20%	4%
Exclusively OBM	14%	27%	20%	19%
Sale Structure (1)				
Domestic	78%	23%	78%	7%
Export	22%	77%	22%	93%
Sale Structure (2)				
Export only	0%	27%	0%	62%
Export focus	0%	60%	0%	37%
Domestic focus	100%	0%	100%	0%
50:50	0%	13%	0%	1%
Export Market				
EU	11%	33%	17%	41%
USA	15%	30%	6%	32%
Japan	7%	11%	23%	10%
China	10%	6%	2%	1%
ASEAN	36%	14%	36%	7%
Other	22%	6%	17%	8%
Type of Distributor				
Retailer	41%	30%	14%	24%
Small agent	14%	4%	22%	8%
Trading agent	39%	51%	49%	53%
Buying office	6%	11%	10%	14%
Other	0%	0%	6%	2%
Governance				
Market	26%	11%	50%	17%
Turnkey	9%	13%	20%	28%
Relational	51%	56%	20%	38%
Captive	26%	36%	10%	24%
Subsidiary	9%	4%	20%	8%

	Textile Domestic	Textile Export	Clothing Domestic	Clothing Export
Upgrading Process				
No change	6%	2%	20%	3%
Textile to clothing	0%	0%	0%	0%
Garment to textile	3%	4%	0%	3%
Product upgrading	63%	58%	30%	55%
Process upgrading	34%	33%	50%	41%
Management system	49%	40%	20%	40%
Own brand	29%	11%	10%	24%
Challenges in Upgrading				
Not interested in upgrading	0%	0%	10%	0%
Lack of financial support	20%	42%	10%	20%
Lack of market knowledge	26%	44%	30%	26%
Unsupportive government policy	34%	27%	50%	34%
Lead firms block supplier	11%	7%	0%	11%
International law and regulations	14%	4%	0%	14%
No skill set	34%	22%	20%	34%
Technology constraint	26%	51%	10%	26%
Lack of raw material	54%	58%	30%	54%
Poor infrastructure	14%	29%	30%	14%
Invest in other business	0%	0%	20%	0%

Appendix G: Data analysis corresponding table

Topic	Type of data	Test between group	Post hoc/Comparison analysis	Test between group and total sample
Internal Consistency Test				
Upgrading				
- Product	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Process	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Functional	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
Support from Lead Firms				
- Finance	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- HRD	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- Product design	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- Manufacturing & technology	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- Market information	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- R&D	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
- Rules & regulations	Ordinal	ANOVA: Kruskal Wallis H Test	Mann-Whitney U test	Mann-Whitney U test
Challenges in upgrading				
- Not interested in upgrading	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Lack of financial support	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Lack of market knowledge	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Unsupportive government policy	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Lead firms block suppliers/trading firms	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- International law and regulations	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- No skill set	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Technology constraint	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Lack of raw material	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Poor infrastructure	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- Invest in other business with higher return	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test

Topic	Type of data	Test between group	Post hoc/Comparison analysis	Test between group and total sample
Export Performance				
- Revenue growth	Interval/Continuous	ANOVA	Planned contrast or Post-hoc: Games-Howell test	Welch's t-test
- Net profit growth	Interval/Continuous	ANOVA	Planned contrast or Post-hoc: Games-Howell test	Welch's t-test
- Net profit margin	Interval/Continuous	ANOVA	Planned contrast or Post-hoc: Games-Howell test	Welch's t-test
Differential Dynamic Test				
Structure of Sector				
- % of textile	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of clothing	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
Market Structure Test				
% of export focused firm	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
% of export only firm	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
Growth Bias Test				
- % of firms that have positive revenue growth	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of positive revenue growth for textiles	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of positive revenue growth for clothing	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of firms that have positive profit growth	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of textile firms that have positive profit growth	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of clothing firms that have positive profit growth	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of firms that have positive margin	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of textile firms that have positive margin	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test
- % of clothing firms that have positive margin	Nominal	Chi-square (Fisher)	McNemar's test	McNemar's test

Appendix H: Performance and business model test

Domestic textile performance and business model test

Domestic Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Sample Size	5	16	6	8	21	14	
Characteristic							
Year in operation							
- 0-10	0%	25%	0%	25%	19%	14%	5%
- 10-30	40%	63%	83%	75%	57%	79%	-21%
- 30-50	60%	13%	17%	0%	24%	7%	17%
- More than 50	0%	0%	0%	0%	0%	0%	0%
Revenue Size							
- Less than USD1 mil	0%	44%	0%	50%	33%	29%	5%
- 1-5 USD mil	0%	6%	50%	13%	5%	29%	-24%
- 5-10 USD mil	40%	25%	17%	0%	29%	7%	21%
- More than USD10 mil	60%	25%	33%	38%	33%	36%	-2%
Profit Size							
- Net Loss	60%	6%	50%	38%	19%	43%	-24%
- 0 - 0.25 USD mil	20%	69%	33%	50%	57%	43%	14%
- 0.25-0.5 USD mil	0%	0%	0%	0%	0%	0%	0%
- 0.5-1 USD mil	20%	0%	0%	13%	5%	7%	-2%
- More than USD1 mil	0%	0%	17%	0%	0%	7%	-7%
Net Margin							
- Less than -10%	0%	0%	0%	0%	0%	0%	0%
- -10%-0%	60%	19%	50%	38%	29%	43%	-14%
- 0-10%	40%	63%	50%	63%	57%	57%	0%
- More than 10%	0%	0%	0%	0%	0%	0%	0%
Revenue Growth Rate							
- Mean	-13%	-3%	4%	24%	-6%	15%	-21%
- Median	-13%	-4%	4%	18%	-6%	12%	-18%
- Min	-15%	-8%	1%	12%			
- Max	-11%	0%	9%	56%			

Domestic Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Average Revenue Size							
- Mean	692,569,148	203,305,067	877,407,902	207,598,991	319,796,515	494,659,953	-174,863,438
- Median	391,557,532	120,306,080	173,084,053	48,448,812			
- Min	177,405,198	0	36,966,234	5,329,951			
- Max	1,665,258,086	876,945,952	4,178,014,788	577,430,507			
Average Profit Size							
- Mean	1,354,534	1,447,095	17,565,246	1,577,797	1,425,056	8,429,561	-7,004,504
- Median	-4,179,119	523,085	582,681	81,232			
- Min	-8,977,071	-449,977	-1,676,200	-5,102,614			
- Max	24,104,792	5,724,908	101,877,299	21,564,404			
Profit Growth Rate							
- Mean	-1433%	34%	-34%	48%	-315%	13%	-328%
- Median	-156%	0%	-4%	55%	-37%	30%	-67%
- Min	-6473%	-85%	-246%	-91%			
- Max	-45%	495%	43%	180%			
Profit Margin	0%	0%	0%	0%			
- Mean	-1%	1%	0%	-1%	0%	0%	1%
- Median	-1%	0%	0%	0%	0%	0%	0%
- Min	-3%	-2%	-5%	-7%			
- Max	1%	4%	2%	7%			
Initial Investment Size							
- Less than USD 1 mil	20%	50%	50%	38%	43%	43%	0%
- USD 1 mil – USD 6 mil	40%	38%	17%	38%	38%	29%	10%
- More than USD 6 mil	40%	13%	33%	25%	19%	29%	-10%
Employment Size							
- Less than 50	0%	31%	17%	25%	24%	21%	2%
- 50 to 200	40%	38%	33%	38%	38%	36%	2%
- More than 200	60%	31%	50%	38%	38%	43%	-5%

Domestic Textile	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Sample Size	5	16	6	8		21	14	
Value proposition								
Type of manufacturers								
- Exclusive No Brand	40%	50%	17%	63%		48%	43%	5%
- Exclusive OEM	20%	19%	0%	0%		19%	0%	19%
- Exclusive ODM	0%	13%	0%	13%		10%	7%	2%
- Exclusive OBM	20%	6%	33%	13%		10%	21%	-12%
- Dual-model	0%	13%	33%	13%		10%	21%	-12%
- Mixed	20%	0%	17%	0%		5%	7%	-2%
Target Customer								
Export Only	0%	0%	0%	0%		0%	0%	0%
Export Focus	0%	0%	0%	0%		0%	0%	0%
Export Market								
- EU	13%	11%	12%	10%		11%	11%	1%
- USA	26%	11%	19%	13%		14%	15%	-1%
- Japan	12%	6%	4%	6%		8%	5%	2%
- China	5%	12%	19%	3%		10%	10%	0%
- ASEAN	30%	33%	37%	44%		32%	41%	-9%
- Other	14%	28%	9%	24%		25%	18%	7%
Distribution Channel								
Lead firms								
- Exclusive Retail	0%	31%	0%	13%		24%	7%	17%
- Exclusive Agent	0%	0%	0%	13%		0%	7%	-7%
- Exclusive Trader	40%	13%	17%	25%		19%	21%	-2%
- Exclusive Buying Office	0%	0%	0%	0%		0%	0%	0%
- Mixed	60%	56%	83%	50%		57%	64%	-7%
Customer relationship								
Governance								
- Exclusive Hierarchy	0%	6%	0%	0%		5%	0%	5%
- Exclusive Captive	0%	19%	17%	13%		14%	14%	0%
- Exclusive Relational	40%	50%	50%	38%		48%	43%	5%
- Exclusive Modular	0%	0%	17%	13%		0%	14%	-14%
- Exclusive Market	0%	13%	0%	38%		10%	21%	-12%
- Mixed	60%	13%	17%	0%		24%	7%	17%

Domestic Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Core Competency							
Upgrading							
- Product Upgrading	60%	63%	67%	63%	62%	64%	-2%
- Process Upgrading	40%	19%	83%	25%	24%	50%	-26%
- Functional Upgrading	40%	25%	0%	50%	29%	29%	0%
Support from Lead Firms							
- Finance	0.20	0.13	-0.33	0.25	0.14	0.00	0.14
- HRD	-0.20	0.19	-0.50	0.25	0.10	-0.07	0.17
- Design	0.20	0.13	-0.50	0.13	0.14	-0.14	0.29
- Production	-0.20	0.13	-0.50	0.25	0.05	-0.07	0.12
- Marketing	0.00	0.44	-0.17	0.63	0.33	0.29	0.05
- R&D	-0.20	0.25	-0.50	0.25	0.14	-0.07	0.21
- Regulation	0.20	0.00	-0.50	0.00	0.05	-0.21	0.26
Challenges from upgrading							
- Not interested in upgrading	0%	0%	0%	0%	0%	0%	0%
- Lack of Financial support	40%	13%	17%	25%	19%	21%	-2%
- Lack of market knowledge	20%	38%	17%	13%	33%	14%	19%
- Unsupportive government policy	60%	25%	33%	38%	33%	36%	-2%
- Lead firms block suppliers/trading firms	0%	13%	0%	25%	10%	14%	-5%
- International law and regulations (FTA, Quota)	0%	25%	0%	13%	19%	7%	12%
- No skill set	20%	38%	50%	25%	33%	36%	-2%
- Technology Constraint	40%	25%	50%	0%	29%	21%	7%
- Lack of raw material	60%	63%	50%	38%	62%	43%	19%
- Poor Infrastructure	40%	0%	33%	13%	10%	21%	-12%
- Invest in other business with higher return	0%	0%	0%	0%	0%	0%	0%
Other							
Strategy							
- OEM Niche	40%	31%	0%	25%	33%	14%	19%
- OBM building brand	40%	38%	50%	25%	38%	36%	2%
- OBM by acquire	0%	0%	0%	0%	0%	0%	0%
- No change	20%	6%	0%	25%	10%	14%	-5%
- Govt Policy	0%	0%	0%	0%	0%	0%	0%

Domestic Textile	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Government Policy								
- FOREX	80%	81%	83%	75%		81%	79%	2%
- Reduce import tax	40%	88%	67%	63%		76%	64%	12%
- reduce VAT	40%	50%	17%	38%		48%	29%	19%
- Custorm	0%	19%	0%	13%		14%	7%	7%
- Lbaour Cost	60%	25%	67%	38%		33%	50%	-17%
- Laobur productivity	20%	13%	17%	38%		14%	29%	-14%
- Tech Knowledge	0%	6%	50%	25%		5%	36%	-31%
- Marketing	0%	25%	0%	13%		19%	7%	12%
- Infrastructure	40%	13%	50%	38%		19%	43%	-24%
- Bus Match	0%	19%	0%	25%		14%	14%	0%
- Cluster	20%	38%	17%	25%		33%	21%	12%
- SC Linkage	0%	25%	17%	13%		19%	14%	5%
Competitiveness								
- Quality of product	3.57	3.30	3.37	3.75		3.36	3.59	-22%
- Variety of product	4.22	3.80	4.16	3.94		3.90	4.03	-13%
- Lead time & Delivery time	4.00	3.55	3.68	3.75		3.66	3.72	-6%
- Labor productivity	3.74	3.30	3.58	3.38		3.40	3.46	-6%
- Manufacturing productivity	3.48	3.10	3.26	3.63		3.19	3.47	-28%
- Abilities of skilled labor	3.09	3.05	3.11	3.38		3.06	3.26	-20%
- Abilities of non-skilled labor	4.00	3.75	4.05	4.06		3.81	4.06	-25%
- Production capacity	3.48	3.35	3.53	3.69		3.38	3.62	-24%
- Marketing abilities	3.13	3.05	3.05	3.25		3.07	3.17	-10%
- Marketing channel	3.26	2.95	3.00	3.31		3.02	3.18	-15%
- Abilities of Trading firms	3.35	3.00	3.26	3.50		3.08	3.40	-32%
- Custom procedure	3.26	3.15	3.26	3.44		3.18	3.36	-19%
- Raw material cost	3.26	3.20	3.32	3.56		3.21	3.46	-24%
- Import Tax	2.57	2.25	2.42	2.63		2.33	2.54	-21%
- Labor cost	3.13	2.80	3.05	3.06		2.88	3.06	-18%
- Manufacturing cost	2.35	2.20	2.05	2.50		2.24	2.31	-7%
- Electricity & utilities cost	2.57	2.40	2.32	2.69		2.44	2.53	-9%
- Insurance cost	3.00	2.80	2.74	3.00		2.85	2.89	-4%
- FOREX	3.09	2.95	3.11	3.00		2.98	3.05	-6%
- Export Tax	2.65	2.60	2.58	2.69		2.61	2.64	-3%
- Agent or Commission Fee	3.39	2.85	3.00	3.50		2.98	3.29	-31%
- Land Logistics	3.04	2.90	3.11	3.00		2.93	3.05	-11%
- Shipping cost	2.87	2.95	3.16	2.94		2.93	3.03	-10%
- Upgrade process	2.78	2.90	2.68	3.00		2.87	2.86	1%

Domestic Textile	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Reason for upgrading								
- Competition	22%	20%	21%	19%		20%	20%	1%
- Lead firm	74%	70%	74%	81%		71%	78%	-7%
- Regulation	22%	10%	16%	25%		13%	21%	-8%
- Government	4%	15%	37%	31%		12%	34%	-21%
- Lower cost	0%	5%	11%	0%		4%	5%	-1%
- Inc Sales	57%	75%	63%	75%		71%	70%	1%
- Inc Profit	61%	70%	79%	69%		68%	73%	-5%
- New Opp	52%	25%	21%	44%		31%	34%	-3%
- Challenge for upgrade	4%	20%	16%	19%		16%	17%	-1%

Export textile performance and business model test

Export Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Sample Size	14	21	8	2	35	10	
Characteristic							
Year in operation							
- 0-10	7%	14%	0%	50%	11%	10%	1%
- 10-30	36%	48%	50%	50%	43%	50%	-7%
- 30-50	43%	29%	38%	0%	34%	30%	4%
- More than 50	14%	10%	13%	0%	11%	10%	1%
Revenue Size							
- Less than USD1 mil	14%	24%	25%	0%	20%	20%	0%
- 1-5 USD mil	21%	19%	25%	50%	20%	30%	-10%
- 5-10 USD mil	21%	10%	0%	0%	14%	0%	14%
- More than USD10 mil	43%	48%	50%	50%	46%	50%	-4%
Profit Size							
- Net Loss	50%	24%	13%	0%	34%	10%	24%
- 0 - 0.25 USD mil	29%	48%	63%	50%	40%	60%	-20%
- 0.25-0.5 USD mil	0%	0%	13%	0%	0%	10%	-10%
- 0.5-1 USD mil	7%	10%	0%	0%	9%	0%	9%
- More than USD1 mil	14%	0%	13%	50%	6%	20%	-14%
Net Margin							
- Less than -10%	14%	5%	0%	0%	9%	0%	9%
- -10%-0%	43%	33%	38%	0%	37%	30%	7%
- 0-10%	43%	43%	63%	50%	43%	60%	-17%
- More than 10%	0%	0%	0%	50%	0%	10%	-10%
Revenue Growth Rate							
- Mean	-21%	-3%	5%	47%	-11%	13%	-24%
- Median	-18%	-3%	5%	47%	-9%	14%	-22%
- Min	-41%	-10%	1%	14%			
- Max	-11%	0%	8%	79%			

Export Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Average Revenue Size							
- Mean	962,219,620	477,833,835	688,966,522	930,626,175	671,588,149	737,298,452	-65,710,303
- Median	239,411,776	331,753,818	317,926,945	930,626,175			
- Min	16,218,093	0	17,761,919	60,433,685			
- Max	7,522,995,856	2,754,116,417	2,841,302,656	1,800,818,664			
Average Profit Size							
- Mean	-5,227,705	-3,830,808	7,561,965	218,515,990	-4,389,567	49,752,770	-54,142,337
- Median	-193,292	815,954	821,954	218,515,990			
- Min	-135,079,674	-52,281,579	-1,878,406	746,511			
- Max	106,548,918	28,824,518	43,408,517	436,285,469			
Profit Growth Rate							
- Mean	-826%	-21491%	164%	216%	-13225%	174%	-13399%
- Median	-30%	-3%	32%	216%	-14%	68%	-82%
- Min	-5362%	-448647%	-14%	40%			
- Max	41%	79%	1098%	392%			
Profit Margin	0%	0%	0%	0%			
- Mean	-6%	0%	1%	10%	-3%	3%	-6%
- Median	0%	0%	1%	10%	0%	3%	-3%
- Min	-43%	-12%	0%	1%			
- Max	9%	6%	4%	19%			
Initial Investment Size							
- Less than USD 1 mil	50%	24%	38%	50%	34%	40%	-6%
- USD 1 mil – USD 6 mil	14%	48%	38%	0%	34%	30%	4%
- More than USD 6 mil	36%	29%	25%	50%	31%	30%	1%
Employment Size							
- Less than 50	14%	0%	0%	0%	6%	0%	6%
- 50 to 200	43%	48%	63%	50%	46%	60%	-14%
- More than 200	43%	52%	38%	50%	49%	40%	9%

Export Textile	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Sample Size	14	21	8	2		35	10	
Value proposition								
Type of manufacturers								
- Exclusive No Brand	21%	19%	0%	0%		20%	0%	20%
- Exclusive OEM	7%	33%	50%	0%		23%	40%	-17%
- Exclusive ODM	0%	5%	0%	0%		3%	0%	3%
- Exclusive OBM	21%	29%	38%	0%		26%	30%	-4%
- Dual-model	36%	5%	13%	100%		17%	30%	-13%
- Mixed	14%	10%	0%	0%		11%	0%	11%
Target Customer								
Export Only	21%	24%	50%	0%		23%	40%	-17%
Export Focus	64%	57%	50%	100%		60%	60%	0%
Export Market								
- EU	41%	30%	28%	38%		34%	30%	4%
- USA	23%	24%	57%	30%		23%	52%	-28%
- Japan	10%	14%	1%	18%		12%	5%	8%
- China	7%	8%	0%	0%		8%	0%	8%
- ASEAN	13%	16%	14%	0%		15%	11%	4%
- Other	7%	6%	0%	15%		7%	3%	4%
Distribution Channel								
Lead firms								
- Exclusive Retail	7%	5%	13%	100%		6%	30%	-24%
- Exclusive Agent	0%	0%	0%	0%		0%	0%	0%
- Exclusive Trader	21%	43%	25%	0%		34%	20%	14%
- Exclusive Buying Office	7%	5%	0%	0%		6%	0%	6%
- Mixed	64%	48%	63%	0%		54%	50%	4%
Customer relationship								
Governance								
- Exclusive Hirarchy	7%	5%	0%	0%		6%	0%	6%
- Exclusive Captive	29%	33%	38%	0%		31%	30%	1%
- Exclusive Relational	43%	38%	38%	100%		40%	50%	-10%
- Exclusive Modular	0%	5%	0%	0%		3%	0%	3%
- Exclusive Market	7%	0%	0%	0%		3%	0%	3%
- Mixed	14%	19%	25%	0%		17%	20%	-3%
Sample Size	14	21	8	2		35	10	

Export Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Core Competency							
Upgrading							
- Product Upgrading	43%	71%	50%	50%	60%	50%	10%
- Process Upgrading	36%	38%	25%	0%	37%	20%	17%
- Functional Upgrading	14%	10%	13%	0%	11%	10%	1%
Support from Lead Firms							
- Finance	-0.07	0.29	0.00	-0.50	0.14	-0.10	0.24
- HRD	-0.21	0.05	0.00	-0.50	-0.06	-0.10	0.04
- Design	0.36	0.48	0.38	0.50	0.43	0.40	0.03
- Production	-0.07	0.14	0.25	-0.50	0.06	0.10	-0.04
- Marketing	0.29	0.43	0.13	-0.50	0.37	0.00	0.37
- R&D	-0.14	0.29	-0.25	0.50	0.11	-0.10	0.21
- Regulation	-0.14	0.05	-0.25	-0.50	-0.03	-0.30	0.27
Challenges from upgrading							
- Not interested in upgrading	0%	0%	0%	0%	0%	0%	0%
- Lack of Financial support	50%	38%	38%	50%	43%	40%	3%
- Lack of market knowledge	36%	48%	50%	50%	43%	50%	-7%
- Unsupportive government policy	29%	29%	13%	50%	29%	20%	9%
- Lead firms block suppliers/trading firms	14%	5%	0%	0%	9%	0%	9%
- International law and regulations (FTA, Quota)	0%	5%	13%	0%	3%	10%	-7%
- No skill set	14%	24%	38%	0%	20%	30%	-10%
- Technology Constraint	43%	52%	63%	50%	49%	60%	-11%
- Lack of raw material	64%	52%	50%	100%	57%	60%	-3%
- Poor Infrastructure	36%	19%	25%	100%	26%	40%	-14%
- Invest in other business with higher return	0%	0%	0%	0%	0%	0%	0%
Other							
Strategy							
- OEM Niche	14%	14%	25%	0%	14%	20%	-6%
- OBM building brand	57%	57%	50%	0%	57%	40%	17%
- OBM by acquire	7%	0%	0%	0%	3%	0%	3%
- No change	7%	5%	0%	0%	6%	0%	6%
- Govt Policy	0%	0%	0%	0%	0%	0%	0%

Export Textile	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Government Policy							
- FOREX	86%	76%	100%	50%	80%	90%	-10%
- Reduce import tax	50%	48%	63%	50%	49%	60%	-11%
- reduce VAT	57%	29%	38%	0%	40%	30%	10%
- Custorm	0%	0%	0%	0%	0%	0%	0%
- Lbaour Cost	43%	24%	13%	50%	31%	20%	11%
- Laobur productivity	14%	10%	0%	0%	11%	0%	11%
- Tech Knowledge	21%	14%	13%	100%	17%	30%	-13%
- Marketing	36%	29%	25%	50%	31%	30%	1%
- Infrastructure	36%	14%	25%	100%	23%	40%	-17%
- Bus Match	50%	19%	38%	0%	31%	30%	1%
- Cluster	14%	14%	0%	0%	14%	0%	14%
- SC Linkage	7%	19%	0%	0%	14%	0%	14%
Competitiveness							
- Quality of product	3.57	3.30	3.37	3.75	3.41	3.44	-4%
- Variety of product	4.22	3.80	4.16	3.94	3.97	4.11	-15%
- Lead time & Delivery time	4.00	3.55	3.68	3.75	3.73	3.70	3%
- Labor productivity	3.74	3.30	3.58	3.38	3.48	3.54	-6%
- Manufacturing productivity	3.48	3.10	3.26	3.63	3.25	3.34	-8%
- Abilities of skilled labor	3.09	3.05	3.11	3.38	3.06	3.16	-9%
- Abilities of non-skilled labor	4.00	3.75	4.05	4.06	3.85	4.05	-20%
- Production capacity	3.48	3.35	3.53	3.69	3.40	3.56	-16%
- Marketing abilities	3.13	3.05	3.05	3.25	3.08	3.09	-1%
- Marketing channel	3.26	2.95	3.00	3.31	3.07	3.06	1%
- Abilities of Trading firms	3.35	3.00	3.26	3.50	3.14	3.31	-17%
- Custom procedure	3.26	3.15	3.26	3.44	3.19	3.30	-10%
- Raw material cost	3.26	3.20	3.32	3.56	3.22	3.37	-14%
- Import Tax	2.57	2.25	2.42	2.63	2.38	2.46	-9%
- Labor cost	3.13	2.80	3.05	3.06	2.93	3.05	-12%
- Manufacturing cost	2.35	2.20	2.05	2.50	2.26	2.14	12%
- Electricity & utilities cost	2.57	2.40	2.32	2.69	2.47	2.39	8%
- Insurance cost	3.00	2.80	2.74	3.00	2.88	2.79	9%
- FOREX	3.09	2.95	3.11	3.00	3.00	3.08	-8%
- Export Tax	2.65	2.60	2.58	2.69	2.62	2.60	2%
- Agent or Commission Fee	3.39	2.85	3.00	3.50	3.07	3.10	-3%
- Land Logistics	3.04	2.90	3.11	3.00	2.96	3.08	-13%
- Shipping cost	2.87	2.95	3.16	2.94	2.92	3.11	-20%
- Upgrade process	2.78	2.90	2.68	3.00	2.85	2.75	11%

Export Textile	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Reason for upgrading								
- Competition	22%	20%	21%	19%		21%	21%	0%
- Lead firm	74%	70%	74%	81%		72%	75%	-4%
- Regulation	22%	10%	16%	25%		15%	18%	-3%
- Government	4%	15%	37%	31%		11%	36%	-25%
- Lower cost	0%	5%	11%	0%		3%	8%	-5%
- Inc Sales	57%	75%	63%	75%		68%	66%	2%
- Inc Profit	61%	70%	79%	69%		66%	77%	-11%
- New Opp	52%	25%	21%	44%		36%	26%	10%
- Challenge for upgrade	4%	20%	16%	19%		14%	16%	-3%

Domestic Clothing performance and business model test

Domestic Clothing	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Sample Size	1	6	3	0	7	3	
Characteristic							
Year in operation							
- 0-10	0%	33%	0%	0%	29%	0%	29%
- 10-30	100%	17%	33%	0%	29%	33%	-5%
- 30-50	0%	50%	67%	0%	43%	67%	-24%
- More than 50	0%	0%	0%	0%	0%	0%	0%
Revenue Size							
- Less than USD1 mil	100%	83%	33%	0%	86%	33%	52%
- 1-5 USD mil	0%	0%	0%	0%	0%	0%	0%
- 5-10 USD mil	0%	0%	0%	0%	0%	0%	0%
- More than USD10 mil	0%	17%	67%	0%	14%	67%	-52%
Profit Size							
- Net Loss	100%	0%	0%	0%	14%	0%	14%
- 0 - 0.25 USD mil	0%	0%	67%	0%	0%	67%	-67%
- 0.25-0.5 USD mil	0%	0%	33%	0%	0%	33%	-33%
- 0.5-1 USD mil	0%	0%	0%	0%	0%	0%	0%
- More than USD1 mil	0%	17%	0%	0%	14%	0%	14%
Net Margin							
- Less than -10%	0%	0%	0%	0%	0%	0%	0%
- -10%-0%	100%	17%	0%	0%	29%	0%	29%
- 0-10%	0%	0%	100%	0%	0%	100%	-100%
- More than 10%	0%	0%	0%	0%	0%	0%	0%
Revenue Growth Rate							
- Mean	-27%	0%	4%	0%	-4%	4%	-8%
- Median	-27%	0%	3%	0%	-4%	3%	-7%
- Min	-27%	-1%	2%	0%			
- Max	-27%	0%	7%	0%			

Domestic Clothing	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Average Revenue Size								
- Mean	30,171,794	660,938,720	794,318,457	0		570,829,159	794,318,457	-223,489,298
- Median	30,171,794	0	751,857,319	0				
- Min	30,171,794	0	9,432,029	0				
- Max	30,171,794	3,965,632,318	1,621,666,022	0				
Average Profit Size								
- Mean	-581,125	68,487,797	6,133,447	0		58,620,808	6,133,447	52,487,362
- Median	-581,125	0	7,670,304	0				
- Min	-581,125	0	456,485	0				
- Max	-581,125	410,926,784	10,273,551	0				
Profit Growth Rate								
- Mean	-6%	0%	-307%	0%		0%	-307%	306%
- Median	-6%	0%	-4%	0%		-1%	-4%	3%
- Min	-6%	0%	-923%	0%				
- Max	-6%	3%	7%	0%				
Profit Margin	0%	0%	0%	0%				
- Mean	-2%	0%	2%	0%		0%	2%	-2%
- Median	-2%	0%	1%	0%		0%	1%	-2%
- Min	-2%	0%	0%	0%				
- Max	-2%	1%	5%	0%				
Initial Investment Size								
- Less than USD 1 mil	0%	50%	33%	0%		43%	33%	10%
- USD 1 mil – USD 6 mil	100%	50%	0%	0%		57%	0%	57%
- More than USD 6 mil	0%	0%	67%	0%		0%	67%	-67%
Employment Size								
- Less than 50	0%	50%	0%	0%		43%	0%	43%
- 50 to 200	100%	0%	33%	0%		14%	33%	-19%
- More than 200	0%	50%	67%	0%		43%	67%	-24%

Domestic Clothing	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Sample Size	1	6	3	0		7	3	
Value proposition								
Type of manufacturers								
- Exclusive No Brand	0%	67%	0%	0%		57%	0%	57%
- Exclusive OEM	0%	0%	33%	0%		0%	33%	-33%
- Exclusive ODM	100%	17%	0%	0%		29%	0%	29%
- Exclusive OBM	0%	17%	33%	0%		14%	33%	-19%
- Dual-model	0%	0%	33%	0%		0%	33%	-33%
- Mixed	0%	0%	0%	0%		0%	0%	0%
Target Customer								
Export Only	0%	0%	0%	0%		0%	0%	0%
Export Focus	0%	0%	0%	0%		0%	0%	0%
Export Market								
- EU	5%	7%	40%	0%		6%	40%	-34%
- USA	15%	3%	8%	0%		5%	8%	-3%
- Japan	0%	28%	22%	0%		24%	22%	2%
- China	0%	2%	3%	0%		1%	3%	-2%
- ASEAN	80%	33%	27%	0%		40%	27%	13%
- Other	0%	28%	0%	0%		24%	0%	24%
Distribution Channel								
Lead firms								
- Exclusive Retail	0%	0%	33%	0%		0%	33%	-33%
- Exclusive Agent	0%	17%	0%	0%		14%	0%	14%
- Exclusive Trader	100%	33%	33%	0%		43%	33%	10%
- Exclusive Buying Office	0%	0%	0%	0%		0%	0%	0%
- Mixed	0%	50%	33%	100%		43%	33%	10%
Customer relationship								
Governance								
- Exclusive Hirarchy	0%	0%	0%	0%		0%	0%	0%
- Exclusive Captive	100%	0%	0%	0%		14%	0%	14%
- Exclusive Relational	0%	17%	0%	0%		14%	0%	14%
- Exclusive Modular	0%	17%	33%	0%		14%	33%	-19%
- Exclusive Market	0%	50%	33%	0%		43%	33%	10%
- Mixed	0%	17%	33%	0%		14%	33%	-19%

Domestic Clothing	High decline	Normal decline	Normal growth	High growth	Poor Performance	Good Performance	Difference Test
Core Competency							
Upgrading							
- Product Upgrading	0%	50%	0%	0%	43%	0%	43%
- Process Upgrading	100%	33%	67%	0%	43%	67%	-24%
- Functional Upgrading	0%	17%	0%	0%	14%	0%	14%
Support from Lead Firms							
- Finance	0.00	0.17	0.00	0.00	0.14	0.00	0.14
- HRD	0.00	0.17	0.00	0.00	0.14	0.00	0.14
- Design	0.00	0.00	-0.67	0.00	0.00	-0.67	0.67
- Production	0.00	0.17	0.33	0.00	0.14	0.33	-0.19
- Marketing	-1.00	0.17	0.33	0.00	0.00	0.33	-0.33
- R&D	0.00	0.17	-0.33	0.00	0.14	-0.33	0.48
- Regulation	0.00	0.17	-0.33	0.00	0.14	-0.33	0.48
Challenges from upgrading							
- Not interested in upgrading	0%	0%	33%	0%	0%	33%	-33%
- Lack of Financial support	0%	17%	0%	0%	14%	0%	14%
- Lack of market knowledge	0%	50%	0%	0%	43%	0%	43%
- Unsupportive government policy	100%	50%	33%	0%	57%	33%	24%
- Lead firms block suppliers/trading firms	0%	0%	0%	0%	0%	0%	0%
- International law and regulations (FTA, Quota)	0%	0%	0%	0%	0%	0%	0%
- No skill set	0%	33%	0%	0%	29%	0%	29%
- Technology Constraint	0%	17%	0%	0%	14%	0%	14%
- Lack of raw material	100%	33%	0%	0%	43%	0%	43%
- Poor Infrastructure	0%	50%	0%	0%	43%	0%	43%
- Invest in other business with higher return	0%	33%	0%	0%	29%	0%	29%
Other							
Strategy							
- OEM Niche	0%	0%	67%	0%	0%	67%	-67%
- OBM building brand	100%	50%	0%	0%	57%	0%	57%
- OBM by acquire	0%	0%	0%	0%	0%	0%	0%
- No change	0%	33%	33%	0%	29%	33%	-5%
- Govt Policy	0%	0%	0%	0%	0%	0%	0%

Domestic Clothing	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Government Policy								
- FOREX	0%	67%	67%	0%		57%	67%	-10%
- Reduce import tax	100%	67%	0%	0%		71%	0%	71%
- reduce VAT	0%	50%	0%	0%		43%	0%	43%
- Custorm	0%	0%	0%	0%		0%	0%	0%
- Lbaour Cost	0%	50%	33%	0%		43%	33%	10%
- Laobur productivity	0%	0%	33%	0%		0%	33%	-33%
- Tech Knowledge	0%	17%	0%	0%		14%	0%	14%
- Marketing	100%	50%	0%	0%		57%	0%	57%
- Infrastructure	0%	33%	0%	0%		29%	0%	29%
- Bus Match	0%	33%	67%	0%		29%	67%	-38%
- Cluster	0%	17%	33%	0%		14%	33%	-19%
- SC Linkage	0%	17%	0%	0%		14%	0%	14%
Competitiveness								
- Quality of product	3.57	3.30	3.37	3.75		3.34	3.37	-3%
- Variety of product	4.22	3.80	4.16	3.94		3.86	4.16	-30%
- Lead time & Delivery time	4.00	3.55	3.68	3.75		3.61	3.68	-7%
- Labor productivity	3.74	3.30	3.58	3.38		3.36	3.58	-22%
- Manufacturing productivity	3.48	3.10	3.26	3.63		3.15	3.26	-11%
- Abilities of skilled labor	3.09	3.05	3.11	3.38		3.06	3.11	-5%
- Abilities of non-skilled labor	4.00	3.75	4.05	4.06		3.79	4.05	-27%
- Production capacity	3.48	3.35	3.53	3.69		3.37	3.53	-16%
- Marketing abilities	3.13	3.05	3.05	3.25		3.06	3.05	1%
- Marketing channel	3.26	2.95	3.00	3.31		2.99	3.00	-1%
- Abilities of Trading firms	3.35	3.00	3.26	3.50		3.05	3.26	-21%
- Custom procedure	3.26	3.15	3.26	3.44		3.17	3.26	-10%
- Raw material cost	3.26	3.20	3.32	3.56		3.21	3.32	-11%
- Import Tax	2.57	2.25	2.42	2.63		2.30	2.42	-13%
- Labor cost	3.13	2.80	3.05	3.06		2.85	3.05	-21%
- Manufacturing cost	2.35	2.20	2.05	2.50		2.22	2.05	17%
- Electricity & utilities cost	2.57	2.40	2.32	2.69		2.42	2.32	11%
- Insurance cost	3.00	2.80	2.74	3.00		2.83	2.74	9%
- FOREX	3.09	2.95	3.11	3.00		2.97	3.11	-14%
- Export Tax	2.65	2.60	2.58	2.69		2.61	2.58	3%
- Agent or Commission Fee	3.39	2.85	3.00	3.50		2.93	3.00	-7%
- Land Logistics	3.04	2.90	3.11	3.00		2.92	3.11	-18%
- Shipping cost	2.87	2.95	3.16	2.94		2.94	3.16	-22%
- Upgrade process	2.78	2.90	2.68	3.00		2.88	2.68	20%

Domestic Clothing	High decline	Normal decline	Normal growth	High growth		Poor Performance	Good Performance	Difference Test
Reason for upgrading								
- Competition	22%	20%	21%	19%		20%	21%	-1%
- Lead firm	74%	70%	74%	81%		71%	74%	-3%
- Regulation	22%	10%	16%	25%		12%	16%	-4%
- Government	4%	15%	37%	31%		13%	37%	-23%
- Lower cost	0%	5%	11%	0%		4%	11%	-6%
- Inc Sales	57%	75%	63%	75%		72%	63%	9%
- Inc Profit	61%	70%	79%	69%		69%	79%	-10%
- New Opp	52%	25%	21%	44%		29%	21%	8%
- Challenge for upgrade	4%	20%	16%	19%		18%	16%	2%

Export clothing performance and business model test

Export Clothing	High decline	Normal decline	Normal growth	High growth	Bad Performance	Good Performance	Difference Test
Sample Size	23	20	19	16	43	35	
Characteristic							
Year in operation							
- 0-10	9%	25%	5%	31%	16%	17%	-1%
- 10-30	78%	65%	74%	63%	72%	69%	4%
- 30-50	13%	10%	16%	6%	12%	11%	0%
- More than 50	0%	0%	5%	0%	0%	3%	-3%
Revenue Size							
- Less than USD1 mil	4%	35%	11%	13%	19%	11%	7%
- 1-5 USD mil	48%	30%	37%	31%	40%	34%	5%
- 5-10 USD mil	13%	15%	16%	13%	14%	14%	0%
- More than USD10 mil	35%	20%	37%	44%	28%	40%	-12%
Profit Size							
- Net Loss	52%	45%	16%	31%	49%	23%	26%
- 0 - 0.25 USD mil	35%	25%	63%	44%	30%	54%	-24%
- 0.25-0.5 USD mil	0%	0%	11%	6%	0%	9%	-9%
- 0.5-1 USD mil	4%	0%	11%	6%	2%	9%	-6%
- More than USD1 mil	9%	0%	0%	13%	5%	6%	-1%
Net Margin							
- Less than -10%	13%	10%	0%	13%	12%	6%	6%
- -10%-0%	48%	35%	16%	19%	42%	17%	25%
- 0-10%	39%	25%	84%	63%	33%	74%	-42%
- More than 10%	0%	0%	0%	6%	0%	3%	-3%
Revenue Growth Rate							
- Mean	-23%	-3%	6%	62%	-14%	32%	-45%
- Median	-19%	-3%	6%	24%	-12%	14%	-26%
- Min	-50%	-9%	1%	10%			
- Max	-10%	0%	10%	300%			

Export Clothing	High decline	Normal decline	Normal growth	High growth	Bad Performance	Good Performance	Difference Test
Average Revenue Size							
- Mean	731,234,557	180,239,544	491,257,212	633,725,763	474,957,807	556,385,693	-81,427,886
- Median	159,678,518	117,072,716	277,814,625	220,022,048			
- Min	28,485,312	0	3,546,571	14,024,729			
- Max	4,673,430,500	742,761,036	1,639,059,330	3,328,740,100			
Average Profit Size							
- Mean	-6,427,992	-4,105,248	3,925,116	11,780,836	-5,347,646	7,516,302	-12,863,948
- Median	-909,828	0	2,615,818	774,550			
- Min	-89,448,594	-48,401,204	-30,060,868	-37,213,621			
- Max	51,230,668	3,382,246	26,510,406	135,727,415			
Profit Growth Rate							
- Mean	-438%	-1269%	304%	-680%	-824%	-146%	-678%
- Median	-58%	0%	37%	13%	-31%	26%	-57%
- Min	-6274%	-25860%	-24%	-11072%			
- Max	1203%	462%	3526%	464%			
Profit Margin	0%	0%	0%	0%			
- Mean	-3%	-18%	2%	-12%	-10%	-5%	-5%
- Median	0%	0%	1%	0%	0%	1%	-1%
- Min	-22%	-335%	-2%	-120%			
- Max	4%	2%	6%	14%			
Initial Investment Size							
- Less than USD 1 mil	91%	65%	68%	56%	79%	63%	16%
- USD 1 mil – USD 6 mil	4%	25%	26%	38%	14%	31%	-17%
- More than USD 6 mil	4%	10%	5%	6%	7%	6%	1%
Employment Size							
- Less than 50	13%	10%	11%	13%	12%	11%	0%
- 50 to 200	26%	55%	53%	31%	40%	43%	-3%
- More than 200	61%	35%	37%	56%	49%	46%	3%

Export Clothing	High decline	Normal decline	Normal growth	High growth	Bad Performance	Good Performance	Difference Test
Sample Size	23	20	19	16	43	35	
Value proposition							
Type of manufacturers							
- Exclusive No Brand	17%	10%	21%	25%	14%	23%	-9%
- Exclusive OEM	35%	20%	26%	38%	28%	31%	-4%
- Exclusive ODM	0%	0%	11%	6%	0%	9%	-9%
- Exclusive OBM	9%	35%	26%	6%	21%	17%	4%
- Dual-model	39%	30%	16%	19%	35%	17%	18%
- Mixed	0%	5%	0%	6%	2%	3%	-1%
Target Customer							
Export Only	43%	70%	53%	88%	56%	69%	-13%
Export Focus	52%	30%	47%	13%	42%	31%	10%
Export Market							
- EU	37%	39%	46%	44%	38%	45%	-7%
- USA	37%	24%	40%	24%	31%	33%	-2%
- Japan	14%	6%	4%	17%	10%	10%	0%
- China	2%	2%	0%	0%	2%	0%	2%
- ASEAN	5%	15%	2%	9%	9%	5%	4%
- Other	5%	14%	7%	6%	9%	7%	2%
Distribution Channel							
Lead firms							
- Exclusive Retail	9%	5%	11%	0%	7%	6%	1%
- Exclusive Agent	0%	0%	0%	0%	0%	0%	0%
- Exclusive Trader	17%	25%	21%	19%	21%	20%	1%
- Exclusive Buying Office	4%	0%	5%	13%	2%	9%	-6%
- Mixed	70%	70%	63%	69%	70%	66%	4%
Customer relationship							
Governance							
- Exclusive Hirarchy	4%	0%	0%	19%	2%	9%	-6%
- Exclusive Captive	13%	25%	32%	19%	19%	26%	-7%
- Exclusive Relational	26%	45%	37%	19%	35%	29%	6%
- Exclusive Modular	17%	10%	21%	31%	14%	26%	-12%
- Exclusive Market	13%	10%	0%	6%	12%	3%	9%
- Mixed	26%	10%	11%	6%	19%	9%	10%
Sample Size	23	20	19	16	43	35	

Export Clothing	High decline	Normal decline	Normal growth	High growth	Bad Performance	Good Performance	Difference Test
Core Competency							
Upgrading							
- Product Upgrading	48%	45%	68%	63%	47%	66%	-19%
- Process Upgrading	48%	30%	53%	31%	40%	43%	-3%
- Functional Upgrading	9%	45%	32%	13%	26%	23%	3%
Support from Lead Firms							
- Finance	-0.13	0.20	0.05	-0.25	0.02	-0.09	0.11
- HRD	-0.04	0.20	0.05	0.00	0.07	0.03	0.04
- Design	0.57	0.50	0.63	0.31	0.53	0.49	0.05
- Production	0.26	0.30	0.21	0.06	0.28	0.14	0.14
- Marketing	0.22	0.40	0.16	0.00	0.30	0.09	0.22
- R&D	0.30	0.25	0.00	-0.13	0.28	-0.06	0.34
- Regulation	-0.17	0.25	-0.16	-0.19	0.02	-0.17	0.19
	0.14	0.30	0.14	-0.03			
Challenges from upgrading							
- Not interested in upgrading	0%	5%	0%	6%	2%	3%	-1%
- Lack of Financial support	22%	45%	26%	44%	33%	34%	-2%
- Lack of market knowledge	26%	45%	47%	31%	35%	40%	-5%
- Unsupportive government policy	22%	30%	21%	6%	26%	14%	11%
- Lead firms block suppliers/trading firms	4%	0%	5%	0%	2%	3%	-1%
- International law and regulations (FTA, Quota)	17%	5%	5%	6%	12%	6%	6%
- No skill set	26%	50%	32%	19%	37%	26%	11%
- Technology Constraint	26%	30%	47%	19%	28%	34%	-6%
- Lack of raw material	22%	20%	53%	44%	21%	49%	-28%
- Poor Infrastructure	17%	25%	32%	13%	21%	23%	-2%
- Invest in other business with higher return	0%	0%	5%	0%	0%	3%	-3%
Other							
Strategy							
- OEM Niche	39%	25%	16%	31%	33%	23%	10%
- OBM building brand	30%	45%	53%	38%	37%	46%	-9%
- OBM by acquire	9%	5%	0%	0%	7%	0%	7%
- No change	0%	20%	16%	19%	9%	17%	-8%
- Govt Policy	0%	0%	0%	0%	0%	0%	0%

Export Clothing	High decline	Normal decline	Normal growth	High growth	Bad Performance	Good Performance	Difference Test
Government Policy							
- FOREX	83%	70%	95%	69%	77%	83%	-6%
- Reduce import tax	35%	60%	37%	31%	47%	34%	12%
- reduce VAT	39%	50%	32%	38%	44%	34%	10%
- Custorm	17%	10%	11%	19%	14%	14%	0%
- Lbaour Cost	35%	55%	42%	31%	44%	37%	7%
- Laobur productivity	17%	15%	11%	6%	16%	9%	8%
- Tech Knowledge	22%	35%	37%	0%	28%	20%	8%
- Marketing	9%	15%	16%	6%	12%	11%	0%
- Infrastructure	30%	30%	26%	6%	30%	17%	13%
- Bus Match	26%	20%	21%	19%	23%	20%	3%
- Cluster	13%	20%	16%	44%	16%	29%	-12%
- SC Linkage	9%	15%	21%	19%	12%	20%	-8%
Competitiveness							
- Quality of product	3.57	3.30	3.37	3.75	3.44	3.54	-10%
- Variety of product	4.22	3.80	4.16	3.94	4.02	4.06	-3%
- Lead time & Delivery time	4.00	3.55	3.68	3.75	3.79	3.71	8%
- Labor productivity	3.74	3.30	3.58	3.38	3.53	3.49	5%
- Manufacturing productivity	3.48	3.10	3.26	3.63	3.30	3.43	-13%
- Abilities of skilled labor	3.09	3.05	3.11	3.38	3.07	3.23	-16%
- Abilities of non-skilled labor	4.00	3.75	4.05	4.06	3.88	4.06	-17%
- Production capacity	3.48	3.35	3.53	3.69	3.42	3.60	-18%
- Marketing abilities	3.13	3.05	3.05	3.25	3.09	3.14	-5%
- Marketing channel	3.26	2.95	3.00	3.31	3.12	3.14	-3%
- Abilities of Trading firms	3.35	3.00	3.26	3.50	3.19	3.37	-19%
- Custom procedure	3.26	3.15	3.26	3.44	3.21	3.34	-13%
- Raw material cost	3.26	3.20	3.32	3.56	3.23	3.43	-20%
- Import Tax	2.57	2.25	2.42	2.63	2.42	2.51	-10%
- Labor cost	3.13	2.80	3.05	3.06	2.98	3.06	-8%
- Manufacturing cost	2.35	2.20	2.05	2.50	2.28	2.26	2%
- Electricity & utilities cost	2.57	2.40	2.32	2.69	2.49	2.49	0%
- Insurance cost	3.00	2.80	2.74	3.00	2.91	2.86	5%
- FOREX	3.09	2.95	3.11	3.00	3.02	3.06	-3%
- Export Tax	2.65	2.60	2.58	2.69	2.63	2.63	0%
- Agent or Commission Fee	3.39	2.85	3.00	3.50	3.14	3.23	-9%
- Land Logistics	3.04	2.90	3.11	3.00	2.98	3.06	-8%
- Shipping cost	2.87	2.95	3.16	2.94	2.91	3.06	-15%
- Upgrade process	2.78	2.90	2.68	3.00	2.84	2.83	1%

Export Clothing	High decline	Normal decline	Normal growth	High growth		Bad Performance	Good Performance	Difference Test
Reason for upgrading								
- Competition	22%	20%	21%	19%		21%	20%	1%
- Lead firm	74%	70%	74%	81%		72%	77%	-5%
- Regulation	22%	10%	16%	25%		16%	20%	-4%
- Government	4%	15%	37%	31%		9%	34%	-25%
- Lower cost	0%	5%	11%	0%		2%	6%	-3%
- Inc Sales	57%	75%	63%	75%		65%	69%	-3%
- Inc Profit	61%	70%	79%	69%		65%	74%	-9%
- New Opp	52%	25%	21%	44%		40%	31%	8%
- Challenge for upgrade	4%	20%	16%	19%		12%	17%	-6%

Performance and business model test summary

Summary	Domestic Textile Poor Performance	Domestic Textile Good Performance	Export Textile Poor Performance	Export Textile Good Performance	Domestic Clothing Poor Performance	Domestic Clothing Good Performance	Export Clothing Poor Performance	Export Clothing Good Performance
Sample Size	21	14	35	10	7	3	43	35
% of Sample	13%	8%	21%	6%	4%	2%	26%	21%
Characteristic								
Year in operation								
- 0-10	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- 10-30	Yes; Lower	Yes; Higher	No	No	No	No	No	No
- 30-50	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- More than 50	No	No	No	No	No	No	No	No
Revenue Size								
- Less than USD1 mil	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- 1-5 USD mil	Yes; Lower	Yes; Higher	No	No	No	No	No	No
- 5-10 USD mil	Yes; Higher	Yes; Lower	No	No	No	No	No	No
- More than USD10 mil	No	No	No	No	Yes; Lower	Yes; Higher	No	No
Profit Size								
- Net Loss	Yes; Lower	Yes; Higher	Yes; Higher	Yes; Lower	No	No	Yes; Higher	Yes; Lower
- 0 - 0.25 USD mil	No	No	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher
- 0.25-0.5 USD mil	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- 0.5-1 USD mil	No	No	No	No	No	No	No	No
- More than USD1 mil	No	No	No	No	No	No	No	No
Net Margin								
- Less than -10%	No	No	No	No	No	No	No	No
- -10%-0%	No	No	No	No	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower
- 0-10%	No	No	No	No	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher
- More than 10%	No	No	No	No	No	No	No	No
Revenue Growth Rate								
- Mean	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	No	No	Yes; Lower	Yes; Higher
- Median	No	No	Yes; Lower	Yes; Higher	No	No	Yes; Lower	Yes; Higher
- Min	No	No	No	No	No	No	No	No
- Max	No	No	No	No	No	No	No	No
Average Revenue Size								
- Mean	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher
- Median	No	No	No	No	No	No	No	No
- Min	No	No	No	No	No	No	No	No
- Max	No	No	No	No	No	No	No	No

Summary	Domestic Textile Poor Performance	Domestic Textile Good Performance	Export Textile Poor Performance	Export Textile Good Performance	Domestic Clothing Poor Performance	Domestic Clothing Good Performance	Export Clothing Poor Performance	Export Clothing Good Performance
Average Profit Size								
- Mean	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Higher	Yes; Lower	Yes; Lower	Yes; Higher
- Median	No	No	No	No	No	No	No	No
- Min	No	No	No	No	No	No	No	No
- Max	No	No	No	No	No	No	No	No
Profit Growth Rate								
- Mean	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Higher	Yes; Lower	Yes; Lower	Yes; Higher
- Median	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	No	No	Yes; Lower	Yes; Higher
- Min	No	No	No	No	No	No	No	No
- Max	No	No	No	No	No	No	No	No
Profit Margin								
- Mean	No	No	No	No	No	No	No	No
- Median	No	No	No	No	No	No	No	No
- Min	No	No	No	No	No	No	No	No
- Max	No	No	No	No	No	No	No	No
Initial Investment Size								
- Less than USD 1 mil	No	No	No	No	No	No	No	No
- USD 1 mil – USD 6 mil	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- More than USD 6 mil	No	No	No	No	Yes; Lower	Yes; Higher	No	No
Employment Size	No	No	No	No	No	No	No	No
- Less than 50	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- 50 to 200	No	No	No	No	No	No	No	No
- More than 200	No	No	No	No	Yes; Lower	Yes; Higher	No	No
Value proposition								
Type of manufacturers								
- Exclusive No Brand	No	No	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	No	No
- Exclusive OEM	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- Exclusive ODM	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Exclusive OBM	No	No	No	No	No	No	No	No
- Dual-model	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- Mixed	No	No	No	No	No	No	No	No
Target Customer								
Export Only	No	No	No	No	No	No	No	No
Export Focus	No	No	No	No	No	No	No	No

Summary	Domestic Textile Poor Performance	Domestic Textile Good Performance	Export Textile Poor Performance	Export Textile Good Performance	Domestic Clothing Poor Performance	Domestic Clothing Good Performance	Export Clothing Poor Performance	Export Clothing Good Performance
Export Market								
- EU	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- USA	No	No	Yes; Lower	Yes; Higher	No	No	No	No
- Japan	No	No	No	No	No	No	No	No
- China	No	No	No	No	No	No	No	No
- ASEAN	No	No	No	No	No	No	No	No
- Other	No	No	No	No	Yes; Higher	Yes; Lower	No	No
Distribution Channel								
Lead firms								
- Exclusive Retail	No	No	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	No	No
- Exclusive Agent	No	No	No	No	No	No	No	No
- Exclusive Trader	No	No	No	No	No	No	No	No
- Exclusive Buying Office	No	No	No	No	No	No	No	No
- Mixed	No	No	No	No	No	No	No	No
Customer relationship								
Governance								
- Exclusive Hirarchy	No	No	No	No	No	No	No	No
- Exclusive Captive	No	No	No	No	No	No	No	No
- Exclusive Relational	No	No	No	No	No	No	No	No
- Exclusive Modular	No	No	No	No	No	No	No	No
- Exclusive Market	No	No	No	No	No	No	No	No
- Mixed	No	No	No	No	No	No	No	No
Core Competency								
Upgrading								
- Product Upgrading	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Process Upgrading	Yes; Lower	Yes; Higher	No	No	Yes; Lower	Yes; Higher	No	No
- Functional Upgrading	No	No	No	No	No	No	No	No
Support from Lead Firms								
- Finance	No	No	Yes; Higher	Yes; Lower	No	No	No	No
- HRD	No	No	No	No	No	No	No	No
- Design	Yes; Higher	Yes; Lower	No	No	Yes; Higher	Yes; Lower	No	No
- Production	No	No	No	No	No	No	No	No
- Marketing	No	No	Yes; Higher	Yes; Lower	Yes; Lower	Yes; Higher	Yes; Higher	Yes; Lower
- R&D	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower
- Regulation	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	Yes; Higher	Yes; Lower	No	No

Summary	Domestic Textile Poor Performance	Domestic Textile Good Performance	Export Textile Poor Performance	Export Textile Good Performance	Domestic Clothing Poor Performance	Domestic Clothing Good Performance	Export Clothing Poor Performance	Export Clothing Good Performance
Challenges from upgrading								
- Not interested in upgrading	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- Lack of Financial support	No	No	No	No	No	No	No	No
- Lack of market knowledge	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Unsupportive government policy	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Lead firms block suppliers/trading firms	No	No	No	No	No	No	No	No
- International law and regulations (FTA, Quota)	No	No	No	No	No	No	No	No
- No skill set	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Technology Constraint	No	No	No	No	No	No	No	No
- Lack of raw material	No	No	No	No	Yes; Higher	Yes; Lower	Yes; Lower	Yes; Higher
- Poor Infrastructure	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Invest in other business with higher return	No	No	No	No	Yes; Higher	Yes; Lower	No	No
Other								
Strategy								
- OEM Niche	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- OBM building brand	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- OBM by acquire	No	No	No	No	No	No	No	No
- No change	No	No	No	No	No	No	No	No
- Govt Policy	No	No	No	No	No	No	No	No
Government Policy								
- FOREX	No	No	No	No	No	No	No	No
- Reduce import tax	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- reduce VAT	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Custorm	No	No	No	No	No	No	No	No
- Lbaour Cost	No	No	No	No	No	No	No	No
- Laobur productivity	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- Tech Knowledge	Yes; Lower	Yes; Higher	No	No	No	No	No	No
- Marketing	No	No	No	No	Yes; Higher	Yes; Lower	No	No
- Infrastructure	Yes; Lower	Yes; Higher	No	No	Yes; Higher	Yes; Lower	No	No
- Bus Match	No	No	No	No	Yes; Lower	Yes; Higher	No	No
- Cluster	No	No	No	No	No	No	No	No
- SC Linkage	No	No	No	No	No	No	No	No

Bibliography

1. Akrasanee, N. (1973) *Growth and structural change in the manufacturing sector in Thailand 1960-69.* The Developing Economies, 11, pp.416–442.

2. Amaghini, A. (2006) "Upgrading in International Trade: Methods and Evidence from Selected Sectors", in C. Pietrobelli and R. Rabelloti, editors, Upgrading to Compete: Global Value Chains, Clusters, and SMEs in Latin America, Washington, D.C.: Inter-American Development Bank.

3. Appelbaum R.P. and Gereffi G. (1994) Power and profits in the apparel commodity chain. in: Edna Bonacich et al. (eds.), *Global Production: The Apparel Industry in the Pacific Rim.* Philadelphia, PA: Temple University Press, pp.42-64

4. Asian Development Bank (ADB) (2002) *The International Competitiveness of Asian Economies in the Apparel Commodity Chain*, Mandaluyong City, Philippines: ADB

5. Au, K.-F. and Yeung, K.-W. (1999) Production shift for the Hong Kong clothing industry. *Journal of Fashion Marketing and Management*, 3(2), pp.166-78

6. Baden-Fuller C. and Morgan M.S. (2010) Business models as models. *Long range planning,* 43(2-3/April - June), pp.156-171

7. Bair J. (2006) Regional trade and production blocs in a global industry: towards a comparative framework for research. *Environment and Planning* A 38(12), pp.2233 – 2252

8. Bair, J. (2008) Global Commodity Chains. Genealogy and Review. In: Bair, Jennifer (Ed.), *Frontiers of Commodity Chain Research*, Stanford Univ. Press, Stanford California, pp.1–34

9. Bair, J. and Gereffi, G. (2011) Local clusters in global chains: the causes and consequences of export dynamism in Torreon's blue jeans industry. *World Development* 29 (11,November), pp. 1885-1903.

10. Balassa, B (1965) Trade Liberalization and Revealed Comparative Advantage, *Manchester School of Economic and Social Studies*, 33, pp.99-123

11. Barney, J (1991) Firm Resources and Sustained Competitive Advantage. *Journal of Management* 17(1), pp.99-120

12. Barney, J (1995) Looking inside for competitive advantage. *The Academy of Management Executive* 9(4), pp.49-62

13. Bonacich, E., Appelbaum, R.P. (2000) *Behind the Label: Inequality in the Los Angeles Apparel Industry*, University of California Press, Berkeley, CA.

14. Byoungho, J (2004) Apparel industry in East Asian newly industrialized countries: Competitive advantage, challenge and implications, *Journal of Fashion Marketing and Management,* 8(2), pp.230 – 244

15. Chaloemtiarnana, T. (1979) *Thailand: The Politics of Despotic Paternalism.* Bangkok: Thammasat University Press

16. Chang, P.-L., Hsu, C.-W., Tsai, C.-T. (1999) A stage approach for industrial technology development and implementation—the case of Taiwan's computer industry. *Technovation* 19 (4), 233–241

17. Chesbrough, H. (2010) Business Model Innovation: Opportunities and Barriers, *Long Range Planning*, 43(2–3,April–June), pp.354–363

18. Chesbrough, H. and Kenichi K. (2001) "The Modularity Trap: Innovation, Technology Phase Shifts, and the Resulting Limits of Virtual Organizations." *In Managing Industrial Knowledge*, ed. L. Nonaka and D. Teece, 202–30. London: Sage Press.

19. Chu, W.-W. (2009) Can Taiwan's second movers upgrade via branding? *Research Policy* 38 (6), 1054–1065.

20. Cooke, P. and Morgan, K. (1993) The Network Paradigm: New Departures in Corporate and Regional Development. *Environment and Planning D: Society and Space*. 11: 543-564.

21. Creed, C., Freeman, R., Robinson, B. and Woodley, A. *Mixed research methods, Practitioner Research and Evaluation Skills Training in Open and Distance Learning*, PREST Learning

22. Dedrick, J., Kraemer, K. and Linden, G. (2007) Mapping the Value of an Innovation: an analytical Framework, *UC Irvine: Personal Computing Industry Center.*

23. Dedrick, J., Kraemer, K. and Linden, G. (2009) Who profits from innovation in global value chains?: a study of the iPod and notebook PCs*, Industrial and Corporate Change* Feb 2010, Vol. 19 Issue 1, p81-116.

24. Department for International Development (DFID) 2004 (Chapter 1)

25. Dicken P. (1998) *Global Shift: Transforming the World Economy*, 3rd ed., New York: Guilford Press

26. Dickerson, K. G. (1999) *Textiles and Apparel in the Global Economy*, 3rd edn. Englewood Cliffs, NJ: Prentice Hall

27. Dierickx, I. and Cool, K. (1989) Asset Stock Accumulation and Sustainability of Competitive Advantage, *Management Science*; 35(12), pp. 1504–1511

28. Doyle, J. K., Face-to-Face Surveys, Department of Social Science and Policy Studies, Worcester Polytechnic Institute, [online], Available at: www.wpi.edu/Images/CMS/SSPS/Doyle_-_Face-to-Face_Surveys.pdf

29. Enanoria, W., Survey Methodology, Center for Infectious Disease Preparedness, UC Berkeley School of Public Health, [online], Available at: www.idready.org/courses/2005/.../survey_IntroSurveyMethods.pdf

30. Ernst, D., Kim, L. (2002). Global production networks, knowledge diffusion, and local capability formation. *Research Policy* 31 (8/9), 1417–1429.

31. Fine, C.H. (1998) *Clockspeed: Winning Industry Control in the Age of Temporary Advantage*, Reading, MA: Perseus.

32. Gereffi, G. (1992) New Realities of Industrial Development in East Asia and Latin America: Global, Regional, and National Trends. pp. 85-112 in Richard P. Appelbaum and Jeffrey Henderson (eds.), *States and Development in the Asian Pacific Rim,* Newbury Park, CA: Sage Publications

33. Gereffi, G. (1994) The Organisation of Buyer-driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks, in G. Gereffi and M. Korzeniewicz (eds), *Commodity Chains and Global Capitalism*, Westport, CT: Praeger: 95–122

34. Gereffi, G. (1994b). The International Economy and Economic Development. in N. J. Smelser and R. Swedberg, eds., *The Handbook of Economic Sociology*. Princeton, NJ: Princeton University Press

35. Gereffi, G. (1995) Global Production Systems and Third World Development. in B. Stallings, ed., *Global Change, Regional Response: The New International Context of Development*. New York: Cambridge University Press.

36. Gereffi, G. (1997). Global shifts, regional response: can North America meet the full-package challenge? *Bobbin*, (November), 15.

37. Gereffi, G. (1998) Commodity chains and regional divisions of labour in East Asia, in E.M. Kim (ed.), *The Four Asian Tigers: Economic Development and the Global Political Economy,* San Diego, CA, Academic Press, pp. 93-124

38. Gereffi G. (1999) International trade and industrial upgrading in the apparel commodity chain, *Journal of International Economics*, 48(1,June), pp. 37-70(34), Elsevier Science

39. Gereffi G. (2001) Shifting Governance Structures in Global Commodity Chains, With Special Reference to the Internet, *American Behavioral Scientist*, 44(10), pp. 1616-1637

40. Gereffi, G. (2002) Prospects for Industrial Upgrading by Developing Countries in the Global Apparel Commodity Chain., *International Journal of Business and Society*, 3 (1, January), pp. 27-60

41. Gereffi, G. (2005) The Global Economy: Organization, Governance, and Development, in *The Handbook of Economic Sociology*, 2nd ed., edited by Neil J. Smelser and Richard Swedberg (eds.), pp. 160-182, Princeton, NJ: Princeton University Press and Russell Sage Foundation

42. Gereffi, G. (2008) Global Value Chains, Industrial Upgrading and Jobs in Large Emerging Economies: A Comparison of China, India, and Mexico, USAID Microenterprise Breakfast Seminar Series

43. Gereffi, G. and Frederick, S. (2010) The Global Apparel Value Chain, Trade and the Crisis: Challenges and Opportunities for Developing Countries (April), World Bank Policy Research Working Paper 5281

44. Gereffi, G., Humphrey, J., Kaplinsky, R. and Sturgeon, T. (2001) *Introduction: Globalisation, value chains and development.* IDS Bulletin. 32(3): pp.1-8.

45. Gereffi, G., Humphrey, J. and Sturgeon, T. (2005) The governance of global value chains. *Review of International Political Economy* 12(1,February), 78-104

46. Gereffi G. and Kaplinsky R. (2001) *The Value of Value Chains. IDS Bulletin,* 32 (3)

47. Gereffi, G. and Korzeniewicz, M. (1994). *Commodity Chains and Global Capitalism*, Westport, CT: Praeger

48. Gereffi, G.,Korzeniewicz, M.E., and Korzeniewicz R.P. (1994) *Introduction: Global Commodity Chains, in Commodity Chains and Global Capitalism,* edited by Gary Gereffi and Miguel Korzeniewicz, pp. 1-14, Westport, CT: Greenwood Press

49. Gereffi, G. and Memedovic, O. (2002) Prospects for Industrial Upgrading by Developing Countries in the Global Apparel Commodity Chain., *International Journal of Business and Society*, 3(1), pp. 27-60

50. Gereffi, G. and Memedovic, O. (2003). *The Global Apparel Value Chain: What Prospects for Upgrading for Developing Countries? (Report)*. Vienna, Austria: United Nations Industrial Development Organization (UNIDO).

51. Gereffi, G. and Tam, T. (1998) *Industrial upgrading through organizational chains: Dynamics of rent, learning, and mobility in the global economy*, paper presented at the 93rd Annual Meeting of the American Sociological Association, San Francisco, CA, August 21–25.

52. Gerschenkron, A. (1962). Economic backwardness in historical perspective. *Economic backwardness in historical perspective*: a book of essays, Cambridge:5-30

53. Gibbon, P. and Ponte, S. (2005) Trading Down: Africa, Value Chains and the Global Economy, Philadelphia: Temple University Press.

54. Giuliani, E., Pietrobelli, C. and Rabellotti, R. (2005) Upgrading in Global Value Chains: Lessons from Latin American Clusters , World Development, 33 (4): pp.549-73

55. Guerrieri P. and Pietrobelli C., (2004), "Industrial Districts' Evolution and Technological Regimes: Italy and Taiwan", *Technovation*, 24(11): pp.899–914.

56. Haase, J. E., & Myers, S. T. (1988). Reconciling Paradigm Assumptions of Qualitative and Quantitative Research. *Western Journal of Nursing Research*, 10(2), 128-137

57. Henderson, J., Dicken, P., Hess, M., Coe, N. and Yeung, H. (2002) Global production networks and the analysis of economic development. *Review of International Political Economy*, 9(3): pp.36–64.

58. Humphrey, J., and Schmitz, H. (1998) 'Trust and inter--firm relations in developing and transition economies', *Journal of Development Studies* 34 (4): 32--61.

59. Humphrey J., Schmitz H., (2000) *Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research*, IDS Working Paper, No.120, Institute of Development Studies, Brighton: University of Sussex.

60. Humphrey J., Schmitz H. (2002). *Developing Country Firms in the World Economy: Governance and Upgrading in Global Value Chains*, INEF Report, No. 61, Duisburg: University of Duisburg

61. Humphrey, J. (2004) *Upgrading in global value chains*, Working Paper No. 28, Policy Integration Department, World Commission on the Social Dimension of Globalization, International Labour Office, Geneva

62. Humphrey, J. and Memedovic, O. (2006) *Global Value Chains in the Agrifood Sector*, working paper, United Nations Industrial Development Organization (UNIDO)

63. Humphrey, J., and Schmitz, H. (2000) Governance and upgrading: Linking industrial cluster and global value chain research, IDS Working Paper No. 120, *Institute of Development Studies*, University of Sussex, Brighton.

64. Humphrey, J. and Schmitz, H. (2001), *Governance in Global Value Chains*. IDS Bulletin, 32: pp.19–29.

65. Humphrey, J. and Schmitz, H. (2002) How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters?, *Regional Studies*, 36(9): pp.1017–27.

66. Humphrey, J., Schmitz, H. (2008) Inter-firm relationships in global value chains: trends in chain governance and their policy implications, *International Journal of Technological Learning, Innovation and Development*, 1(3), pp. 258-282

67. Jarillo, J. (1988) 'On strategic networks', *Strategic Management Journal* 9 (1): 31--41.

68. Jin, B. (2001), *Global sourcing in apparel industry*, paper presented at the Joint World Conference of Korean Society of Clothing and Textiles/International Textiles and Apparel Association, Seoul, June, .

69. Johnson, B. and Christensen, L., *Quantitative, Qualitative, and Mixed Research,* [online], Available at: http://www.southalabama.edu/coe/bset/johnson/lectures/lec2.pdf

70. Kajornboon, A. B. (2005) *Using interviews as research instruments*, Language Institute, Chulalongkorn University

71. Kaplinsky R. (2000) Globalisation and unequalisation: What can be learned from value chain analysis?, *Journal of Development Studies* 37 (2), pp.117-46.

72. Kaplinsky , R. and Morris , M. (2001) *A handbook for value chain research,* Retrieved from www.seepnet.org

73. Kaplinsky R. and Morris, M., (2001) *A Manual for Value Chain Research*, Retrieved from www.ids.ac.uk/ids/global/

74. Kaplinsky, R. and J. Readman (2004) "Globalisation and upgrading: what can (and cannot) be learnt from international trade statistics in the wood furniture sector?", mimeo, Centre for Research in Innovation and Management, Brighton.

75. Kaplinsky, Raphael, Morris, Mike and Readman, Jeff (2002) Understanding Upgrading Using Value Chain Analysis In: BAM 2002, 9-11 Sep 2002, London, UK

76. Khanna, S.R. (1993)Structural changes in Asian textiles and clothing industries: the second migration of production", *Textile Outlook International,* 49(September), pp. 11-32

77. Konczal, E. F. (1975). Models are for managers, not mathematicians, *Journal of Systems Management*, 26(1), pp. 12-15

78. Langlois, R., and Robertson, P. (1995) *Firms, Markets and Economic Change*, London: Routledge.

79. Lotharukpong, C (n.d.) *The Future of Thailand's Textile and Garment Industry*, International Chamber of Commerce Thailand

80. Lorenz, E. (1988) 'Neither friends nor strangers: informal networks of subcontracting in French industry', in D. Gambetta (ed.) *Trust - Making and Breaking Cooperative Relations*, Oxford: Basil Blackwell

81. Marrelli, A. F. (2005) *The Performance Technologist's Toolbox – Literature Review*, Performance Improvement, 44(7), p. 43

82. Mathews J.A. (2002a) *Dragon multinational: Towards a new model of global growth*.NewYork: Oxford University Press.

83. Mathews, J. A. (2002b) Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management,* 19(4): pp.467–488.

84. Mathews, J. A. (2004) *Catchup strategies and the latecomer effect: World industrial development in the 21st century*. MGSM Working paper 2004–18. Sydney: Macquarie Graduate School of Management.

85. Mathews, J.A. (2006) Catch-up strategies and the latecomer effect in industrial development, *New Political Economy*, 11:3, pp.313-335

86. Mathews, J. A. (2006b). Dragon multinationals: New players in 21st century globalization. *Asia Pacific Journal of Management*, 23, pp.5-27.

87. Mathews, J. A., and D. S. Cho. (2000) *Tiger Technology: The Creation of a Semi-Conductor Industry in East Asia*. Cambridge: Cambridge University Press.

88. McCormick, D. and Schmitz, H., (2001) *Manual for Value Chain Research on Homeworkers in the Garment Industry*, Retrieved from www.ids.ac.uk/ids/global/wiego.html

89. Memedovic, O., Arie K. and Willem M.T.M. (1999), *Multialteralisam and Regionalism in the Post-Uruguay Round Era: What role for the EU?,* Kluwer Academic Publishers, Norwell, Massachusetts

90. Menkhoff, T. (1992) 'Xinyong or how to trust trust? Chinese non-contractual business relations and social structure: The Singapore case', *Internationales Asienforum* 23 (1--2): 261--88.

91. Milberg, William and Winkler, Deborah E., Economic and Social Upgrading in Global Production Networks: Problems of Theory and Measurement (June 18, 2010). Capturing the Gains Working Paper No. 2010

92. Mora, M. *Quantitative Vs. Qualitative Research – When to Use Which*. [online] , Available at: http://www.surveygizmo.com/survey-blog/quantitative-qualitative-research/

93. Organisation for Economic Co-operation and Development (OECD) (2007) *Staying Competitive in the Global Economy: Moving Up the Value Chain*, Paris, France: OECD

94. Osterwalder, A. (2004). *The Business Model Ontology - a proposition in a design science approach*. Dissertation, University of Lausanne, Switzerland

95. Osterwalder, A. Pigneur, Y. and Christopher T.L. (2005) Clarifying business models: Origins, present, and future of the concept, *Communications of the Association for Information Systems,* 16 (1), pp.1-25

96. Özatagan, G. (2011) "Shifts in value chain governance and upgrading in the European periphery of automotive production: evidence from Bursa, Turkey" *Environment and Planning;* A 43(4) 885 – 903

97. Penrose, E. (1959/1995). *The Theory of the Growth of the Firm*. London: Basil Blackwell.

98. Peteraf, M.A. (1993), The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*; 14, (3), pp. 179–191.

99. Pietrobelli, C. and R. Rabelloti (2006) "Clusters and Value Chains in Latin America: In Search of an Integrated Approach", in C. Pietrobelli and R. Rabelloti, editors, Upgrading to Compete: Global Value Chains, Clusters, and SMEs in Latin America, Washington, D.C.: Inter-American Development Bank.

100.Ponte, S. (2008), Governing through quality: conventions and supply relations in the value chain for South African Wine, *Sociologia Ruralis*, 49(3), pp. 236-257

101.Porter, M. (1990). *The Competitive Advantage of Nations*. Free Press, New York.

102.Powell, W. (1990) 'Neither market nor hierarchy: network forms of organization', *Research in Organizational Behaviour* 12: 295--336.

103.Prahalad, C. and Hamel, G. (May-June, 1990). "The Core competence of the corporation". *Harvard Business Review*, pp.79-91.

104.Raikes, P., Jensen, M.F. and Ponte, S., (2000) Global Commodity Chain Analysis and the French Filière Approach: Comparison and Critique, *Economy and Society* 29(3): pp.390–417

105.Reichardt, C. S. & Rallis, S. F. (1994). Qualitative and quantitative inquiries are not incompatible: A call for a new partnership. *New Directions for Program Evaluation* 61: 85–91.

106.Robert Wood Johnson Foundation, *Qualitative Research Guideline Project*, [online] Available at: http://www.qualres.org/HomeSemi-3629.html

107.Sale J.E.M., Lohfeld H., and Brazil Kevin(2002): Revisiting the Quantitative-Qualitative Debate: Implications for Mixed-Methods Research, p.45

108.Sanchez, R., Heene, A., editors (1997), *Competence-Based Strategic Management,* published in the Strategic Management Society series by John Wiley & Sons.

109.Schmitz, H. (1999) Global competition and local co-operation: Success and failure in the Sinos Valley, Brazil, *World Development* 27 (9), pp.1627-50.

110.Siriprachai, S (1995b) Industrialisation and Inequality in Thailand in Ingela Palmgren, NildFold, Johannes D. Schmidt and Jacques Hersh (eds.). *Emerging Classes and GrowingInequalities in Southeast Asia*

111.Speer, J.K. (2001), The Bobbin top 50: apparel retailers take on a new face, *Bobbin* 42(10), pp. 45-66.

112. Strategies and a Master Plan for Increasing Competitiveness of the Textile and Clothing Industry (2007-2011) (2007), Thailand Textile Institute, Office of Industrial Economics, Ministry of Industry

113. Sturgeon, T., (1997) *Turn-Key Production Networks: A New Model of Industrial Organization?*, BRIE Working Paper #92A, Berkeley Roundtable on the International Economy, Berkeley, CA: University of California at Berkeley

114. Sturgeon, T., (1997). *Conceptualizing Integrative Trade: The Global Value Chains Framework*, Prepared for the CTPL conference. 2006

115. Sturgeon, T. (2001) *How do we define value chains and production networks?*. IDS Bulletin, 32(3): pp.9–18.

116. Sturgeon, T. (2002) Modular production networks: A new American model of industrial organization. *Industrial and Corporate Change*, 11(3): pp.451–96.

117. Sturgeon, T. and Kawakami, M., (2010), Global value chains in the electronics industry : was the crisis a window of opportunity for developing countries ? in Cattaneo, Olivier, Gary Gereffi and Cornelia Staritz eds. *Global Value Chains in a Postcrisis World: a Development Perspective*, Washington, D.C.: The World Bank

118. Sturgeon, T. (2003) 'What Really Goes on in Silicon Valley? Spatial Clustering Dispersal in Modular Production Networks',*Journal of Economic Geography*, 3: 199–225.

119. Sturgeon, T. and Lester, R.K. (2004) 'The new global supply-base: New challenges for local suppliers in East Asia' in Shahid, Y., Anjum, A.M. and Nabeshima, K. (Eds): *Global Production Networking and Technological Change in East Asia*, The World Bank and Oxford University Press, Washington, DC.

120. Sturgeon, T., Van Biesebroeck, J., Gereffi, G. (2008), Value chains, networks and clusters: reframing the global automotive industry, *Journal of Economic Geography,* 8, pp.297-321.

121. Sukamolson, S. (2003) *Fundamentals of quantitative research*, Language Institute, Chulalongkorn University, e-Journal for Researching Teachers, 1(2,May) [online], Available at: www.culi.chula.ac.th/e-journal/bod/suphat%20sukamolson.pdf

122. Suphachalasai, S. (1990) Export growth of Thai clothing and textiles. *World Economy*, 13: pp.51–73.

123. Suphachalasai, S. (1992) *The structure of the Textile Industry and the Government Policy in Thailand*, The 1992 Year-end Conference, Thailand Development Research Institute, Bangkok

124. Supachalasai, S., (1996) *The Possibilities of Export and the Impact of the ASEAN Free Trade Areas (Textile Industry)*, Thai Development Research Institute

125. Suphachalasai, S. (1997) *The Thai Textile and clothing Industry and Government's Policy*, Thailand Development Research Institute

126. Teece, D. (1996) Firm Organization, Industry Structure, and Technological Innovation. *Journal of Economic Behavior*. 31: 193-224.

127. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7): 509-533.

128. Teece, D.J. (2010) Business Models, Business Strategy and Innovation, *Long Range Planning,* 43(2–3,April–June), pp. 172–194

129. Thailand 's competitiveness analysis (2003), Office of the national economic and social development board of Thailand

130. Thailand Textile Institute (1995-2011) *Thai Textile Statistics. Bangkok*.

131. Thailand's Textile & Garment Competitiveness Benchmarking (2005), Thailand Textile Institute

132. Thailand's Textile Statistics (1995, 2005, 2010), Industrial Works Department, Ministry of Industry

133. The Textile & Garment 10-Year Master Plan (2003), Thailand Textile Institute, Office of Industrial Economics, Ministry of Industry

134. The Textile & Garment 10-Year Master Plan (2007), Thailand Textile Institute, Office of Industrial Economics, Ministry of Industry

135. The United Nations Conference on Trade and Development (UNCTAD) (2006) *Global value chains for building national productive capacities,* Geneva, Switzerland: UNCTAD

136. The United Nations Conference on Trade and Development (UNCTAD) (2008) *Global Value Chains: Opportunities and Challenges for International and Domestic Firms*, Geneva, Switzerland: UNCTAD

137. The World Trade Organization (2001) , Trading into the Future: The Introduction to the WTO

138. Thoburn, J. (2009) *The impact of the world garment recession on the textile and garment industries of Asia*. Seoul (Korea) Workshop: November 13-15: United Nations Industrial Development Organization (UNIDO).

139. Thorelli, H. (1986) 'Networks: between markets and hierarchies', *Strategic Management Journal* 7: 37--51.

140. Tsui-Auch, L.S. (1998) Has the Hong Kong model worked? Industrial policy in retrospect and prospect. *Development and Change* 29 (1), 55–79.

141. United Nations Commodity Trade Statistics Database, [online] available at: http://comtrade.un.org/db/

142. United Nations Industrial Development Organization (UNIDO) (2003) *The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries,* Vienna, Austria: UNIDO

143. Wernerfelt, B. (1984). 'A Resource-based view of the firm', *Strategic Management Journal*, 5(2), pp. 171-180

144. Yamane, Taro. 1967. Statistics, *An Introductory Analysis*, 2nd Ed., New York: Harper and Row.

145. Yeung, Henry Wai-chung (2009) "Regional Development and the Competitive Dynamics of Global Production Networks: An East Asian Perspective." *Regional Studies* 43 (3) (April): 325–51.

146. Yue, P. and Evenett S.J. *(*2010) Moving up the Value Chain: Upgrading China's Manufacturing Sector, *International Institute for Sustainable Development*

147. Zott, C., Amit, R. H. and Massa, L. (2001) *The Business Model: Recent Developments and Future Research*

148. Zott C. and Amit R. (2009) Business Model Design: An Activity System Perspective, *Long Range Planning*

149. Zott, C. and Amit, R.H. (2009) *Designing Your Future Business Model: An Activity System Perspective.* IESE Business School Working Paper No. 781.